AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Central District of California, Los Angeles Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:24-cv-3951	5/10/2024	for the Central District of California, Los Angeles Division

PLAINTIFF	DEFENDANT
Sandpiper CDN, LLC	Google LLC

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,478,903	7/2/2013	Sandpiper CDN, LLC
2	8,595,778	11/26/2013	Sandpiper CDN, LLC
3	8,645,517	2/4/2014	Sandpiper CDN, LLC
4	8,719,886	5/6/2014	Sandpiper CDN, LLC
5	9,021,112	4/28/2015	Sandpiper CDN, LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☑ Other Pleading		
	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,924,573	2/16/2021	Sandpiper CDN, LLC
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	04/28/2015	9021112	0023-US-D1	9055

83579 7590 04/08/2015

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Michael Slocombe, Acton, MA;
Matthew Miller, Plainville, MA;
Casey Ajalat, North Billerica, MA;
Vincent A. Fuller III, Palo Alto, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 5

Complete if Known	
Application Number	12/050,648
Filing Date	March 18, 2008
First Named Inventor	Michael Slocombe et al.
Art Unit	2449
Examiner Name	Ashokkumar B. Patel
Attorney Docket Number	0023-US-D1

Change(s) applied to document, /P.A.P./ 3/24/2015

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6,243,760	June 5, 2001	Armbruster	
		US- 5,819,092	October 6, 1998	Ferguson	
		US- 6,081,835	June 27, 2000	Antcliff	
		US- 6,078,943	June 20, 2000	Yu	
		US- ~~6,187,160~~ 6,178,160	January 23, 2001	Bolton	
		US- 6,167,427	December 26, 2000	Rabinovich	
		US- 6,112,239	August 29, 2000	Kenner	
		US- 5,956,716	September 21, 1999	Kenner	
		US- 6,052,718	April 18, 2000	Gifford	
		US- 5,920,701	July 6, 1999	Miller	
		US- 5,812,769	September 22, 1998	Graber	
		US- 6,108,703	August 22, 2000	Leighton	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Kamal Divecha/	Date Considered	10/05/2010

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.D./

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 7 | of | 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

Change(s) applied to document, /P.A.P./ 3/25/2015

/A.P./		6799221	09-28-2004	Kenner et al.	
		6801576	10-05-2004	Haldeman et al.	
		6834306	12-21-2004	Tsimelzon	
		6842604	01-11-2005	Cook et al.	
		6870851	03-22-2005	Leinwand et al.	
		6874032	03-29-2005	Gersht et al.	
		6901604	May 31, 2005 ~~06-19-2001~~	Kiraly	
		6915329	07-05-2005	Kriegsman	
		6928442	08-09-2005	Farber et al.	
		6934255	08-23-2005	Toporek et al.	
		6950623	09-27-2005	Brown et al.	
		6963980	11-08-2005	Mattsson	
		6963981	11-08-2005	Bailey et al.	
		6965890	11-15-2005	Dey et al.	
		6970432	11-29-2005	Hankins et al.	
		6973485	12-06-2005	Ebata et al.	
		6973490	12-06-2005	Robertson et al.	
		6981050	12-27-2005	Tobias et al.	
		6981180	12-27-2005	Bailey et al.	
		6996616	02-07-2006	Leighton et al.	
		7003572	02-21-2006	Lownsbrough et al.	
		7007089	02-28-2006	Freedman	
		7010578	03-07-2006	Lewin et al.	
		7012900	03-14-2006	Riddle	
		7039633	05-02-2006	Dey et al.	
		7047300	05-16-2006	Oehrke et al.	
		7054935	05-30-2006	Farber et al.	
		7058706	06-06-2006	Iyer et al.	
		7069177	06-27-2006	Carley	
		7096266	08-22-2006	Lewin et al.	
		7103645	09-05-2006	Leighton et al.	
		7103647	09-05-2006	Aziz	
		7181523	02-20-2007	Sim	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/A.P./		CA 2202572	10-14-1998	Northern Telecom Ltd.		
		EP 0800143 A	10-08-1997	Sun Microsystems		
		EP 0801487 A2	10-15-1997	AT&T Corp.		
		EP 0817444 A2	01-07-1998	Sun Microsystems		
		EP 0824236 A2	02-18-1998	IBM Corporation		
		EP 0865180 A2	09-16-1998	Lucent Technologies		
		GB 2281793	03-15-1995	IBM Corporation		
		JP 10-027148	01-27-1998	Hitachi Ltd.		
		JP 10-093552	04-10-1998	NT&T		
		JP 10-126445	05-15-1998	Sun Microsystems		
		JP 10-171727	06-26-1998	NT&T		
		JP 07-066829	03-10-1995	Kawasaki Steel Corp.		
		JP 2001-053793	02-23-2001	NT&T		
		WO 96 42041	12-27-1996	Open Market, Inc.		

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.P./

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 5 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unasigned
Attorney Docket Number	519-023-DV1

/A.P./		6115752	09-05-2000	Chauhan	
		6119143	09-12-2000	Dias et al.	
		6125388	09-26-2000	Reisman	
		6128601	10-03-2000	Van Horne et al.	
		6128660	10-03-2000	Grimm et al.	
		6130890	10-10-2000	Leinwand et al.	
		6134583	10-17-2000	Herriot	
		6144375	11-07-2000	Jain et al.	
		6144702	11-07-2000	Yurt et al.	
		6144996	11-07-2000	Starnes et al.	
		6151624	11-21-2000	Teare et al.	
		6154738	11-28-2000	Call	
		6154744	11-28-2000	Kenner et al.	
		6154753	11-28-2000	McFarland	
		6154777	11-28-2000	Ebrahim	
		6163779	12-19-2000	Mantha et al.	
		6167427	12-26-2000	Rabinovich et al.	
		6167438	12-26-2000	Yates et al.	
		6173311	01-09-2001	Hassett et al.	
		6173322	01-09-2001	Hu	
		6175869	01-16-2001	Ahuja et al.	
		6178160	01-23-2001	Bolton et al.	
		6181867	01-30-2001	Kenner et al.	
		6185598	02-06-2001	Farber et al.	
		6185619	02-06-2001	Joffe et al.	
		6189030	02-13-2001	Kirsch et al.	
		6189039	02-13-2001	Harvey et al.	
		6195680	02-27-2001	Goldszmidt et al.	
		6205120	03-20-2001	Packer et al.	
		6226642	05-01-2001	Beranek et al.	
		6230196	05-08-2001	Guenthner et al.	
		6243760	06-05-2001	Armbruster et al.	
		6249810	06-19-2001	~~Toporek et al.~~ Kiraly	
		6256675	07-03-2001	Rabinovich	
		6266699	07-24-2001	Sevcik	
		6269394	July 31, 2001 ~~04-22-2003~~	Kenner et al.	
		6275470	08-14-2001	Ricciulli	
		6282569	08-28-2001	Wallis et al.	
		6282574	08-28-2001	Voit	
		6286045	09-04-2001	Griffiths et al.	
		6298041	10-02-2001	Packer	
		6311214	10-30-2001	Rhoads	
		6314465	11-06-2001	Paul et al.	
		6314565	11-06-2001	Kenner et al.	
		6330605	12-11-2001	Christensen et al.	
		6332195	12-18-2001	Green et al.	
		6338044	01-08-2002	Cook et al.	
		6347085	02-12-2002	Kelly	
		6360256	03-19-2002	Lim	
		6370571	04-09-2002	Medin, Jr.	
		6370580	04-09-2002	Kriegsman	
		6374299	04-16-2002	Ford et al.	
		6405252	06-11-2002	Gupta et al.	
		6405267	06-11-2002	Gersht et al.	

Change(s) applied to document, /P.A.P./ 3/25/2015

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.P./

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

83579 7590 03/19/2015
LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
TIV, BACKHEAN	
ART UNIT	PAPER NUMBER
2451	

DATE MAILED: 03/19/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

TITLE OF INVENTION: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	06/19/2015

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

83579 7590 03/19/2015
LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

TITLE OF INVENTION: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	06/19/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
TIV, BACKHEAN	2451	709-229000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27
  NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status.
  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

83579 7590 03/19/2015

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
TIV, BACKHEAN	
ART UNIT	PAPER NUMBER
2451	

DATE MAILED: 03/19/2015

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 12/050,648	Applicant(s) SLOCOMBE ET AL.	
	Examiner BACKHEAN TIV	Art Unit 2451	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/23/15*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-23*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/BACKHEAN TIV/
Primary Examiner, Art Unit 2451

Notice of References Cited	Application/Control No. 12/050,648	Applicant(s)/Patent Under Reexamination SLOCOMBE ET AL.	
	Examiner BACKHEAN TIV	Art Unit 2451	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,266,339 B1	07-2001	Donahue et al.	370/432
*	B	US-2001/0052016 A1	12-2001	Skene et al.	709/226
*	C	US-2002/0116481 A1	08-2002	Lee, Raymond Wei Man	709/220
*	D	US-2003/0079027 A1	04-2003	Slocombe et al.	709/229
*	E	US-6,785,704 B1	08-2004	McCanne, Steve	718/105
*	F	US-2005/0010653 A1	01-2005	McCanne, Steve	709/219
*	G	US-7,209,959 B1	04-2007	Campbell et al.	709/219
*	H	US-2008/0235400 A1	09-2008	Slocombe et al.	709/245
*	I	US-7,653,700 B1	01-2010	Bahl et al.	709/217
*	J	US-7,693,959 B2	04-2010	Leighton et al.	709/217
*	K	US-7,734,730 B2	06-2010	McCanne, Steve	709/219
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	(ISP or "Internet service Provider") near4 DNS same CDN near4 DNS and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 07:50
L2	1	(ISP or "Internet service Provider") near4 DNS and CDN near4 DNS with resolv$4 and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 07:51
L3	4	(ISP or "Internet service Provider") near4 DNS and CDN near4 DNS same anycast and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 07:51
L4	3	(ISP or "Internet service Provider") near4 DNS same anycast and CDN near4 DNS and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2015/03/10 07:52
S1	291	(ISP or "Internet service Provider") near4 DNS and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2013/08/27 08:43
S2	22	(ISP or "Internet service Provider") near4 DNS same (resolv$4) near3 address and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2013/08/27 08:43
S3	22	("20020075836" | "20030079027" | "20040249960" | "20080235400" | "6148410" | "6266339" | "6711152" | "7075897" | "7808968").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2013/08/27 08:47

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	11230	((H04L67/288 OR H04L29/12009 OR H04L29/12047 OR H04L61/15 OR H04L67/2814 OR H04L29/12066 OR H04L61/1511).CPC.)	US-PGPUB; USPAT; UPAD	OR	ON	2015/03/10 07:56
L6	11	(ISP or "Internet service Provider") near4 DNS and CDN near4 DNS and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; UPAD	OR	ON	2015/03/10 07:56
L7	16	(ISP or "Internet service Provider") near4	US-	OR	ON	2015/03/10

		DNS and CDN and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	PGPUB; USPAT; UPAD			07:56
L8	5	DNS near4 resolv$4 near4 anycast and l5 and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; UPAD	OR	ON	2015/03/10 07:57

3/ 10/ 2015 7:59:06 AM
C:\ Users\ btiv\ Documents\ EAST\ Workspaces\ 12050648_DNS_resolving.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	BACKHEAN TIV	2451

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009	03/11/2010	10/04/2010	11/03/2011	08/27/2013	12/16/2013	03/10/2015		
1	1	✓	✓	✓	✓	✓	✓	=		
2	2	✓	✓	✓	✓	✓	✓	=		
3	3	✓	✓	✓	✓	✓	✓	=		
5	4	✓	✓	✓	✓	✓	✓	=		
4	5	✓	✓	✓	✓	✓	✓	=		
6	6	✓	✓	✓	✓	✓	✓	=		
7	7	✓	✓	✓	✓	✓	✓	=		
8	8	✓	✓	✓	✓	✓	✓	=		
9	9	✓	✓	✓	✓	✓	✓	=		
13	10	✓	✓	✓	✓	✓	✓	=		
18	11	✓	✓	✓	✓	✓	✓	=		
19	12	✓	✓	✓	✓	✓	✓	=		
10	13		✓	✓	✓	✓	✓	=		
14	14		✓	✓	✓	✓	✓	=		
20	15		✓	✓	✓	✓	✓	=		
21	16			✓	✓	✓	✓	=		
22	17			✓	✓	✓	✓	=		
12	18			✓	✓	✓	✓	=		
15	19			✓	✓	✓	✓	=		
16	20			✓	✓	✓	✓	=		
17	21			✓	✓	✓	✓	=		
11	22				✓	✓	✓	=		
23	23				✓	✓	✓	=		

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	**Art Unit**
	BACKHEAN TIV	2451

CPC						
Symbol					**Type**	**Version**
H04L		29	/	12066	F	2013-01-01
H04L		29	/	06	I	2013-01-01
H04L		29	/	12207	A	2013-01-01
H04L		61	/	1511	I	2013-01-01
H04L		61	/	20	A	2013-01-01
H04L		67	/	2895	I	2013-01-01
H04L		67	/	2842	I	2013-01-01
H04L		67	/	288	I	2013-01-01
			/			
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			/			
			/			
			/			

CPC Combination Sets							
Symbol				**Type**	**Set**	**Ranking**	**Version**
			/				
			/				

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	23	
/BACKHEAN TIV/ Primary Examiner.Art Unit 2451	03/10/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	3

U.S. Patent and Trademark Office — Part of Paper No. 20150310

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	BACKHEAN TIV	2451

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS					CLAIMED						NON-CLAIMED				
						H	0	4	L	29 / 08 (2006.01.01)						
CROSS REFERENCE(S)																
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)															

NONE (Assistant Examiner)	(Date)	Total Claims Allowed: 23	
/BACKHEAN TIV/ Primary Examiner.Art Unit 2451 (Primary Examiner)	03/10/2015 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 3

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	**Art Unit**
	BACKHEAN TIV	2451

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	22	17												
2	2	12	18												
3	3	15	19												
5	4	16	20												
4	5	17	21												
6	6	11	22												
7	7	23	23												
8	8														
9	9														
13	10														
18	11														
19	12														
10	13														
14	14														
20	15														
21	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 23	
/BACKHEAN TIV/ Primary Examiner.Art Unit 2451 (Primary Examiner)	03/10/2015 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 3

U.S. Patent and Trademark Office Part of Paper No. 20150310

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	BACKHEAN TIV	2451

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	all	8/9/2006	AP

SEARCH NOTES		
Search Notes	Date	Examiner
Name search and Continuity search	6/1/09	AP
EAST search (also considered the search of 09/982721)	6/1/09	AP
Updated EAST search	3/1/10	AP
Searched IEEE	3/2/10	AP
EAST TEXT SEARCH UPDATED (please see the attached search report).	9/16/2010	KD
UPDATE SEARCH	8/27/2013	BT
UPDATE SEARCH	3/10/2015	BT

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
H04L	67/288,29/12009,29/12047,61/15,67/2814,29/12066,61/1511	3/10/2015	BT

	/BACKHEAN TIV/ Primary Examiner.Art Unit 2451

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 9055

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/050,648	03/18/2008 RULE	709	2451	0023-US-D1

APPLICANTS

INVENTORS

Michael Slocombe, Acton, MA;
Matthew Miller, Plainville, MA;
Casey Ajalat, North Billerica, MA;
Vincent A. Fuller III, Palo Alto, CA;

**** CONTINUING DATA ***************************

This application is a DIV of 09/982,721 10/18/2001

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

03/25/2008

Foreign Priority claimed	❑ Yes ☑ No		STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
35 USC 119(a-d) conditions met	❑ Yes ❑ No	❑ Met after Allowance				
Verified and Acknowledged	/BACKHEAN TIV/ Examiner's Signature	Initials	MA	5	12	4

ADDRESS

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021
UNITED STATES

TITLE

CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

FILING FEE RECEIVED		
2102	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	❑ All Fees ❑ 1.16 Fees (Filing) ❑ 1.17 Fees (Processing Ext. of time) ❑ 1.18 Fees (Issue) ❑ Other _____ ❑ Credit

BIB (Rev. 05/07).

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

83579 7590 03/19/2015
LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

TITLE OF INVENTION: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	06/19/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
TIV, BACKHEAN	2451	709-229000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: LEVEL 3 COMMUNICATIONS, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): 1025 Eldorado Blvd. Broomfield, CO 80021

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ☒ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ☒ Payment by credit card. XXXXXXXXXXXXXXXX via EFS-Web
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /JCS/ Date March 19, 2015

Typed or printed name Jonathan C. Siekmann Registration No. 58,259

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Electronic Patent Application Fee Transmittal

Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	0023-US-D1

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
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Petition:				
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Utility Appl Issue Fee	1501	1	960	960

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First Named Inventor/Applicant Name:	Michael Slocombe
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	0023_US_D1_IssueFeeTransmittal.pdf	102308 01a024027af8e1a934e8eaab92e087190df75604	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31133 fb2ec2e725d70692fdc15e4abd5476d9928c5be0	no	2
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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant:	Michael Slocombe, et al.	Confirmation No:	9055
Serial No.:	12/050,648	Group Art Unit:	2449
Filed:	March 18, 2008	Examiner:	TIV, Backhean
Title:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	Docket No.	0023-US-D1

APPELLANT'S APPEAL BRIEF UNDER 37 C.F.R. §41.37

Via EFS-Web
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Pursuant to 37 C.F.R. § 41.37(a), this brief is filed within seven months of the Notice of Appeal filed in this case on 23 June 2014.

This brief contains items under the following headings and is in compliance with 37 C.F.R. § 41.37 and M.P.E.P. § 1205.

I. Real Party In Interest.....page 2
II. Related Appeals, Interferences, and Judicial Proceedings.....page 2
III. Status of Claims.....page 2
IV. Status of Amendments.....page 2
V. Summary of Claimed Subject Matter.....page 2
VI. Grounds of Rejection to be Reviewed on Appeal.....page 8
VII. Argument.....page 9
VIII. Claims Appendix.....page 17
IX. Evidence Appendix.....page 24
X. Related Proceedings Appendix.....page 25

I. REAL PARTY IN INTEREST (37 C.F.R. § 41.37(c)(1)(i))

The real party in interest in this Appeal is:

Level 3 Communications, LLC.

II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 41.37(c)(1)(ii))

An appeal was previously filed in U.S. application no. 09/982,721, attorney docket no. 0023-US-01.

III. STATUS OF CLAIMS

In view of the Final Office Action issued 24 December 2013, claims 1-23 are pending in the application. Claims 1-23 stand rejected and are the subject of this appeal. Claims 1, 10, 11, 12, 16, 17, and 23 are independent claims.

IV. STATUS OF AMENDMENTS

Appellants did not file an Amendment After Final Rejection. No amendments have been filed since the Amendment filed 06 December 2013. All amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER (37 C.F.R. § 41.37(c)(1)(iii))

The following provides a concise explanation of the subject matter defined in each of the separately argued independent claims involved in the Appeal, referring to the specification by paragraph number and to the drawings by reference characters, as noted by 37 C.F.R. § 41.37(c)(1)(v).

Each element of the independent claims is identified by a corresponding reference to the specification and drawings where applicable. It should be noted that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element. Examples

in the specification are not intended to limit the scope of the claims in any way. Moreover, the claims do not stand or fall together.

Claim 1:

Claim 1 relates to a method of content delivery in a network. The method comprises:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(C) responsive to a request for content associated with the content provider and issued by a client, said request including at least said hostname, (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(c1) causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server; (see, e.g., FIG. 5, Specification¶[0037]; [0039]) and then

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server. (see, e.g., FIG. 5, Specification¶[0037]; [0039])

Claim 10:

Claim 10 relates to a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider, (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(c11) by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server of said content servers associated with said first DNS server; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11); and (see, e.g., Specification¶[0045])

(c13) attempting to serve said first content from the first content server; and

(C2) responsive to a second request for said first content associated with said first content provider of said plurality of content providers, said second request including at least the first hostname associated with the first content provider,

(c21) by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address for retrieval of the first content from a content server associated with the second DNS server;

(c22) by a switch associated with said resolving DNS server of step (c21), selecting the second content server from said respective plurality of content servers associated with the DNS server of step (c21); and

(c23) attempting to serve said second content from the second content server. (see, e.g., FIG. 5, Specification¶[0037]; [0039])

Claim 11:

Claim 11 relates to a content delivery system for delivering content on behalf of a plurality of content providers, each of said plurality of content providers having a hostname associated therewith, the system comprising:

(A) a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, said plurality of DNS servers being authoritative for said hostnames associated with said plurality of content providers; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(B) a set of content servers associated with each DNS server, each set comprising at least a plurality of content servers; (see, e.g., FIG. 5, Specification¶[0037]; [0039]) and

(C) at least one switch associated with each set of content servers, (see, e.g., Specification¶[0045]) wherein

(D) responsive to a request to resolve a hostname associated with a particular content provider of said plurality of content providers, said request being associated with an end-user request for content of said particular content provider, one of said plurality of DNS servers is operable to resolve said hostname to identify an IP address for use by the end-user to retrieve the content from a content server, (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(E) the at least one switch associated with the set of content servers of the resolving DNS server is operable to perform load balancing to select the content server from the set of content servers associated with the resolving DNS server, (see, e.g., Specification¶[0041] -- [0045) and

(F) the content server is operable to serve the content to the end-user. (see, e.g., FIG. 5, Specification¶[0037]; [0039])

Claim 12:

Claim 12 relates to a method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, each DNS server being

associated with a respective plurality of content servers, wherein at least some of said plurality of content servers are located at network Points of Presence (POPs); (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(B) causing said plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(C) responsive to a request for content associated with the content provider by a client, said request including at least said,

(c1) by one of said plurality of DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; (see, e.g., FIG. 5, Specification¶[0037]; [0039]) and

(c2) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving DNS server (see, e.g., Specification¶ [0045])

(D) by the content server,

(d1) attempting to serve the content by:

(d11) if a valid version of the content is available on the content server, serving the content; otherwise

(d12) obtaining the content from a content source and then serving the content. (see, e.g., FIG. 5, Specification¶[0037]; [0039])

Claim 16:

Claim 16 relates to a method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), the plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a set of content servers, each set comprising at least a plurality of content servers; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(B) causing the plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(C) responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname,

(c1) by one of the plurality of DNS servers, resolving the hostname to identify an IP address for use by the client to retrieve the content from a content server; and (see, e.g., FIG. 5, Specification¶[0037]; [0039])

(c2) by at least one switch associated with the set of content servers of the resolving DNS server, selecting the content server from the set of content servers associated with the resolving DNS server. (see, e.g., FIG. 5, Specification¶[0037]; [0039])

Claim 17:

Claim 17 relates to a content delivery system comprising a plurality of nodes, wherein each node comprises:

a Domain Name System (DNS) server sharing an anycast address with DNS servers in other nodes of the content delivery system, wherein the DNS server is authoritative for hostnames associated with a plurality of content providers; (see, e.g., FIG. 5, Specification¶[0037]; [0039])

a plurality of content servers; and (see, e.g., FIG. 5, Specification¶[0037]; [0039])

at least one switch, (see, e.g.,Specification¶ [0045]) wherein

responsive to a request by a client for content associated with a particular content provider of the plurality of content providers, the request including at least a hostname associated with the particular content provider, the DNS server is operable to resolve the hostname to identify an IP address for use by the client to retrieve the content from a content server, (see, e.g., FIG. 5, Specification¶[0037]; [0039])

the at least one switch is operable to select the content server from the plurality of content servers, and , (see, e.g.,Specification¶ [0045])

the content server is operable to serve the content to the client. (see, e.g., FIG. 5, Specification¶[0037]; [0039])

Claim 23:

Claim 23 relates to a method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers, wherein each DNS server and respective plurality of content servers is configured to support content delivery for a plurality of content providers; (see, e.g.,Specification¶ [0045])

(B) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider, by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address of a content server of the plurality of content servers associated with said first DNS server; and (see, e.g.,Specification¶ [0045])

(C) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least said first hostname associated with the first content provider, by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address associated with a content server of the plurality of content servers associated with the second DNS server. (see, e.g.,Specification¶ [0045])

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(1) Whether the Office erred in rejecting independent claims 11, 12, 16, 17, and 23 and their associated dependent claims by failing to provide an element-by-element analysis.

(2) Whether the Office erred in rejecting independent claim 1 in view of the combination of McCanne (2005/0010653A1) and Bahl (7,763,700).

(3) Whether the Office erred in rejecting independent claim 10 in view of the combination of McCanne (2005/0010653A1) and Bahl (7,763,700).

VII. ARGUMENT (37 C.F.R. § 41.37(c)(1)(iv))

(1) Whether the Office erred in rejecting independent claims 11, 12, 16, 17, and 23 and their associated dependent claims by failing to provide an element-by-element analysis.

The Office erred in rejecting independent claims 11, 12, 16, 17, and 23 and their associated dependent claims by not providing an element-by-element analysis of the claim language in each claim and by not noting where each element is purportedly taught by the cited references. The Office has essentially left it to the Appellant to try to guess what the Examiner is thinking with respect to the claim elements and the cited art.

The test for non-obvious subject matter is whether the differences between the subject matter and the prior art are such that the claimed subject matter as a whole would have been obvious to a person having ordinary skill in the art to which the subject matter pertains. The United States Supreme Court in *Graham v. John Deere and Co.*, 383 U.S. 1 (1966) set forth the factual inquiries which must be considered in applying the statutory test: (1) determining of the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the pertinent art, and (4) evaluate evidence of secondary considerations. See M.P.E.P. §2141.

The M.P.E.P. § 706.02(j), incorporates the mandate of *Graham v. John Deere* and directs the Examiner to set forth in the Office action: (1) the relevant teachings of the prior art relied upon; (2) the difference or differences in the claim over the applied references; (3) the proposed modification of the applied references necessary to arrive at the claimed subject matter; and (4) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification.

In the current Office Action, the cited rejection does not provide any of items (1), (2), (3) or (4) for independent claims 11, 12, 16, 17, and 23. With regards to item (1), the elements of independent claims 11, 12, 16, 17, and 23 are different from the elements of independent claims

1 and 10, which are provided an element-by-element analysis. Appellant does not know which portions of McCanne are relevant to the various elements of claims 11, 12, 16, 17, and 23. With regard to item (2), the Appellant does not know which of McCanne and Bahl are being relied upon for the various elements of claims 11, 12, 16, 17, and 23. With regards to item (3) , Appellant does not know what aspects of McCanne or Bahl are being modified to become relevant to claims 11, 12, 16, 17, and 23, because the elements of claims 11, 12, 16, 17, and 23 are different from the elements of independent claims 1 and 10. With regards to item (4), the rationale cited with respect to claims 1 and 10 may not necessarily apply to claims 11, 12, 16, 17, and 23 because the modifications for item (3) may be different.

Thus, the Office Action does not comply with the mandates of *Graham v. John Deere* with respect to independent claims 11, 12, 16, 17, and 23.

Moreover, the Federal Circuit has noted that incomplete rejections by the Office are inappropriate and are reversible error. In the case of In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443, 1447 (Fed. Cir. 1992) (Plager, J., concurring), Judge Plager of the Federal Circuit noted:

> The examiner cannot sit mum, leaving the applicant to shoot arrows in the dark hoping to somehow hit a secret objection harbored by the examiner. The "prima facie" case notion, the exact origin of which appears obscure . . ., seemingly was intended to leave no doubt among examiners that they must state clearly and specifically any objections (the prima facie case) to patentability, and give the applicant fair opportunity to meet those objections with evidence and argument. To that extent the concept serves to level the playing field and reduces the likelihood of administrative arbitrariness.
> In re Oetiker, 977 F.2d 1443 (Fed. Cir. 1992) (Plager, J., concurring).

As another example, the Board of Patent Appeals and Interferences stated in Ex parte Schricker, 56 USPQ2d 1723, 1725 (B.P.A.I. 2000) (unpublished):

> Thus, the rationale in the examiner's answer seems to assume a difference between the claims and the prior art and purports to justify why the claimed subject matter, as a whole, would have been obvious notwithstanding the difference. The examiner's shifting rationale in support of his rejections gives us pause as to the precise basis upon which the examiner has bottomed the rejections. Moreover, the examiner's actions have made it difficult

> for us to decide what issues are on appeal and how those issues might be resolved on the merits.
> . . .
> **The examiner has left applicant and the board to guess as to the basis of the rejection and after having us guess would have us figure out (i.e., further guess) what part of which Komourdjian document supports the rejection.** We are not good at guessing; hence, we decline to guess.
> Ex parte Schricker, 56 USPQ2d 1723, 1725 (B.P.A.I. 2000) (unpublished)(emphasis added).

With respect to the obviousness rejections of claims 11, 12, 16, 17, and 23, and their dependent claims, the Office has left it to the Appellant to guess which particular portions of the cited art are being applied to the various elements of the claims and what the motivation is to combine the different references. Consequently, the Office has failed to establish a prima facie case of obviousness with respect to these claims. Therefore, the Appellant respectfully asserts that for the above reasons claims 11, 12, 16, 17, and 23, as well as their associated dependent claims, are patentable over the 35 U.S.C. § 103(a) rejection of record.

(2) Whether the Office erred in rejecting independent claim 1 in view of the combination of McCanne (2005/0010653A1) and Bahl (7,763,700).

A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. See In re Rijckaert, 9 F.3d 1531 (Fed. Cir. 1993). The Office bears the initial burden of presenting a prima facie case of obviousness – only shifting to the Appellant if the burden is met. Moreover, any core factual findings cannot be based on conclusory statements or an examiner's personal experiences -- the Office must point to concrete evidence in the record in support of any factual findings. See K/S HIMPPv. Hear-Wear Technologies, LLC, __ F.3d__ (Fed. Cir. 2014) (quoting In re Zurko, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

Two basic criteria must be met in order to establish a prima facie case of obviousness of a claimed invention. First, all the claim elements must be shown by the prior art. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Second, there must be some rationale or motivation, either in the references themselves or in the knowledge generally available to one of

ordinary skill in the art to modify the reference or to combine reference teachings. In other words, there should be an explicit analysis regarding whether there was an apparent reason to combine the known elements in the fashion claimed in the application at issue. KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). Appellant respectfully asserts that the rejection does not satisfy these requirements.

The Office Action cites McCanne for teaching various elements of claim 1, and states that McCanne does not teach having an ISP DNS server for address resolution and relies upon Bahl for such teachings. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 1 defines a method of content delivery in a network, the method comprises

"(c1) causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server; and then

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server."

The combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

Neither McCanne nor Bahl teaches two DNS servers performing two resolves. The McCanne and Bahl references each teach one act of resolving — neither teaches performing two resolves. The various paragraphs cited by the Office Action discuss only one resolve. Thus, the combination of McCanne and Bahl does not teach performing two resolves. Therefore, the combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

In the Final Office Action, the Office attempts to counter this argument by citing to McCanne's paragraphs 132-136 and 148-152. See Final Office Action at page 7-8. But, these portions of McCanne do not teach a two-step process. Indeed, the Office attempts to characterize the teaching of McCanne on pages 7-8 of the Final Office action by stating that "When the request is received, the DNS query mechanism learns that the hostname is handled by an authoritative name server with some APAR anycast address N*, and the client's request is then sent to N*." This is incorrect. What McCanne teaches is that a single step resolve of the

desired address is performed. McCanne teaches that the request is sent directly to N* without first going to an internet service provider DNS server. McCanne's system does not require the internet service provider DNS server. Therefore, the Office is mistaken in its assertion at the bottom of page 7 and top of page 8, when the Office asserts that "the DNS query mechanism learns that the hostname is handled by an authoritative name server with some APAR anycast address N*.

Moreover, there is no reason to insert an internet service provider DNS server into the system of McCanne. McCanne's system is able to direct a request directly to N* without the need of the ISP DNS server. The addition of Bahl's ISP DNS server would be a superfluous feature, if added to McCanne. In the case of In re NTP, 654 F.3d 1279 (Fed. Cir. 2011), the Federal Circuit reversed an obviousness finding by the Board of Patent Appeals and Interferences ("Board"). The Federal Circuit held that the Board engaged in a hindsight analysis. In the In re NTP case, the Board had found that Reference #1 contained all but one element of a claim. The missing claim element in Reference #1 was an interface coupled with a RF transmission network. The Board then carved out from Reference #2 an interface coupled with an RF transmission network. The Board then took that interface/RF transmission network from Reference #2 and combined it with Reference #1. The Federal Circuit held that such a combination was improper and illustrated that the Board had engaged in a hindsight analysis.

The Federal Circuit stated the following in In re NTP:

> "However, we hold that, as a matter of law, the claims would not have been obvious to one of ordinary skill in the art based on the combination of the AAPA and Harrison. The Board improperly relied on hindsight reasoning to piece together elements to arrive at the claimed invention. "Care must be taken to avoid hindsight reconstruction by using `the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.'" *Grain Processing Corp. v. American-Maize Prods. Co.*, 840 F.2d 902, 907 (Fed.Cir.1988) (quoting *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012 (Fed.Cir.1983)). **Given any network, we could likely carve out a possible "interface" and combine it with Harrison** to hold that the addition of a RF information transmission network would have been obvious. This type of piecemeal analysis is precisely the kind of hindsight that the Board must not engage in. The Board's position is further weakened by the fact that the AAPA already

> discloses an RF network that connects portable computers to the system. '960 patent col.2 ll.1-4. Thus, adding an RF network to element # 2 in the figure would render the RF network connecting the portable PCs in figure 1 superfluous. Because it is based on improper hindsight reasoning, we reverse the Board's rejections based on the AAPA in view of Harrison."

In re NTP, 654 F.3d 1279, 1298-99 (Fed. Cir. 2011) (emphasis added).

As the bolded text above notes, using an improper hindsight analysis one can always carve out an interface from a second reference and combine it with a first reference. Moreover, in the above quotation, the Federal Circuit also noted that further evidence of an improper combination is when the combination produces superfluous elements (e.g., superfluous RF networks). The present rejection is similar – the Office has used hindsight to supply the ISP DNS server in order to reject the claim. But, the ISP DNS server is totally unnecessary for McCanne's system. McCanne is able to retrieve its desired object without the need of the ISP DNS server of Bahl. Therefore, the addition of a further DNS server would clearly be superfluous. For at least this reason, as well, the Office is in error.

Furthermore, neither McCanne nor Bahl teach performing the two resolves in the order as claimed. In element (c1), the hostname is resolved to the common anycast address by the ISP DNS server, then element (c2) is operative. In element (c2), the hostname is resolved to identify an IP address by one of the CDN DNS servers. Neither McCanne nor Bahl teaches performing two resolves in the order as claimed. Therefore, the combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

For at least these reasons, the Office has failed to establish a prima facie case of obviousness under 35 U.S.C. §103. Therefore, the Appellant respectfully asserts that for the above reasons claim 1 and its dependent claims are patentable over the 35 U.S.C. § 103(a) rejection of record.

(3) Whether the Office erred in rejecting independent claim 10 in view of the combination of McCanne (2005/0010653A1) and Bahl (7,763,700).

A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. See In re Rijckaert, 9 F.3d 1531 (Fed. Cir. 1993). The Office bears the initial burden of presenting a prima facie case of obviousness – only shifting to the Appellant if the burden is met. Moreover, any core factual findings cannot be based on conclusory statements or an examiner's personal experiences -- the Office must point to concrete evidence in the record in support of any factual findings. See K/S HIMPPv. Hear-Wear Technologies, LLC, __ F.3d__ (Fed. Cir. 2014) (quoting In re Zurko, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

Two basic criteria must be met in order to establish a prima facie case of obviousness of a claimed invention. First, all the claim elements must be shown by the prior art. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Second, there must be some rationale or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. In other words, there should be an explicit analysis regarding whether there was an apparent reason to combine the known elements in the fashion claimed in the application at issue. KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). Appellant respectfully asserts that the rejection does not satisfy at least one of these requirements.

Claim 10 defines a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising **"(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11)."** The combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

The Office Action acknowledges that McCanne does not teach such elements and relies upon Bahl. More specifically, the Office Action states that the text at column 3, line 60 to column 4, line 25; and column 10, lines 60-67 teach these elements. However, the cited text beginning at column 3 discusses having the DNS-LBs maintain current knowledge of the ISP's DNS address and notify the DNS-B machines of the addresses. Also, the DNS-LB performs the function of a caching engine. The cited text at column 10 discusses having the lowest network latency. None of this teaches having a switch associated with the resolving DNS server of step (c11), and selecting the first content server from said respective plurality of content servers

associated with the DNS server of step (c11). Therefore, the combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

Thus, the combination of McCanne and Bahl does not teach all of the claimed elements. Therefore, the Appellant respectfully asserts that for the above reasons claim 10 and its associated dependent claims are patentable over the 35 U.S.C. § 103(a) rejection of record.

CONCLUSION

In view of the law and facts stated herein, Appellant respectfully submits that the reasoning and the references cited by the Office are insufficient to maintain rejection of the claims. The Appellant respectfully urges that the rejections of Claims 1-23 be withdrawn. Reversal of the rejections and allowance of the claims in this application is respectfully requested.

This Appeal Brief is filed with a request for a five-month extension of time and requisite fee thereof. Appellant believes no other fees or petitions are due with this filing. However, should any such fees or petitions be required, please consider this a request therefor and authorization to charge Deposit Account No. 50563 as necessary.

A representative from the U.S. Patent and Trademark Office is invited to contact the undersigned at the below-listed telephone number regarding any matters relating to the present application.

Respectfully submitted,

Date: January 23, 2015

/JCS/

Jonathan C. Siekmann, Reg. No. 58,259
Level 3 Communications, LLC
1025 Eldorado Blvd.
Broomfield, Colorado 80021
Tel:720-888-2140

VIII. CLAIMS APPENDIX (37 C.F.R. §41.37(c)(2)

Listing of Claims:

1. (Previously Presented) method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers;

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, said request including at least said hostname,

(c1) causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server; and then

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server.

2. (Previously Presented) The method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs).

3. (Previously Presented) The method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP.

4. (Original) The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. (Previously Presented) The method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster.

6. (Previously Presented) The method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content.

7. (Previously Presented) The method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of the content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content.

8. (Original) The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. (Previously Presented) The method as recited in claim 7 wherein, if a valid version of the content is not available on the content server, the content server uses a table to ascertain where to obtain the content.

10. (Previously Presented) A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers;

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith;

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider,

(c11) by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server of said content servers associated with said first DNS server;

(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11); and

(c13) attempting to serve said first content from the first content server; and

(C2) responsive to a second request for said first content associated with said first content provider of said plurality of content providers, said second request including at least the first hostname associated with the first content provider,

(c21) by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address for retrieval of the first content from a content server associated with the second DNS server;

(c22) by a switch associated with said resolving DNS server of step (c21), selecting the second content server from said respective plurality of content servers associated with the DNS server of step (c21); and

(c23) attempting to serve said second content from the second content server.

11. (Previously Presented) A content delivery system for delivering content on behalf of a plurality of content providers, each of said plurality of content providers having a hostname associated therewith, the system comprising:

(A) a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, said plurality of DNS servers being authoritative for said hostnames associated with said plurality of content providers;

(B) a set of content servers associated with each DNS server, each set comprising at least a plurality of content servers; and

(C) at least one switch associated with each set of content servers, wherein

(D) responsive to a request to resolve a hostname associated with a particular content provider of said plurality of content providers, said request being associated with an end-user request for content of said particular content provider, one of said plurality of DNS servers is operable to resolve said hostname to identify an IP address for use by the end-user to retrieve the content from a content server,

(E) the at least one switch associated with the set of content servers of the resolving DNS server is operable to perform load balancing to select the content server from the set of content servers associated with the resolving DNS server, and

(F) the content server is operable to serve the content to the end-user.

12. (Previously Presented) A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, each DNS server being associated with a respective plurality of content servers, wherein at least some of said plurality of content servers are located at network Points of Presence (POPs);

(B) causing said plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider by a client, said request including at least said,

(c1) by one of said plurality of DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving DNS server.

(D) by the content server,

(d1) attempting to serve the content by:

(d11) if a valid version of the content is available on the content server, serving the content; otherwise

(d12) obtaining the content from a content source and then serving the content.

13. (Previously Presented) The method as recited in claim 1, wherein selection of the content server is based on a load balancing policy.

14. (Previously Presented) The method as recited in claim 10, wherein selection of at least one of the first content server and the second content server is based on a load balancing policy.

15. (Previously Presented) The method as recited in claim 12, wherein selection of the content server is based on a load balancing policy.

16. (Previously Presented) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), the plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a set of content servers, each set comprising at least a plurality of content servers;

(B) causing the plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname,

(c1) by one of the plurality of DNS servers, resolving the hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch associated with the set of content servers of the resolving DNS server, selecting the content server from the set of content servers associated with the resolving DNS server.

17. (Previously Presented) A content delivery system comprising a plurality of nodes, wherein each node comprises:

a Domain Name System (DNS) server sharing an anycast address with DNS servers in other nodes of the content delivery system, wherein the DNS server is authoritative for hostnames associated with a plurality of content providers;

a plurality of content servers; and

at least one switch, wherein

responsive to a request by a client for content associated with a particular content provider of the plurality of content providers, the request including at least a hostname associated with the particular content provider, the DNS server is operable to resolve the hostname to identify an IP address for use by the client to retrieve the content from a content server,

the at least one switch is operable to select the content server from the plurality of content servers, and

the content server is operable to serve the content to the client.

18. (Previously Presented) The method of claim 22, wherein the step of (c3) is performed in accordance with a predetermined selection policy.

19. (Previously Presented) The method as recited in claim 10, wherein the resolving DNS server of step (c11) is the same as the resolving DNS server performing of step (c21).

20. (Previously Presented) The method as recited in claim 19, wherein the switch of step (c12) is the same as the switch of step (c22).

21. (Previously Presented) The method as recited in claim 19, wherein the first content server is the same as the second content server.

22. (Previously Presented) The method of claim 1 further comprising:

(c3) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

23. (Previously Presented) A method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers, wherein each DNS server and

respective plurality of content servers is configured to support content delivery for a plurality of content providers;

(B) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider, by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address of a content server of the plurality of content servers associated with said first DNS server; and

(C) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least said first hostname associated with the first content provider, by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address associated with a content server of the plurality of content servers associated with the second DNS server.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

No decisions have been rendered by a court or the Board in any proceeding identified pursuant to paragraph 37 C.F.R. §41.37 (c)(1)(ii).

PTO/SB/22 (03-13)
Approved for use through 3/31/2013. OMB 0651-0031
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) 0023-US-D1
Application Number 12/050,648	Filed March 18, 2008
For CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	
Art Unit 2451	Examiner Backhean TIV

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	Micro Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$200	$100	$50	$
☐	Two months (37 CFR 1.17(a)(2))	$600	$300	$150	$
☐	Three months (37 CFR 1.17(a)(3))	$1,400	$700	$350	$
☐	Four months (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☑	Five months (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$ 3000

☐ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 505063.

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I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. 37 CFR 3.73(b) statement is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration number 58259.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/JCS/	January 23, 2015
Signature	Date
Jonathan C. Siekmann	720-888-2140
Typed or printed name	Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The **Privacy Act of 1974** (**P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal					
Application Number:	12050648				
Filing Date:	18-Mar-2008				
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS				
First Named Inventor/Applicant Name:	Michael Slocombe				
Filer:	David Dewey Wier/Jonathan Siekmann				
Attorney Docket Number:	0023-US-D1				
Filed as Large Entity					
Filing Fees for **Utility under 35 USC 111(a)**					
Description		**Fee Code**	**Quantity**	**Amount**	**Sub-Total in USD($)**
Basic Filing:					
Pages:					
Claims:					
Miscellaneous-Filing:					
Petition:					
Patent-Appeals-and-Interference:					
Post-Allowance-and-Post-Issuance:					
Extension-of-Time:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 5 months with $0 paid	1255	1	3000	3000
Miscellaneous:				
		Total in USD ($)		**3000**

Electronic Acknowledgement Receipt	
EFS ID:	21298195
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	23-JAN-2015
Filing Date:	18-MAR-2008
Time Stamp:	17:53:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$3000
RAM confirmation Number	4997
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	0023_US_D1_AppealBrief.pdf	128515 2b5323f7e65dffbe918162e1e7259f1bcc74234f	no	25
Warnings:					
Information:					
2	Extension of Time	sb0022.pdf	186782 1e025c9c7dcc305f3bb6d25c226a263d740f7a71	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30969 52d815804453f2be335e6c50a9783aaea04a1f9a	no	2
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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/31 (02-14)
Approved for use through 07/31/2016. OMB 0651-0031
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NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD

Docket Number (Optional): 0023-US-D1

I hereby certify that this correspondence is being facsimile transmitted to the USPTO EFS-Web transmitted to the USPTO, or or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on _____

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In re Application of: Michael Slocombe

Application Number	Filed
12/050,348	03/18/2008

For: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

Art Unit	Examiner
2451	Tiv, Backhean

Applicant hereby **appeals** to the Patent Trial and Appeal Board from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ _____

☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ _____

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 50-5063 .

☑ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☑ attorney or agent of record. Registration number 48,229.

☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____

/David D. Wier/
Signature

David D. Wier
Typed or printed name

720-888-3539
Telephone number

June 23, 2014
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/22 (03-13)
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) 0023-US-D1
Application Number 12/050,648	Filed 03/18/2008
For CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	
Art Unit 2451	Examiner Tiv, Backhean

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	Micro Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$200	$100	$50	$
☐	Two months (37 CFR 1.17(a)(2))	$600	$300	$150	$
☑	Three months (37 CFR 1.17(a)(3))	$1,400	$700	$350	$ $1,400
☐	Four months (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☐	Five months (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$

☐ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-5063.

☑ Payment made via EFS-Web.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. 37 CFR 3.73(b) statement is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration number 48,229.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/David D. Wier/	June 23, 2014
Signature	Date
David D. Wier	720-888-3539
Typed or printed name	Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☑ * Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Privacy Act Statement

The **Privacy Act of 1974** (**P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal	
Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of Appeal	1401	1	800	800
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	1253	1	1400	1400
Miscellaneous:				
		Total in USD ($)		**2200**

Electronic Acknowledgement Receipt	
EFS ID:	19387147
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier
Filer Authorized By:	
Attorney Docket Number:	0023-US-D1
Receipt Date:	23-JUN-2014
Filing Date:	18-MAR-2008
Time Stamp:	20:08:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$2200
RAM confirmation Number	6906
Deposit Account	505063
Authorized User	WIER, DAVID D
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees) Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Notice of Appeal Filed	20140623NoticeofAppeal.pdf	209894 56b8a64014aa0a62785efe4174d89f25827b6835	no	2
Warnings:					
Information:					
2	Extension of Time	20140623ExtensionofTime.pdf	187178 7eb89489e2565f88982c9f81acbe421170446ae6	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32302 3a6824e0ca14a8de42e708b23a9d8b7f2caba59f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	429374		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

83579 7590 12/24/2013

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
TIV, BACKHEAN	
ART UNIT	PAPER NUMBER
2451	

NOTIFICATION DATE	DELIVERY MODE
12/24/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent.docketing@level3.com

Office Action Summary	Application No. 12/050,648	Applicant(s) SLOCOMBE ET AL.	
	Examiner BACKHEAN TIV	Art Unit 2451	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/6/13*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-23* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-23* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *10/22/13*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

DETAILED ACTION

Claims 1-23 are pending. This is a response to the Remarks filed on 12/6/13. This action is made **FINAL**.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 10/22/13 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-23 rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US Publication 2005/0010653 issued to McCanne in view of US Patent 7,653,700 issued to Bahl et al.(Bahl).

As per claim 1, McCanne teaches a method of content delivery in a network, the method comprising: (A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers (para. [0119], [0126]); (B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname (para. [0119], [0120], [0123], [0126], [0132-136], [0148-0155]); (C) responsive to a request for a content associated with the content provider and issued by a client, said request including at least hostname (para. [0132-136]), (c1) causing said hostname to be resolved to said common anycast address by a DNS server associated with an Internet Service Provider(ISP) ([0132-136], [0148-0155]), (c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and (para. [0148-158]).

McCanne however does not explicitly teach ISP DNS server for address resolution.

Bahl explicitly teaches the use of an ISP DSN server for address resolution(col.10, lines 15-19).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of McCanne to include the teachings of Bahl in order to locally resolve addresses.

One ordinary skill in the art would have been motivated to combine the teachings in order to reduce latency and network cost(Bahl, col.3, lines 26-40).

As per claim 2, McCanne teaches the method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs) (para. [0087], Fig. 16).

As per claim 3, McCanne teaches the method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP (Fig. 13).

As per claim 4, McCanne teaches the method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP) (Fig. 13).

As per claim 5, McCanne teaches the method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster (Fig. 13; Goldszmidt: fig. 1a).

As per claim 6, McCanne teaches the method as recited in claim 1 further comprising: (D) by the content server, attempting to serve the content (para. [0119], [0120], [0123], [0126]).

As per claim 7, McCanne teaches the method as recited in claim 6 wherein said step (D) of attempting comprises: (d1) if a valid version of said content is available on the content server, serving the content; otherwise (d2) obtaining the content from a content source and then serving the content (para. [0087], [0186]).

As per claim 8, McCanne teaches the method as recited in claim 7 wherein, said content source is an origin server associated with said content provider (para. [0087], [0186],[0188]).

As per claim 9, McCanne teaches the method as recited in claim 7 wherein, if a valid version of said content is not available on the content servers, the content servers uses a table to ascertain where to obtain the content (para. [0087], [0186],[0188]).

As per claim 10, McCanne teaches a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising: providing a plurality of Domain Name System (DNS) servers, wherein each DNS server is associated with a respective plurality of content servers (para. [0119], [0126]); configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith (para. [0120]); (C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider (para. [0119], [0120], [0122], [0126]), (c11) by one of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server (para. [0119], [0120], [0122]-, [0126]); and then (c13) attempting to serve said first content from a server (para. [0119], [0120], [0122]-, [0126]); and (C2) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least a second hostname

associated with the second content provider (para. [0119], [0120], [0122]-, [0126]), (c21) by one of said plurality of DNS servers, resolving said second hostname to identify a second IP address for retrieval of the second content from a second content server (para. [0119], [0120], [0122]-, [0126]); (c23) attempting to serve said second content from a server (para. [0119], [0120], [0122]-, [0126]).

However, McCanne does not disclose by a switch associated with said resolving DNS server, selecting the content server from said respective plurality of content servers associated with the DNS server.

Bahl teaches at least one switch selecting the content server from a cluster of content servers (col.3, lines 60-col.4, line 25, col.10, lines 60-67).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of McCanne to include the teachings of Bahl in order to load balance request for content.

One ordinary skill in the art would have been motivated to combine the teachings in order to reduce latency and network cost(Bahl, col.3, lines 26-40).

As per claim 13, the method of claim 1 wherein selection of the content server is based on a load balancing (Bahl, col.3, lines 60-col.4, line 25, col.10, lines 60-67).

As per claim 18, the method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy (Bahl, col.3, lines 60-col.4, line 25, col.10, lines 60-67).

As per claim 19, the method of claim 10, wherein the resolving DNS server of step (c11) is same as the resolving DNS server performing of step (c21) (McCanne, para. [0119], [0120], [0122], [0126]).

As per claim 20, the method of claim 19, wherein the switch of step (c12) is the same as the switch of step (c22) (Bahl, col.3, lines 60-col.4, line 25, col.10, lines 60-67).

As per claim 21, the method of claim 19, wherein the first content server is the same as the second content server (McCanne para. [0119], [0120], [0122], [0126]).

All claims not specifically mentioned are rejected for the same reasons(citation and motivation) set forth above.

Response to Arguments

Applicant's arguments filed 12/6/13 have been fully considered but they are not persuasive. The applicant argues in substance,

a) The prior art does not teach “causing said hostname to be resolved to said common anycast address by an ISP DNS server”, and “by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server",

In reply to a); McCanne, para.132-136,148-152, the APAR-DNS servers are assigned common anycast address and appears as name server on one or more CDNs, which is owned by an ISP or by a third party. The backbone then configures the DNS so that some subtree of the DNS namespace is authoritatively managed by the nameserver with an APAR anycast address. The APAR-DNs servers are authoritative name servers for the DNS subdomains in the subtree. When the request is received,

the DNS query mechanism learns that the hostname is handled by an authoritative name server with some APAR anycast address N*, and the client's request is then sent to N*, causing the request to be routed to the nearest APAR-DNS server configured to handle requests for cdn.acme.net hostname. The hostname is then resolved by the closest or nearest DNS server, see [0138-0157]. In further, Bahl, col.10, lines 15-19, teaches the use of ISP DNS server for address resolution to an IP address of a particular website, therefore teaches the limitations.

b) The prior art does not teach "a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step(c11)",

In reply to b); The limitation recites the use of a switch for selection of a content server from a plurality of content servers.

Bahl, col.3, lines 60-col.4, line 25, col.10, lines 60-67, teaches the selection of a particular web server by a load balancer with the smallest latency, therefore teaches this limitation.

Note: the claims also include "associated with said resolving DNS server". Any switch or content server in the DNS resolution environment are "associated with the resolving DNS server". The claims has not defined or gives a specific distinction of what it means to be "associated with the said resolving DNS server".

c) The Office has not established has not establish a prima facie case of obviousness because the applicant does not know which portions of McCanne and Bahl is relevant nor which aspect of McCanne is being modified by Bahl because the

rationale cited with respect to claims 1 and 10 may not necessarily apply to claims 11,12,16,17,23.

In reply to c); Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

The Office states that all claims not specifically mentioned are rejected for the same reasons(citation and motivation) set forth above. The Office has established that the citation of McCanne and Bahl, set forth in claims 1-10,13,18-21 and motivation are also being applied to all other claims.

Examiner's Remarks

The Office encourages the applicant to point to specific location in the specification for all amendments made in the instant specification and all parent applications in order to advance prosecution of the application.

The cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Backhean Tiv whose telephone number is (571) 272-5654. The examiner can normally be reached on M-T 7-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Backhean Tiv/
Primary Examiner, Art Unit 2451

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	**Art Unit**
	BACKHEAN TIV	2451

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009	03/11/2010	10/04/2010	11/03/2011	08/27/2013	12/16/2013			
	1	✓	✓	✓	✓	✓	✓			
	2	✓	✓	✓	✓	✓	✓			
	3	✓	✓	✓	✓	✓	✓			
	4	✓	✓	✓	✓	✓	✓			
	5	✓	✓	✓	✓	✓	✓			
	6	✓	✓	✓	✓	✓	✓			
	7	✓	✓	✓	✓	✓	✓			
	8	✓	✓	✓	✓	✓	✓			
	9	✓	✓	✓	✓	✓	✓			
	10	✓	✓	✓	✓	✓	✓			
	11	✓	✓	✓	✓	✓	✓			
	12	✓	✓	✓	✓	✓	✓			
	13		✓	✓	✓	✓	✓			
	14		✓	✓	✓	✓	✓			
	15		✓	✓	✓	✓	✓			
	16			✓	✓	✓	✓			
	17			✓	✓	✓	✓			
	18			✓	✓	✓	✓			
	19			✓	✓	✓	✓			
	20			✓	✓	✓	✓			
	21			✓	✓	✓	✓			
	22				✓	✓	✓			
	23				✓	✓	✓			

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/050,648
Filing Date	Mar 18, 2008
First Named Inventor	Michael Slocombe
Art Unit	2451
Examiner Name	Backhean Tiv

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		Final Office Action, mailed October 22, 2013, Application No. 09/982,721 filed October 18, 2001; Dkt. No. 0023-US-01, 14 pgs.	

EXAMINER /Backhean Tiv/ (12/16/2013) **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional) [2] Applicant is to place a check mark here if English language Translation is attached

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /BT/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant	: Michael Slocombe, et al.	
Appln. No.	: 12/050,648	Confirmation No: 9055
Filed	: March 18, 2008	Group Art Unit: 2449
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORK	Examiner: Backhean TIV Docket No. 0023-US-D1

RESPONSE TO OFFICE ACTION

Via EFS-Web

Dear Sir:

In response to the Final Office Action dated 6 September 2013, please enter the following amendments, if any, and remarks:

A listing of the claims is found on page 2 of this paper.

Remarks/Arguments begin on page 9 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously Presented) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers;

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, said request including at least said hostname,

(c1) causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server; and then

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server.

2. (Previously Presented) The method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs).

3. (Previously Presented) The method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP.

4. (Original) The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. (Previously Presented) The method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster.

6. (Previously Presented) The method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content.

7. (Previously Presented) The method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of the content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content.

8. (Original) The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. (Previously Presented) The method as recited in claim 7 wherein, if a valid version of the content is not available on the content server, the content server uses a table to ascertain where to obtain the content.

10. (Previously Presented) A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers;

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith;

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider,

(c11) by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server of said content servers associated with said first DNS server;

(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11); and

(c13) attempting to serve said first content from the first content server; and

(C2) responsive to a second request for said first content associated with said first content provider of said plurality of content providers, said second request including at least the first hostname associated with the first content provider,

(c21) by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address for retrieval of the first content from a content server associated with the second DNS server;

(c22) by a switch associated with said resolving DNS server of step (c21), selecting the second content server from said respective plurality of content servers associated with the DNS server of step (c21); and

(c23) attempting to serve said second content from the second content server.

11. (Previously Presented) A content delivery system for delivering content on behalf of a plurality of content providers, each of said plurality of content providers having a hostname associated therewith, the system comprising:

(A) a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, said plurality of DNS servers being authoritative for said hostnames associated with said plurality of content providers;

(B) a set of content servers associated with each DNS server, each set comprising at least a plurality of content servers; and

(C) at least one switch associated with each set of content servers, wherein

(D) responsive to a request to resolve a hostname associated with a particular content provider of said plurality of content providers, said request being associated with an end-user request for content of said particular content provider, one of said plurality of DNS servers is operable to resolve said hostname to identify an IP address for use by the end-user to retrieve the content from a content server,

(E) the at least one switch associated with the set of content servers of the resolving DNS server is operable to perform load balancing to select the content server from the set of content servers associated with the resolving DNS server, and

(F) the content server is operable to serve the content to the end-user.

12. (Previously Presented) A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, each DNS server being associated with a respective plurality of content servers, wherein at least some of said plurality of content servers are located at network Points of Presence (POPs);

(B) causing said plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider by a client, said request including at least said,

(c1) by one of said plurality of DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving DNS server.

(D) by the content server,

(d1) attempting to serve the content by:

(d11) if a valid version of the content is available on the content server, serving the content; otherwise

(d12) obtaining the content from a content source and then serving the content.

13. (Previously Presented) The method as recited in claim 1, wherein selection of the content server is based on a load balancing policy.

14. (Previously Presented) The method as recited in claim 10, wherein selection of at least one of the first content server and the second content server is based on a load balancing policy.

15. (Previously Presented) The method as recited in claim 12, wherein selection of the content server is based on a load balancing policy.

16. (Previously Presented) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), the plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a set of content servers, each set comprising at least a plurality of content servers;

(B) causing the plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname,

(c1) by one of the plurality of DNS servers, resolving the hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch associated with the set of content servers of the resolving DNS server, selecting the content server from the set of content servers associated with the resolving DNS server.

17. (Previously Presented) A content delivery system comprising a plurality of nodes, wherein each node comprises:

a Domain Name System (DNS) server sharing an anycast address with DNS servers in other nodes of the content delivery system, wherein the DNS server is authoritative for hostnames associated with a plurality of content providers;

a plurality of content servers; and

at least one switch, wherein

responsive to a request by a client for content associated with a particular content provider of the plurality of content providers, the request including at least a hostname associated with the particular content provider, the DNS server is operable to resolve the hostname to identify an IP address for use by the client to retrieve the content from a content server,

the at least one switch is operable to select the content server from the plurality of content servers, and

the content server is operable to serve the content to the client.

18. (Previously Presented) The method of claim 22, wherein the step of (c3) is performed in accordance with a predetermined selection policy.

19. (Previously Presented) The method as recited in claim 10, wherein the resolving DNS server of step (c11) is the same as the resolving DNS server performing of step (c21).

20. (Previously Presented) The method as recited in claim 19, wherein the switch of step (c12) is the same as the switch of step (c22).

21. (Previously Presented) The method as recited in claim 19, wherein the first content server is the same as the second content server.

22. (Previously Presented) The method of claim 1 further comprising:

(c3) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

23. (Previously Presented) A method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers, wherein each DNS server and respective plurality of content servers is configured to support content delivery for a plurality of content providers;

(B) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider, by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address of a content server of the plurality of content servers associated with said first DNS server; and

(C) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least said first hostname associated with the first content provider, by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address associated with a content server of the plurality of content servers associated with the second DNS server.

Remarks

This Response is responsive to the Office Action mailed 6 September 2013 (the "Office Action"). Claims 1-23 are pending in the application and stand rejected. In this Response, no claims have been amended, no claims have been cancelled, and no claims have been added. Reexamination and reconsideration of the claims are respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 1-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over McCanne, U.S. Patent Application 2005/0010653A1 (hereinafter McCanne) in view of Bahl *et al.*, U.S. Patent 7,763,700 B1(hereinafter Bahl).

To establish prima facie obviousness of a claimed invention, two basic criteria must be met. First, all the claim elements must be shown by the prior art. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Second, there must be some rationale or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. In other words, there should be an explicit analysis regarding whether there was an apparent reason to combine the known elements in the fashion claimed in the Application at issue. KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). Without conceding the second criteria, the Applicant respectfully asserts that the rejection does not satisfy the first criteria.

Lack of Elements: Independent Claim 1

The Office Action cites McCanne for teaching various elements of claim 1, and states that McCanne does not teach having an ISP DNS server for address resolution and relies upon Bahl for such teachings. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 1 defines a method of content delivery in a network, the method comprises (c1) causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server; and then (c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server. The combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

Neither McCanne nor Bahl teaches two DNS servers performing two resolves. McCanne and Bahl each teaching one resolving, neither teaches performing two resolves. The various paragraphs cited by the Office Action discuss only one resolve. Thus, the combination of McCanne and Bahl does not teach performing two resolves. Therefore, the combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

Furthermore, neither McCanne nor Bahl teaching performing the two resolves in the order as claimed. In element (c1), the hostname is resolved to the common anycast address by the ISP DNS server, then element (c2) is operative. In element (c2), the hostname is resolved to identify an IP address by one of the CDN DNS servers. Neither McCanne nor Bahl teaches performing two resolves in the order as claimed. Thus, the combination of McCanne and Bahl does not teach performing two resolves in order. Therefore, the combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

Thus, the combination of McCanne and Bahl does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 1 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Independent Claim 10

The Office Action cites McCanne for teaching various elements of claim 10, and states that McCanne does not teach having a switch associated with said resolving DNS server, selecting the content server from said respective plurality of content servers associated with the DNS server and relies upon Bahl for such teachings. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 10 defines a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising (c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11). The combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

The Office Action states that McCanne does not teach such elements and relies upon Bahl. More specifically, the Office Action states that the text at column 3, line 60 to column 4, line 25; and column 10, lines 60-67 teach these elements. However, the cited text beginning at column 3 discusses having the DNS-LBs maintain current knowledge of the ISP's DNS address

and notify the DNS-B machines of the addresses. Also, the DNS-LB performs the function of a caching engine. The cited text at column 10 discusses having the lowest network latency. None of this teaches having a switch associated with the resolving DNS server of step (c11), and selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11). Therefore, the combination of McCanne and Bahl does not teach at least these elements of the claimed invention.

Thus, the combination of McCanne and Bahl does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 10 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Improper Rejection: Independent Claims 11, 12, 16, 17, and 23

The Office Action does not provide an element-by-element analysis for independent claims 11, 12, 16, 17, and 23.

The test for non-obvious subject matter is whether the differences between the subject matter and the prior art are such that the claimed subject matter as a whole would have been obvious to a person having ordinary skill in the art to which the subject matter pertains. The United States Supreme Court in *Graham v. John Deere and Co.*, 383 U.S. 1 (1966) set forth the factual inquiries which must be considered in applying the statutory test: (1) determining of the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the pertinent art, and (4) evaluate evidence of secondary considerations. See M.P.E.P. §2141.

The M.P.E.P. § 706.02(j), incorporates the mandate of *Graham v. John Deere* and directs the Examiner to set forth in the Office action: (1) the relevant teachings of the prior art relied upon; (2) the difference or differences in the claim over the applied references; (3) the proposed modification of the applied references necessary to arrive at the claimed subject matter; and (4) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification.

In the current Office Action, the cited rejection does not provide any of items (1), (2), (3) or (4) for independent claims 11, 12, 16, 17, and 23.. With regards to item (1), the elements of independent claims 11, 12, 16, 17, and 23 are different from the elements of independent claims 1 and 10, which are provided an element-by-element analysis. Applicant does not know which

portions of McCanne are relevant to the various elements of claims 11, 12, 16, 17, and 23. With regard to item (2), the Applicant does not know which of McCanne and Bahl are being relied upon for the various elements of claims 11, 12, 16, 17, and 23. With regards to item (3) , Applicant does not know what aspects of McCanne or Bahl are being modified to become relevant to claims 11, 12, 16, 17, and 23, because the elements of claims 11, 12, 16, 17, and 23 are different from the elements of independent claims 1 and 10. With regards to item (4), the rationale cited with respect to claims 1 and 10 may not necessarily apply to claims 11, 12, 16, 17, and 23 because the modifications for item (3) may be different.

Thus, the Office Action does not comply with the mandates of *Graham v. John Deere* with respect to independent claims 11, 12, 16, 17, and 23. Therefore, the Applicant respectfully asserts that for the above reasons claim 11, 12, 16, 17, and 23 are patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Dependent Claims 2-9, 13-15, and 18-22

Claims 2-9, 13-15 and 18-22 depend from base claims 1, 10, and 12, respectively, and thus inherit all elements of their respective base claim. Each of claims 2-9, 13-15 and 18-22 sets forth features and elements not recited by the combination of McCanne and Bahl. Thus, the Applicant respectfully asserts that for the above reasons claims 2-9, 13-15 and 18-22 are patentable over the 35 U.S.C. § 103 rejection of record.

Conclusion

Claims 1-23 are currently pending in the application. Applicant believes that all pending claims are in condition for allowance. Applicant therefore requests that a timely Notice of Allowance be issued in this case.

If the Examiner should require any additional information or believes any issues could be resolved via a telephone interview, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: 6 December 2013

/Michael A. Papalas/

Michael A. Papalas
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6960 Brookshire Drive
Dallas, Texas 75230
214-361-8232
for Level 3 Communications, LLC

Electronic Acknowledgement Receipt	
EFS ID:	17595851
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	Michael A. Papalas
Filer Authorized By:	
Attorney Docket Number:	0023-US-D1
Receipt Date:	06-DEC-2013
Filing Date:	18-MAR-2008
Time Stamp:	23:08:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	007-P061-0023-US-D1-Response.pdf	140901 cc6fe0e27a78ce759a7c1a6494b96b62044ecb75	no	13

Warnings:
Information:

Total Files Size (in bytes):	140901

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/050,648	Filing Date 03/18/2008	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	12/06/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 23	Minus	** 23	= 0	X $80 =	0
	Independent (37 CFR 1.16(h))	* 7	Minus	***7	= 0	X $420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/CHERYL CLARK/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/08a (01-08)
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/050,648
Filing Date	Mar 18, 2008
First Named Inventor	Michael Slocombe
Art Unit	2451
Examiner Name	Backhean Tiv

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

US PATENT DOCUMENTS					
Examiner Initial *	**Cite No**	**Document Number**	**Publication Date**	**Name of Patentee or Applicant of Cited Document**	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	**Cite No**	**Foreign Patent Document**	**Publication Date**	**Name of Patentee or Applicant of cited Document**	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T^2

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	**Cite No [1]**	**Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.**	T^2
		Final Office Action, mailed October 22, 2013, Application No. 09/982,721 filed October 18, 2001; Dkt. No. 0023-US-01, 14 pgs.	

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
` EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Electronic Patent Application Fee Transmittal	
Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	David Dewey Wier/Kathleen McInnish
Attorney Docket Number:	0023-US-D1
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	17190279
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	22-OCT-2013
Filing Date:	18-MAR-2008
Time Stamp:	11:18:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	10953
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	23USD1_IDS.pdf	35997 f1f8e46c83fa41b37bd04ad2d71ee9be5dbfb724	no	5
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	23USD1_SB08.pdf	27246 332a1d3b5d7ec543934412ea40fd1c19fa739ceb	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Other Reference-Patent/App/Search documents	US09982721_ctfr_22Oct2013_23US01.pdf	492198 3568d41f09bd36853fe9a636edfeac28f1396b89	no	14
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30528 4b7f915044f58f3c3b413ee486359747018cb1e9	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	585969		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/050,648	Confirmation No.	:	9055
First Applicant	:	SLOCOMBE et al.	Art Unit	:	2451
Filed	:	March 18, 2008	Examiner	:	Backhean Tiv
Title	:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS			
Docket No.	:	0023-US-D1			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☐ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☒ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☐ No fee is due.

☒ The $180 fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☒ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: October 22, 2013

/JCS/

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

83579 7590 09/06/2013

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
TIV, BACKHEAN	
ART UNIT	PAPER NUMBER
2451	

NOTIFICATION DATE	DELIVERY MODE
09/06/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent.docketing@level3.com

Office Action Summary	Application No. 12/050,648	Applicant(s) SLOCOMBE ET AL.	
	Examiner BACKHEAN TIV	Art Unit 2451	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/13/13*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-23* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-23* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/4/13*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Claims 1-23 are pending. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/13/13 has been entered.

Note: This application has been assigned to a new examiner.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 6/4/13 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-23 rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US Publication 2005/0010653 issued to McCanne in view of US Patent 7,653,700 issued to Bahl et al.(Bahl).

As per claim 1, McCanne teaches a method of content delivery in a network, the method comprising: (A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers (para. [0119], [0126]); (B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname (para. [0119], [0120], [0123], [0126], [0132-136], [0148-0155]); (C) responsive to a request for a content associated with the content provider and issued by a client, said request including at least hostname (para. [0132-136]), (c1) causing said hostname to be resolved to said common anycast address by a DNS server associated with an Internet Service Provider(ISP) ([0132-136], [0148-0155]), (c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and (para. [0148-158]).

McCanne however does not explicitly teach ISP DNS server for address resolution.

Bahl explicitly teaches the use of an ISP DSN server for address resolution(col.10, lines 15-19).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of McCanne to include the teachings of Bahl in order to locally resolve addresses.

One ordinary skill in the art would have been motivated to combine the teachings in order to reduce latency and network cost(Bahl, col.3, lines 26-40).

As per claim 2, McCanne teaches the method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs) (para. [0087], Fig. 16).

As per claim 3, McCanne teaches the method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP (Fig. 13).

As per claim 4, McCanne teaches the method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP) (Fig. 13).

As per claim 5, McCanne teaches the method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster (Fig. 13; Goldszmidt: fig. 1a).

As per claim 6, McCanne teaches the method as recited in claim 1 further comprising: (D) by the content server, attempting to serve the content (para. [0119], [0120], [0123], [0126]).

As per claim 7, McCanne teaches the method as recited in claim 6 wherein said step (D) of attempting comprises: (d1) if a valid version of said content is available on the content server, serving the content; otherwise (d2) obtaining the content from a content source and then serving the content (para. [0087], [0186]).

As per claim 8, McCanne teaches the method as recited in claim 7 wherein, said content source is an origin server associated with said content provider (para. [0087], [0186],[0188]).

As per claim 9, McCanne teaches the method as recited in claim 7 wherein, if a valid version of said content is not available on the content servers, the content servers uses a table to ascertain where to obtain the content (para. [0087], [0186],[0188]).

As per claim 10, McCanne teaches a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising: providing a plurality of Domain Name System (DNS) servers, wherein each DNS server is associated with a respective plurality of content servers (para. [0119], [0126]); configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith (para. [0120]); (C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider (para. [0119], [0120], [0122], [0126]), (c11) by one of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server (para. [0119], [0120], [0122]-, [0126]); and then (c13) attempting to serve said first content from a server (para. [0119], [0120], [0122]-, [0126]); and (C2) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least a second hostname

associated with the second content provider (para. [0119], [0120], [0122]-, [0126]), (c21) by one of said plurality of DNS servers, resolving said second hostname to identify a second IP address for retrieval of the second content from a second content server (para. [0119], [0120], [0122]-, [0126]); (c23) attempting to serve said second content from a server (para. [0119], [0120], [0122]-, [0126]).

However, McCanne does not disclose by a switch associated with said resolving DNS server, selecting the content server from said respective plurality of content servers associated with the DNS server.

Bahl teaches at least one switch selecting the content server from a cluster of content servers (col.3, lines 60-col.4, line 25, col.10, lines 60-67).

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention to modify the teachings of McCanne to include the teachings of Bahl in order to load balance request for content.

One ordinary skill in the art would have been motivated to combine the teachings in order to reduce latency and network cost(Bahl, col.3, lines 26-40).

As per claim 13, the method of claim 1 wherein selection of the content server is based on a load balancing (Bahl, col.3, lines 60-col.4, line 25, col.10, lines 60-67).

As per claim 18, the method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy (Bahl, col.3, lines 60-col.4, line 25, col.10, lines 60-67).

As per claim 19, the method of claim 10, wherein the resolving DNS server of step (c11) is same as the resolving DNS server performing of step (c21) (McCanne, para. [0119], [0120], [0122], [0126]).

As per claim 20, the method of claim 19, wherein the switch of step (c12) is the same as the switch of step (c22) (Bahl, col.3, lines 60-col.4, line 25, col.10, lines 60-67).

As per claim 21, the method of claim 19, wherein the first content server is the same as the second content server (McCanne para. [0119], [0120], [0122], [0126]).

All claims not specifically mentioned are rejected for the same reasons(citation and motivation) set forth above.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground of rejection.

Examiner's Remarks

The Office encourages the applicant to point to specific location in the specification for all amendments made in the instant specification and all parent applications in order to advance prosecution of the application.

The cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention.

The examiner is available for Interviews on Tuesday and Wednesday at 10 AM, 1 and 2 PM EST. Please fax an agenda to (571) 273-5654.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BACKHEAN TIV whose telephone number is (571)272-5654. The examiner can normally be reached on M-T 7-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Backhean Tiv/
Primary Examiner, Art Unit 2451

Notice of References Cited	Application/Control No. 12/050,648	Applicant(s)/Patent Under Reexamination SLOCOMBE ET AL.	
	Examiner BACKHEAN TIV	Art Unit 2451	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,195,680 B1	02-2001	Goldszmidt et al.	709/203
*	B	US-6,266,339 B1	07-2001	Donahue et al.	370/432
*	C	US-2001/0052016 A1	12-2001	Skene et al.	709/226
*	D	US-2005/0010653 A1	01-2005	McCanne, Steve	709/219
*	E	US-7,209,959 B1	04-2007	Campbell et al.	709/219
*	F	US-2008/0235400 A1	09-2008	Slocombe et al.	709/245
*	G	US-7,653,700 B1	01-2010	Bahl et al.	709/217
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	BACKHEAN TIV	2451

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	all	8/9/2006	AP

SEARCH NOTES		
Search Notes	Date	Examiner
Name search and Continuity search	6/1/09	AP
EAST search (also considered the search of 09/982721)	6/1/09	AP
Updated EAST search	3/1/10	AP
Searched IEEE	3/2/10	AP
EAST TEXT SEARCH UPDATED (please see the attached search report).	9/16/2010	KD
UPDATE SEARCH	8/27/2013	BT

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/BACKHEAN TIV/ Primary Examiner.Art Unit 2451

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/050,648
Filing Date	Mar 18, 2008
First Named Inventor	Michael Slocombe
Art Unit	2451
Examiner Name	Backhean Tiv

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

UDS PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20020075836	Jun 20, 2002	Uematsu, Akira	
		20030079027	Apr 24, 2003	Slocombe, Michael et al.	
		20040249960	Dec 9, 2004	Hardy, William G., et al.	
		20080235400	Sep 25, 2008	Slocombe, Michael et al.	
		6148410	Nov 14, 2000	Baskey, Michael E., et al.	
		6266339	Jul 24, 2001	Donahue, Paul W., et al.	
		6711152	Mar 23, 2004	Kalmanek Jr., Charles R., et al.	
		7075897	Jul 11, 2006	Uematsu, Akira	
		7808968	Oct 5, 2010	Kalmanek Jr., Charles R., et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

/Backhean Tiv/ (08/27/2013)

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
[1] EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional) [2] Applicant is to place a check mark here if English language Translation is attached

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /BT/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	291	(ISP or "Internet service Provider") near4 DNS and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2013/08/27 08:43
L2	22	(ISP or "Internet service Provider") near4 DNS same (resolv$4) near3 address and (@ad or @rlad or @pd or @ptad or @prad)<="20011018"	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2013/08/27 08:43
L3	22	("20020075836" | "20030079027" | "20040249960" | "20080235400" | "6148410" | "6266339" | "6711152" | "7075897" | "7808968").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2013/08/27 08:47
L4	2	(("20050010653") or ("6195680")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/08/27 09:21

EAST Search History (Interference)

<This search history is empty>

8/27/2013 9:21:33 AM
C:\Users\btiv\Documents\EAST\Workspaces\12050648_DNS_resolving.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	**Art Unit**
	BACKHEAN TIV	2451

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☒ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009	03/11/2010	10/04/2010	11/03/2011	08/27/2013				
	1	✓	✓	✓	✓	✓				
	2	✓	✓	✓	✓	✓				
	3	✓	✓	✓	✓	✓				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	✓	✓	✓				
	6	✓	✓	✓	✓	✓				
	7	✓	✓	✓	✓	✓				
	8	✓	✓	✓	✓	✓				
	9	✓	✓	✓	✓	✓				
	10	✓	✓	✓	✓	✓				
	11	✓	✓	✓	✓	✓				
	12	✓	✓	✓	✓	✓				
	13		✓	✓	✓	✓				
	14		✓	✓	✓	✓				
	15		✓	✓	✓	✓				
	16			✓	✓	✓				
	17			✓	✓	✓				
	18			✓	✓	✓				
	19			✓	✓	✓				
	20			✓	✓	✓				
	21			✓	✓	✓				
	22				✓	✓				
	23				✓	✓				

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
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Examiner Name	Backhean Tiv

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

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OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
` EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Electronic Acknowledgement Receipt	
EFS ID:	15943261
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	04-JUN-2013
Filing Date:	18-MAR-2008
Time Stamp:	14:10:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	23USD1_IDS.pdf	35803 b564bfb8477876c1be49d71609c63d7c6b828131	no	5
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Form (SB08)	23USD1_SB08.pdf	28675 cc8f4fa73243ce712d23e4a7a7c4c596680825b2	no	1

Warnings:	
Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	64478

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/050,648	Confirmation No.	:	9055
First Applicant	:	SLOCOMBE et al.	Art Unit	:	2451
Filed	:	March 18, 2008	Examiner	:	Backhean Tiv
Title	:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS			
Docket No.	:	0023-US-D1			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☒ No fee is due.

☐ The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☐ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: June 4, 2013

/JCS/

Jonathan C. Siekmann
Registration No. 58,259
USPTO Customer No. 83579
Level 3 Communications, LLC
1025 Eldorado Blvd.
Broomfield, Colorado 80021
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Fax: 720-888-5619

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	12/050,648	Filing Date	2008-03-18	Docket Number (if applicable)	0023-US-D1	Art Unit	2449
First Named Inventor	Michael Slocombe			Examiner Name	Backhean Tiv		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 505063

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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Signature of Registered U.S. Patent Practitioner			
Signature	/JCS/	Date (YYYY-MM-DD)	2013-05-13
Name	Jonathan C. Siekmann	Registration Number	58259

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant	: Michael Slocombe, et al.	
Appln. No.	: 12/050,648	Confirmation No: 9055
Filed	: March 18, 2008	Group Art Unit: 2449
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORK	Examiner: Backhean Tiv Docket No. 0023-US-D1

REQUEST FOR CONTINUED EXAMINATION
& RESPONSE TO OFFICE ACTION

Via EFS-Web
MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Final Office Action dated July 11, 2012, please enter the following amendments and remarks, filed concurrently with a Request for Continued Examination:

Extension of Time Request is found on page 2 of this paper.

A listing of the claims is found on page 3 of this paper.

Remarks/Arguments begin on page 10 of this paper.

Extension of Time

Applicant hereby petitions for a **five**-month extension of time and is electronically submitting the required fee with this correspondence. Other than this extension fee, Applicant believes no other Petitions or fees are necessary, but if this is incorrect, please consider this a Petition and authorization of payment therefor. The Commissioner is authorized to deduct any additional fees from or credit any over-payment to the undersigned's Deposit Account No. 50-5063.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers;

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, said request including at least said hostname,

(c1) causing said hostname to be resolved to said common anycast address by an Internet Service Provider (ISP) DNS server ~~associated with an Internet Service Provider (ISP)~~; and then

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server.

2. (Previously Presented) The method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs).

3. (Previously Presented) The method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP.

4. (Original) The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. (Previously Presented) The method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster.

6. (Previously Presented) The method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content.

7. (Previously Presented) The method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of the content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content.

8. (Original) The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. (Previously Presented) The method as recited in claim 7 wherein, if a valid version of the content is not available on the content server, the content server uses a table to ascertain where to obtain the content.

10. (Previously Presented) A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers;

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith;

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider,

(c11) by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server of said content servers associated with said first DNS server;

(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11); and

(c13) attempting to serve said first content from the first content server; and

(C2) responsive to a second request for said first content associated with said first content provider of said plurality of content providers, said second request including at least the first hostname associated with the first content provider,

(c21) by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address for retrieval of the first content from a content server associated with the second DNS server;

(c22) by a switch associated with said resolving DNS server of step (c21), selecting the second content server from said respective plurality of content servers associated with the DNS server of step (c21); and

(c23) attempting to serve said second content from the second content server.

11. (Previously Presented) A content delivery system for delivering content on behalf of a plurality of content providers, each of said plurality of content providers having a hostname associated therewith, the system comprising:

(A) a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, said plurality of DNS servers being authoritative for said hostnames associated with said plurality of content providers;

(B) a set of content servers associated with each DNS server, each set comprising at least a plurality of content servers; and

(C) at least one switch associated with each set of content servers, wherein

(D) responsive to a request to resolve a hostname associated with a particular content provider of said plurality of content providers, said request being associated with an end-user request for content of said particular content provider, one of said plurality of DNS servers is operable to resolve said hostname to identify an IP address for use by the end-user to retrieve the content from a content server,

(E) the at least one switch associated with the set of content servers of the resolving DNS server is operable to perform load balancing to select the content server from the set of content servers associated with the resolving DNS server, and

(F) the content server is operable to serve the content to the end-user.

12. (Previously Presented) A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, each DNS server being associated with a respective plurality of content servers, wherein at least some of said plurality of content servers are located at network Points of Presence (POPs);

(B) causing said plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider by a client, said request including at least said,

(c1) by one of said plurality of DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving DNS server.

(D) by the content server,

(d1) attempting to serve the content by:

(d11) if a valid version of the content is available on the content server, serving the content; otherwise

(d12) obtaining the content from a content source and then serving the content.

13. (Previously Presented) The method as recited in claim 1, wherein selection of the content server is based on a load balancing policy.

14. (Previously Presented) The method as recited in claim 10, wherein selection of at least one of the first content server and the second content server is based on a load balancing policy.

15. (Previously Presented) The method as recited in claim 12, wherein selection of the content server is based on a load balancing policy.

16. (Previously Presented) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), the plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a set of content servers, each set comprising at least a plurality of content servers;

(B) causing the plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname,

(c1) by one of the plurality of DNS servers, resolving the hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch associated with the set of content servers of the resolving DNS server, selecting the content server from the set of content servers associated with the resolving DNS server.

17. (Previously Presented) A content delivery system comprising a plurality of nodes, wherein each node comprises:

a Domain Name System (DNS) server sharing an anycast address with DNS servers in other nodes of the content delivery system, wherein the DNS server is authoritative for hostnames associated with a plurality of content providers;

a plurality of content servers; and

at least one switch, wherein

responsive to a request by a client for content associated with a particular content provider of the plurality of content providers, the request including at least a hostname associated with the particular content provider, the DNS server is operable to resolve the hostname to identify an IP address for use by the client to retrieve the content from a content server,

the at least one switch is operable to select the content server from the plurality of content servers, and

the content server is operable to serve the content to the client.

18. (Currently Amended) The method of claim [[1]] 22, wherein the step of (c3) is performed in accordance with a predetermined selection policy.

19. (Previously Presented) The method as recited in claim 10, wherein the resolving DNS server of step (c11) is the same as the resolving DNS server performing of step (c21).

20. (Previously Presented) The method as recited in claim 19, wherein the switch of step (c12) is the same as the switch of step (c22).

21. (Previously Presented) The method as recited in claim 19, wherein the first content server is the same as the second content server.

22. (Previously Presented) The method of claim 1 further comprising:

(c3) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

23. (Previously Presented) A method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers, wherein each DNS server and respective plurality of content servers is configured to support content delivery for a plurality of content providers;

(B) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider, by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address of a content server of the plurality of content servers associated with said first DNS server; and

(C) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least said first hostname associated with the first content provider, by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address associated with a content server of the plurality of content servers associated with the second DNS server.

Remarks

This Response is responsive to the Final Office Action mailed July 11, 2012 (the "Office Action"). Claims 1-23 are pending in the application and stand rejected. In this Response, claims 1 and 18 have been amended, no claims have been cancelled, and no claims have been added. Reexamination and reconsideration of the claims are respectfully requested.

Rejections Under 35 U.S.C. § 112, First Paragraph

Claim 18 stands rejected under 35 U.S.C. §112, fourth paragraph, as purportedly being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Applicant believes claim 18, as amended, is in compliance with 35 U.S.C. §112, fourth paragraph, and withdrawal of the rejection is respectfully requested.

Rejections Under 35 U.S.C. § 102(e)

Claims 1-9 and 23 stand rejected under 35 U.S.C. § 102(e) as purportedly being anticipated by U.S. Publication No. 2005/0010653 to McCanne ("McCanne"). Applicant respectfully traverses the rejection for at least the following reasons.

This invention, as recited in claim 1, is a method of content delivery in a network. The method includes providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN). For the sake of this description, these DNS servers are referred to as CDN DNS servers. As further recited in claim 1, the plurality of CDN DNS servers share a common anycast address. Additionally, each CDN DNS server is associated with a respective plurality of content servers.

Claim 1 further recites causing the plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname.

As further recited in claim 1, responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname, the method includes: (c1) causing the hostname to be resolved to the common anycast address by an ISP DNS server; and then (c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server.

Thus, using the invention of claim 1, in response to a request associated with a content provider (the request including a hostname), the hostname is resolved to the common anycast address by *an ISP DNS* and then to an IP address for one of the content servers by one of *the CDN DNS servers*. McCanne, however, does not anticipate both claim 1 steps (c1) and (c2). For at least these reasons, claim 1 and its dependents are patentable over McCanne. Similarly, as claim 23 contains the same or similar limitations as claim 1, claim 23 is also patentable over McCanne.

In view of the above, withdrawal of these rejections under Section 102 is respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Claims 10-22 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over McCanne in view of U.S. Patent No. 6,195,680 to Goldzmidt et al. ("Goldzmidt"). Applicant respectfully traverses the rejection for at least the following reasons.

The McCanne Reference

Applicant agrees with the Examiner's concession of page 11 of the Office Action that, with respect to claim 10, "McCanne does not disclose by a switch associated with said resolving DNS server, selecting the content server from said respective plurality of content servers associated with the DNS server."

McCanne generally discloses a content distribution system that employs Administratively Provisioned Interdomain Anycast Routing "APAR" (e.g., see paragraphs [0110]-[0190]) used in combination with a Client-Driven Service Rendezvous "CDSR" architecture (e.g., see paragraphs [0191]-[0217]). In order to transition to a system that can implement APAR and CDSR, McCanne discloses various configurations for providing a staged deployment (e.g., see [0218]-[0238]). In particular, the following paragraphs of McCanne illustrate such a staged deployment:

> [0219] "One of the challenges facing the deployment of client-driven service rendezvous is the changes that must be made to the existing base of applications (i.e., Web browsers and streaming media clients) and the propagation of those changes into the active user community. Clearly, this transition cannot occur all at once and instead must progress gradually over time as vendors integrate such a

capability into their applications and users upgrade their software. **Thus, the system must be able to support a mixture of legacy applications alongside the new CDSR capable applications.**"

[0220] "Fortunately, a staged deployment of CDSR capabilities is possible through a novel combination of CDSR redirection and explicit redirection. In this scheme, **CDSR redirectors are deployed in parallel with explicit redirectors and URLs are structured so that they work effectively under either scenario.** There are a number of possible ways to structure this coexistence and it would be obvious to an expert in the art how the schemes described herein could be combined to perform this sort of staged deployment."

[0226] "A similar strategy can be adopted for other types of protocols and applications like Web browsers. In this case, **an HTTP redirection agent runs in parallel to a CDSR redirector running on the APAR anycast-addressed device**..."

(emphasis added)

As can be distilled from the above paragraphs, McCanne's staged deployment contemplates scenarios in which an HTTP redirection agent (running in parallel to a CDSR redirector) handles conventional HTTP requests from legacy applications. In paragraph [0233], McCanne discloses a particular configuration wherein "the HTTP redirection agent is replaced with a Web server..." and "[t]o scale this configuration, *the Web server may optionally be load-balanced with a layer 4 switch.*" (emphasis added) Then, in paragraphs [0234]-[0237], McCanne further indicates that legacy Web browser clients (i.e., unaware of CDSR redirection) can retrieve content directly from the Web server residing above the switch (e.g., see FIG. 21). However, if a CDSR-aware client transmits a service request packet, the switch would then route the packet to the CDSR redirector for further processing (e.g., see paragraph [0237]).

In summary, McCanne contemplates using a layer 4 switch only in a transitional or staged deployment scenario. In other words, use of a layer 4 switch in McCanne is merely to load balance among Web servers in response to conventional HTTP requests from legacy client-side applications. Otherwise, the layer 4 switch passes off the more sophisticated APAR-CDSR service request packets to a CDSR redirector. Therefore, other than providing support for legacy applications and conventional HTTP requests, a layer 4 switch is not useful in McCanne's suggested APAR-CDSR architecture.

The Goldzmidt Reference

Goldzmidt generally discloses a client-based system that provides fault tolerance and load balancing for real-time data streaming (e.g., see Abstract). In particular, a control server can distribute client requests among servers in a cluster of servers (e.g., see FIG. 1(a) and col. 4, lines 54-65).

McCanne modified in view of Goldzmidt

Assuming, *arguendo*, that one of ordinary skill in the art would be motivated to combine the control server functionality of Goldzmidt with the APAR-CDSR system of McCanne, such a motivation would only be considered for augmenting the layer 4 switch functionality used in McCanne's staged deployment scenario. As previously discussed, McCanne's contemplated use of a layer 4 switch is merely to support legacy client-side applications and conventional HTTP requests while transitioning to an APAR-CDSR based system. Thus, other than for providing legacy support during a transitional phase, one of ordinary skill in the art would not be motivated to combine the control server functionality of Goldzmidt with the APAR-CDSR system of McCanne.

Therefore, as the combination of McCanne and Goldzmidt is improper in view of the present application and pending claims, the Office Action has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a). Accordingly, claim 10 and its dependents are patentable over McCanne and Goldzmidt. Likewise, as independent claims 11, 12, 16, and 17 contain the same or similar limitations as claim 10, these claims (and any dependents therefrom) are also patentable over McCanne and Goldzmidt.

In view of the above, withdrawal of these rejections under Section 103 is respectfully requested.

Conclusion

Claims 1-23 are currently pending in the application. Applicant believes that all pending claims are in condition for allowance. Applicant therefore requests that a timely Notice of Allowance be issued in this case.

If the Examiner should require any additional information or believes any issues could be resolved via a telephone interview, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: May 13, 2013

/JCS/

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Electronic Patent Application Fee Transmittal

Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	0023-US-D1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 5 months with $0 paid	1255	1	3000	3000

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE - 2nd and Subsequent Request	1820	1	1700	1700
		Total in USD ($)		**4700**

Electronic Acknowledgement Receipt	
EFS ID:	15764466
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	13-MAY-2013
Filing Date:	18-MAR-2008
Time Stamp:	19:00:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$4700
RAM confirmation Number	6615
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees) Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	sb0030e_fill.pdf	936565 e13c676e70ec0992f37255c6e12864281ff476aa	no	3
Warnings:					
Information:					
2		0023_US_D1_Response_FOA_RCE_May_2013.pdf	72371 8eab4602190f1bccb7427a1c9880e160a073a40b	yes	14

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment Submitted/Entered with Filing of CPA/RCE	1	1
	Extension of Time	2	2
	Claims	3	9
	Applicant Arguments/Remarks Made in an Amendment	10	14

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32568 d7095ad159442f0a5ea8a72c682accd6d5abf672	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1041504		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/050,648	Filing Date 03/18/2008	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	05/13/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 23	Minus	** 23	= 0	X $80 =	0
	Independent (37 CFR 1.16(h))	* 7	Minus	***7	= 0	X $420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/PATSY ZIMMERMAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/SB/31 (09-12)
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NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD

Docket Number (Optional): 0023-US-D1

I hereby certify that this correspondence is being facsimile transmitted to the USPTO EFS-Web transmitted to the USPTO, or or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on ** via EFS-Web **

Signature _____

Typed or printed name _____

In re Application of: Michael Slocombe

Application Number	Filed
12/050,648	March 18, 2008

For: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

Art Unit	Examiner
2446	Kamal B. DIVECHA

Applicant hereby **appeals** to the Patent Trial and Appeal Board from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 630.00

☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ _____

☐ A check in the amount of the fee is enclosed.

☑ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 50-5063 .

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☑ attorney or agent of record. Registration number 58,259.

☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____

/JCS/
Signature

Jonathan C. Siekmann
Typed or printed name

720.888.2140
Telephone number

October 11, 2012
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal	
Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	0023-US-D1
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of appeal	1401	1	630	630
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**630**

Electronic Acknowledgement Receipt	
EFS ID:	13959871
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	11-OCT-2012
Filing Date:	18-MAR-2008
Time Stamp:	12:18:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$630
RAM confirmation Number	9705
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Notice of Appeal Filed	sb0031.pdf	229719 be6fcce4a8bff4c689d861a282ea1ae0b478f7a6	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30630 36f1ff4490126a2320e8ea688b1eeb2d0af5c43f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	260349		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

83579 7590 07/11/2012

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
DIVECHA, KAMAL B	
ART UNIT	PAPER NUMBER
2451	

NOTIFICATION DATE	DELIVERY MODE
07/11/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent.docketing@level3.com

Office Action Summary	Application No.	Applicant(s)	
	12/050,648	SLOCOMBE ET AL.	
	Examiner	Art Unit	
	KAMAL DIVECHA	2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2012*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-23* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-23* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Action is in response to communications filed 5/10/2012.

Claims 1-23 are pending in this application.

Claims 22-23 are newly added claims.

Response to Arguments

Applicant's arguments filed 2/18/2011 have been fully considered but they are not persuasive.

In the response filed, applicant argues in substance that:

a. Neither McCanne nor Goldzmidt tech or suggest (c1) causing the hostname to be resolved to the common anycast address by a DNS server associated with an Internet Service Provider and (c2) by one of said CDN DNS resolving said hostname to identify an IP address for use by the client to retrieve content from a content server (remarks, pg. 12-13).

In response to argument [a], Examiner disagrees.

McCanne, at [132-136] and [148-152], discloses:

[0132] 3.1.4. DNS-based Content Peering

[0133] The APAR routing system described above can be used to effect one kind of content peering based on specialized DNS servers, which we call herein a "APAR-DNS server". In this model, the APAR-DNS server is configured with one or more APAR anycast addresses and thus appears as a name server on one or more CDNs. In other words, the APAR-DNS server is typically a single piece of physical infrastructure, either owned by the ISP where the device is situated or owned by a third-party that co-locates the equipment in the ISP's network, that supports multiple virtual CDNs that are owned by third party content service providers, or perhaps, by other ISPs.

[0134] The CDN backbone then configures the DNS so that some subtree of the DNS namespace is authoritatively managed by the nameserver with an APAR anycast address. In other words, the namespace is managed by the federation of APAR-DNS servers that are configured with that anycast address and function as the authoritative name servers for the DNS subdomains in the subtree. This is accomplished by simply publishing the desired anycast address as a nameserver (NS) DNS resource record for the desired CDN sub-domain (see below).

[0135] In prior art, DNS servers map a finite set of configured names onto a finite set of host addresses. Extensive research and product development has generalized this model so that DNS may be used for various sorts of load balancing, Web content replication, and so forth, but in all of these approaches, the input is a name that must be known ahead of time and explicitly configured into the naming system.

[0136] Unlike this prior art, the APAR-DNS servers need not be configured with a set of known names that are to be mapped to a candidate set of addresses. Instead, APAR-DNS servers can map an unbounded set of arbitrary names, expressed in a fashion that encodes information about the content request, onto a set of address targets. The targets are configured into the APAR-DNS servers along with attributes that describe their capabilities, administrative constraints, and so forth. The configuration of targets and related attributes can be dynamically modified using an external protocol (an APAR-DNS management protocol).

[0137] In addition, policies are programmed into the APAR-DNS servers to control the mapping of named service requests onto targets. To properly load balance requests

First, the APAR-DNS servers are assigned common anycast address and appears as name server on one or more CDNs, which is owned by an ISP or by a third party.

The backbone then configures the DNS so that some subtree of the DNS namespace is authoritatively managed by the nameserver with an APAR anycast address. The APAR-DNs servers are authoritative name servers for the DNS subdomains in the subtree.

[0138] The APAR-DNS server programmatically maps a name-to-address translation request into a target by:

[0139] 1) parsing the name to determine the meta-information M related to that named service;

[0140] 2) finding the candidate set of targets in the configured database that match M;

[0141] 3) pruning the candidate set based on configured policy, server load measurements, and network path measurements;

[0142] 4) selecting a member of the final set based on additional policy;

[0143] 5) returning the selected address (or set of addresses) as a DNS A record to satisfy the DNS request (typically with a TTL of 0 so that the entry is used only once).

[0144] When using the above process, DNS names can be structured as follows:

[0145] <codepoint>. <provider>

[0146] where <codepoint> defines the meta-information M described above, and <provider> is the DNS sub-domain corresponding to the CDN network. The <codepoint> field conveys information such as application type (e.g., Web, G2 streaming video, stock quotes), the customer (e.g., Yahoo or ESPN), the size of the object, the class of the object, and so forth. This encoding scheme can be generalized in many ways that adheres to the proposed architecture. The <provider> field is simply the DNS sub-domain of the CDN network (e.g., cdn.acme.net). That is, names with the suffix cdn.acme.net are resolved by APAR-DNS servers that choose the most appropriate targets based on externally configured policies and dynamic network and server measurements. Thus, the name of a Web object owned by "ABC" and distributed over the "ACME Networks" CDN might have the structure:

[0147] ad102.web.abc.cdn.acme.net

[0148] To resolve this name, the DNS query mechanism would learn that cdn.acme.net is handled by an authoritative name server with some APAR anycast address, say N*. Then, when a client went to fetch an object referenced with this name, the DNS query for ad102. web.cdn.acme.net would be sent from that client to N*, causing the request to be routed to the nearest APAR-DNS server configured to handle requests for cdn.acme.net. For example, in FIG. 12, suppose N1*, N2*, and N3* are APAR-DNS servers configured with the APAR anycast address N*. Note that N3* advertises BGP APAR anycast routes (shown by the label N**). Client C1's DNS request is routed to N1*, while client C3's request is routed to N3*. C2, on the other hand, maybe routed to either N1* or N2* depending on whether the BGP route for N* from AS 200 favors AS 400 directly or AS 400 via AS 100, which can be administratively controlled with BGP routing policies.

When the request is received, the DNS query mechanism learns that the hostname is handled by an authoritative name server with some APAR anycast address N*, and the client's

request is then sent to N*, causing the request to be routed to the nearest APAR-DNS server configured to handle requests for cdn.acme.net hostname. The hostname is then resolved by the closest or nearest DNS server, see [018-0157].

As such, McCanne discloses both (c1) and (c2).

Applicant further asserts that "the examiner…the claims recite a step performed by an ISP DNS server…"

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., step performed by ISP DNS server) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The claims merely recite "DNS server associated with an ISP".

The term associated does not imply that the DNS server is owned by the ISP. It can mean that the DNS server is in communication or in link with the ISP.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 3/16/2011 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

Claim 18 is rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. It does not further limit claim 1 from which it depends because step (c3) is deleted from claim 1. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-9 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by McCanne (hereinafter McCanne, US 2005/0010653).

Referring to claim 1,

McCanne teaches a method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common

anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers (para. [0119], [0126]);

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname (para. [0119], [0120], [0123], [0126], [0132-136], [0148-0155]);

(C) responsive to a request for a content associated with the content provider and issued by a client, said request including at least hostname (para. [0132-136]),

(c1) causing said hostname to be resolved to said common anycast address by a DNS server associated with an Internet Service Provider(ISP) ([0132-136], [0148-0155]),

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and (para. [0148-158]).

Referring to claim 2,

McCanne teaches the method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs) (para. [0087], Fig. 16).

Referring to claim 3,

McCanne teaches the method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP (Fig. 13).

Referring to claim 4,

McCanne teaches the method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP) (Fig. 13).

Referring to claim 5,

McCanne teaches the method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster (Fig. 13; Goldszmidt: fig. 1a).

Referring to claim 6,

McCanne teaches the method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content (para. [0119], [0120], [0123], [0126]).

Referring to claim 7,

McCanne teaches the method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of said content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content (para. [0087], [0186]).

Referring to claim 8,

McCanne teaches the method as recited in claim 7 wherein, said content source is an origin server associated with said content provider (para. [0087], [0186],[0188]).

Referring to claim 9,

McCanne teaches the method as recited in claim 7 wherein, if a valid version of said content is not available on the content servers, the content servers uses a table to ascertain where to obtain the content (para. [0087], [0186],[0188]).

Referring to claim 23,

McCanne teaches a method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said DNS server sharing a common anycast address (0132-0136]), wherein each DNs server is associated with a respective plurality of content servers, wherein each DNS server and respective plurality of content servers is configured to support content delivery for a plurality of content providers (para. [0119-120], [0126]);

(B) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider, by a first DNS serve of plurality of DNS servers, resolving said first hostname to identify a first IP address of a content server of the plurality of content servers associated with the first DNS (para. [0119], [0120], [0122], [0126], [0132-0136, [0148-0158]),

(C) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least a second hostname associated with the second content provider (para. [0119], [0120], [0122], [0126]), by a second DNs server of said plurality of DNS servers, resolving said second hostname to identify a second IP address for retrieval of the second content from a second content server (para. [0119], [0120], [0122], [0126], [132-136], [0148-158]);

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 10-22 are rejected under **35 U.S.C. 103(a)** as being unpatentable over McCanne (hereinafter McCanne, US 2005/0010653) in view of Goldszmidt et al. (hereinafter Goldzmidt, US 6,195,680 B1).

Referring to claim 10,

McCanne teaches a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, wherein each DNS server is associated with a respective plurality of content servers (para. [0119], [0126]);

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith (para. [0120]);

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider (para. [0119], [0120], [0122], [0126]),

(c11) by one of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server (para. [0119], [0120], [0122]-, [0126]); and then

(c13) attempting to serve said first content from a server (para. [0119], [0120], [0122]-, [0126]); and

(C2) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least a second hostname associated with the second content provider (para. [0119], [0120], [0122]-, [0126]),

(c21) by one of said plurality of DNS servers, resolving said second hostname to identify a second IP address for retrieval of the second content from a second content server (para. [0119], [0120], [0122]-, [0126]);

(c23) attempting to serve said second content from a server (para. [0119], [0120], [0122]-, [0126]).

However, McCanne does not disclose by a switch associated with said resolving DNS server, selecting the content server from said respective plurality of content servers associated with the DNS server.

Goldszmidt discloses at least one switch selecting the content server from a cluster of content servers (fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify McCanne in view of Goldszmidt in order to have a switch select a content server from said plurality of content servers associated with said the DNS servers (for both step c11 and c21).

One of ordinary skilled in the art would have been motivated because it would have enabled load balancing in the cluster of servers (Goldszmidt: col. 4 L34-53: Good balance of server availability can be maintained, col. 9 L47-65: selecting using load balancing techniques).

Referring to claim 13,

McCanne-Goldszmidt teaches the method of claim 1 wherein selection of the content server is based on a load balancing (Goldzmidt: (fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 18, McCanne-Goldszmidt discloses the method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy (Goldszmidt: fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 19, McCanne-Goldszmidt discloses the method of claim 10, wherein the resolving DNS server of step (c11) is same as the resolving DNS server performing of step (c21) (para. [0119], [0120], [0122], [0126]).

As per claim 20, McCanne-Goldszmidt discloses the method of claim 19, wherein the switch of step (c12) is the same as the switch of step (c22) (Goldszmidt: fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 21, McCanne-Goldszmidt discloses the method of claim 19, wherein the first content server is the same as the second content server (para. [0119], [0120], [0122], [0126]).

As per claims 22, 11-12 and 14-17, they do not teach or further define over the limitations in claims 10 and 13. Therefore, claims 22, 11-12 and 14-17 are rejected for the same reasons as set forth in claims 10 and 13.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is (571)272-5863. The examiner can normally be reached on IFP (M-F: 10-6.30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN FOLLANSBEE can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KAMAL B DIVECHA/
Primary Examiner, Art Unit 2451

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	KAMAL B DIVECHA	2451

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009	03/11/2010	10/04/2010	11/03/2011					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13		✓	✓	✓					
	14		✓	✓	✓					
	15		✓	✓	✓					
	16			✓	✓					
	17			✓	✓					
	18			✓	✓					
	19			✓	✓					
	20			✓	✓					
	21			✓	✓					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant	:	Michael Slocombe, et al.	
Appln. No.	:	12/050,648	Confirmation No: 9055
Filed	:	March 18, 2008	Group Art Unit: 2449
Title	:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORK	Examiner: DIVECHA, KAMAL B Docket No. 0023-US-D1

AMENDMENT AND RESPONSE TO NON-FINAL OFFICE ACTION

Via EFS-Web
MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

In response to the Non-Final Office Action dated 11/10/2011, please amend this application as follows:

Extension of Time Request is found on page 2 of this paper.

A listing of the claims is found on page 3 of this paper.

Remarks/Arguments begin on page 10 of this paper.

Extension of Time

Applicant hereby petitions for a **three**-month extension of time and is electronically submitting the required fee with this correspondence. Other than this extension fee, Applicant believes no other Petitions or fees are necessary, but if this is incorrect, please consider this a Petition and authorization of payment therefor. The Commissioner is authorized to deduct any additional fees from or credit any over-payment to the undersigned's Deposit Account No. 50-5063.

The Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

1. (currently amended) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers;

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, said request including at least said hostname,

(c1) causing said hostname to be resolved to said common anycast address by a DNS server associated with an Internet Service Provider (ISP); and then,

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server~~; and~~

~~(c3) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS~~.

2. (Previously Presented) The method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs).

3. (Previously Presented) The method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP.

4. (Original) The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. (Previously Presented) The method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster.

6. (Previously Presented) The method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content.

7. (Previously Presented) The method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of the content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content.

8. (Original) The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. (Previously Presented) The method as recited in claim 7 wherein, if a valid version of the content is not available on the content server, the content server uses a table to ascertain where to obtain the content.

10. (Currently Amended) A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers;

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith;

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider,

(c11) by a first DNS server ~~one~~ of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server of said content servers associated with said first DNS server;

(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11); and

(c13) attempting to serve said first content from the first content server; and

(C2) responsive to a second request for said first ~~second~~ content associated with said first ~~a second~~ content provider of said plurality of content providers, said second request including at least ~~a second~~ the first hostname associated with the ~~second~~ first content provider,

(c21) by a second DNS server ~~one~~ of said plurality of DNS servers, resolving said ~~second~~ first hostname to identify a second IP address for retrieval of the ~~second~~ first content from a ~~second~~ content server associated with the second DNS server;

(c22) by a switch associated with said resolving DNS server of step (c21), selecting the second content server from said respective plurality of content servers associated with the DNS server of step (c21); and

(c23) attempting to serve said second content from the second content server.

11. (Previously Presented) A content delivery system for delivering content on behalf of a plurality of content providers, each of said plurality of content providers having a hostname associated therewith, the system comprising:

(A) a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, said plurality of DNS servers being authoritative for said hostnames associated with said plurality of content providers;

(B) a set of content servers associated with each DNS server, each set comprising at least a plurality of content servers; and

(C) at least one switch associated with each set of content servers, wherein

(D) responsive to a request to resolve a hostname associated with a particular content provider of said plurality of content providers, said request being associated with an end-user request for content of said particular content provider, one of said plurality of DNS servers is operable to resolve said hostname to identify an IP address for use by the end-user to retrieve the content from a content server,

(E) the at least one switch associated with the set of content servers of the resolving DNS server is operable to perform load balancing to select the content server from the set of content servers associated with the resolving DNS server, and

(F) the content server is operable to serve the content to the end-user.

12. (Previously Presented) A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, each DNS server being associated with a respective plurality of content servers, wherein at least some of said plurality of content servers are located at network Points of Presence (POPs);

(B) causing said plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider by a client, said request including at least said,

(c1) by one of said plurality of DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving DNS server.

(D) by the content server,

(d1) attempting to serve the content by:

(d11) if a valid version of the content is available on the content server, serving the content; otherwise

(d12) obtaining the content from a content source and then serving the content.

13. (Previously Presented) The method as recited in claim 1, wherein selection of the content server is based on a load balancing policy.

14. (Previously Presented) The method as recited in claim 10, wherein selection of at least one of the first content server and the second content server is based on a load balancing policy.

15. (Previously Presented) The method as recited in claim 12, wherein selection of the content server is based on a load balancing policy.

16. (Previously Presented) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), the plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a set of content servers, each set comprising at least a plurality of content servers;

(B) causing the plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname,

(c1) by one of the plurality of DNS servers, resolving the hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch associated with the set of content servers of the resolving DNS server, selecting the content server from the set of content servers associated with the resolving DNS server.

17. (Previously Presented) A content delivery system comprising a plurality of nodes, wherein each node comprises:

a Domain Name System (DNS) server sharing an anycast address with DNS servers in other nodes of the content delivery system, wherein the DNS server is authoritative for hostnames associated with a plurality of content providers;

a plurality of content servers; and

at least one switch, wherein

responsive to a request by a client for content associated with a particular content provider of the plurality of content providers, the request including at least a hostname associated with the particular content provider, the DNS server is operable to resolve the hostname to identify an IP address for use by the client to retrieve the content from a content server,

the at least one switch is operable to select the content server from the plurality of content servers, and

the content server is operable to serve the content to the client.

18. (Previously Presented) The method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy.

19. (Previously Presented) The method as recited in claim 10, wherein the resolving DNS server of step (c11) is the same as the resolving DNS server performing of step (c21).

20. (Previously Presented) The method as recited in claim 19, wherein the switch of step (c12) is the same as the switch of step (c22).

21. (Previously Presented) The method as recited in claim 19, wherein the first content server is the same as the second content server.

22. (New) The method of claim 1 further comprising:
(c3) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

23. (NEW) A method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers, wherein each DNS server and respective plurality of content servers is configured to support content delivery for a plurality of content providers;

(B) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider, by a first DNS server of said plurality of DNS servers, resolving said first hostname to identify a first IP address of a content server of the plurality of content servers associated with said first DNS server; and

(C) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least said first hostname associated with the first content provider, by a second DNS server of said plurality of DNS servers, resolving said first hostname to identify a second IP address associated with a content server of the plurality of content servers associated with the second DNS server.

Remarks

This Response is responsive to the Non-Final Office Action mailed November 10, 2011 (the "Office Action"). Claims 1-23 are pending in the application and stand rejected.

By this response claims 1 and 10 have been amended and new claims 22-23 have been added. No new matter has been added by these amendments.

Reconsideration and allowance of the claims are respectfully requested.

Information Disclosure Statement

The Examiner indicated that the information disclosure statement (IDS) filed 3/16/2011 failed to comply with 37 CFR 1.98(a)(2). It has been placed in the application file, but the information referred to therein has not been considered. In this case, a legible copy of WO-2002/071720A1 is not provided.

The present application relies on prior application no. 09/982,721, filed Oct. 18, 2001, for an earlier effective filing date under 35 U.S.C. § 120. The IDS of 3/16/2011 included the statement:

> Copies of all of the cited documents:
>
> ☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.
>
> ☒ have been previously furnished to the Office in prior application No. 09/982,721, filed October 18, 2001, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

Document WO-2002/071720A1 was cited by the Office in earlier application no. 09/982,721 (see Form PTO/892, Notice of References Cited, Part of Paper No. 20090316 in application no. 09/982,721), and therefore, under 37 CFR 1.98(d), no copy of that document was required with the IDS of 03/16/2011.

The Examiner is respectfully requested to consider the cited reference WO-2002/071720A1 and to initial the form 1449 to indicate such consideration. For the Examiner's convenience a copy of the earlier filed form 1449 is provided herewith.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-21 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Publication No. 2005/0010653 to McCanne ("**McCanne**") in view of U.S. Patent No. 6,195,680 to Goldzmidt et al. ("**Goldzmidt**"). Applicant respectfully traverses the rejection for at least the following reasons.

This invention, as recited in claim 1, is a method of content delivery in a network. The method includes providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN). For the sake of this description these DNS servers are referred to as CDN DNS servers. As further recited in claim 1, the plurality of CDN DNS servers share a common anycast address. Additionally, each CDN DNS server is associated with a respective plurality of content servers.

Claim 1 further recites causing the plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname.

As further recited in claim 1, responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname, the method includes: (c1) causing the hostname to be resolved to the common anycast address by a DNS server associated with an Internet Service Provider (ISP); and then (c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server.

Thus, using the invention of claim 1, in response to a request associated with a content provider (the request including a hostname), the hostname is resolved to the common anycast address by an ISP DNS and then to an IP address for one of the content servers by one of the CDN DNS servers.

Neither McCanne nor Goldzmidt, alone or in any proposed combination, teach or in any way suggest the method of claim 1, including (c1) causing the hostname to be resolved to the common anycast address by a DNS server associated with an Internet Service Provider (ISP); and (c2) by one of said plurality of CDN DNS servers, resolving

said hostname to identify an IP address for use by the client to retrieve the content from a content server.

The Examiner states:

> McCanne discloses various redirection techniques. One of the redirection technique utilizes the DNS server which is configured with the anycast address, wherein when the DNS server receives a request to resolve a hostname, it returns the IP address or set of IP adresses to the requesting client, e.g. pg. 9-10 [0136-0143]. The requesting client then sends a request to the IP address.

Office Action, pg. 3.

But the Examiner has not shown any teaching in McCanne of steps (c1) and (c2). Notably, on page 6 of the Office Action, the Examiner provides no citation to McCanne for step (c1). The Examiner has ignored the fact that the claims recite a step performed by an ISP DNS server (step (c1)) and a step performed by a CDN DNS server (step (c2)). This is because there is no such teaching in McCanne.

Goldzmidt does not overcome the deficiencies in McCanne.

For at least these reasons claim 1 and its dependents are patentable over McCanne and Goldzmidt.

Claim 10 recites a "plurality of DNS servers sharing a common anycast address." As a consequence, DNS name resolution of the same hostname (associated with a content provider) may use different ones of the CDN DNS servers. Claim 10 has been amended to clarify this that a first resolution request may use a first CDN DNS server and a second name resolution request for the same hostname may use a second CDN DNS server. Different requests for the same content from the same content provider may be resolved by different ones of the CDN DNS servers.

This feature is neither taught nor in any way suggested by McCanne, alone or in any proposed combination with Goldzmidt.

Similar arguments apply to the other claims. E.g., claim 11 recites "plurality of DNS servers sharing a common anycast address."

In view of the above withdrawal of these rejections under Section 103 is respectfully requested.

Conclusion

Applicant respectfully submits that this application is in condition for allowance, and an early action allowing the claims is earnestly solicited.

Should the Examiner believe that a telephone call will resolve any outstanding issues in this case, he is invited to telephone the undersigned at the number provided.

CHARGE STATEMENT: Deposit Account No. 501860, order no. **2711-0193**.
The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficiencies only) now or hereafter relative to this application and the resulting Official Document under Rule 20, or credit any overpayment, to our Accounting/Order Nos. shown above, for which purpose a duplicate copy of this sheet is attached **This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal sheet is filed.**

CUSTOMER NUMBER

83579

Respectfully submitted,

/Brian Siritzky/Reg. No. 37,497

By:_____

Brian Siritzky, Ph.D.
Registration No.: 37,497

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Electronic Patent Application Fee Transmittal

Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	Brian Siritzky
Attorney Docket Number:	0023-US-D1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	1202	2	60	120
Independent claims in excess of 3	1201	1	250	250
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Extension - 3 months with $0 paid	1253	1	1270	1270
Miscellaneous:				
		Total in USD ($)		**1640**

Electronic Acknowledgement Receipt	
EFS ID:	12751796
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	Brian Siritzky
Filer Authorized By:	
Attorney Docket Number:	0023-US-D1
Receipt Date:	10-MAY-2012
Filing Date:	18-MAR-2008
Time Stamp:	17:09:45
Application Type:	Utility under 35 USC 111(a)

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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		D23-amd.pdf	170356 72287f0b38c6db54a5e706a51ae906248963895f	yes	14

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Extension of Time	2	2
	Claims	3	10
	Applicant Arguments/Remarks Made in an Amendment	11	14

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	33895 28b1ec9dc573b8f97e474c1c8f9e7a5fa80de089	no	2

Warnings:

Information:

Total Files Size (in bytes):	204251

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/050,648	Filing Date 03/18/2008	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	05/10/2012	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 23	Minus	** 23	= 0	X $ =		OR	X $60=	0
	Independent (37 CFR 1.16(h))	* 7	Minus	***6	= 1	X $ =		OR	X $250=	250
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	**250**

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/KIM DOWNING/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

83579 7590 11/10/2011

LEVEL 3 COMMUNICATIONS, LLC
c/o CPA Global
P.O. Box 52050
Minneapolis, MN 55402

EXAMINER	
DIVECHA, KAMAL B	
ART UNIT	**PAPER NUMBER**
2451	

NOTIFICATION DATE	DELIVERY MODE
11/10/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@cpaglobal.com

Office Action Summary	Application No.	Applicant(s)	
	12/050,648	SLOCOMBE ET AL.	
	Examiner	Art Unit	
	KAMAL DIVECHA	2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-21* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-21* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/16/2011, 6/14/2011*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Action is in response to communications filed 2/18/2011.

Claims 1-21 are pending in this application.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/18/2011 has been entered.

Response to Arguments

Applicant's arguments filed 2/18/2011 have been fully considered but they are not persuasive.

In the response filed, applicant argues in substance that:

a. One of ordinary skilled in the art would not be motivated to combine the control server functionality of Goldzmidt with the APAR-CDRS system of McCanne (remarks, pg. 11-12).

In response to argument [a], Examiner respectfully disagrees.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where

there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

In this case, McCanne discloses various redirection techniques. One of the redirection technique utilizes the DNS server which is configured with the anycast address, wherein when the DNS server receives a request to resolve a hostname, it returns the IP address or set of IP adresses to the requesting client, e.g. pg. 9-10 [0136-0143]. The requesting client then sends a request to the IP address.

In the cluster configuration, generally, one or more servers may be used and are represented by an IP address being shared by the one or more servers.

Goldsmidt discloses such a configuration, e.g. fig. 1, fig. 4. The control server after receiving a request from a user or client, selects one of the server from a cluster based on some policy and sends the request to the selected server.

Therefore, when the client in McCanne sends a request utilizing the resolves IP address to the content server, the content server may comprise a cluster as in Goldzmidt. Thus, when the control server receives the request, it must select one node from the cluster based on some policy in order to respond to the request.

One of ordinary skilled in the art would have been motivated because it would have enabled load balancing in the cluster of servers (Goldszmidt: col. 4 L34-53: Good balance of server availability can be maintained, col. 9 L47-65: selecting using load balancing techniques).

In other words, if and when the resolved IP address corresponds to a cluster of nodes comprising two or more servers, it would be beneficial to select one server or node from the cluster based on load balancing policy in order to distribute the load throughout the cluster in order to respond to the user's request.

Applicant is merely focusing on one of the techniques McCanne has disclosed for redirection.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 6/14/2011 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The information disclosure statement filed 3/16/2011 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. In this case, a legible copy of WO-2002/071720A1 is not provided.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1-21 are rejected under **35 U.S.C. 103(a)** as being unpatentable over McCanne (hereinafter McCanne, US 2005/0010653) in view of Goldszmidt et al. (hereinafter Goldzmidt, US 6,195,680 B1).

Referring to claim 1,

McCanne teaches a method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers (para. [0119], [0126]);

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname (para. [0119], [0120], [0123], [0126]);

(C) responsive to a request for a content associated with the content provider and issued by a client, said request including at least hostname (para. [0133]),

(c1) causing said hostname to be resolved to said common anycast address by a DNS server associated with an Internet Service Provider(ISP),

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and (para. [0148]).

However, McCanne does not disclose by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

Goldszmidt discloses at least one switch selecting the content server from a cluster of content servers (fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify McCanne in view of Goldszmidt in order to have a switch select a content server from said plurality of content servers associated with said resolving CDN DNS.

One of ordinary skilled in the art would have been motivated because it would have enabled load balancing in the cluster of servers (Goldszmidt: col. 4 L34-53: Good balance of server availability can be maintained, col. 9 L47-65: selecting using load balancing techniques).

Referring to claim 2,

McCanne teaches the method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs) (para. [0087], Fig. 16).

Referring to claim 3,

McCanne teaches the method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP (Fig. 13).

Referring to claim 4,

McCanne teaches the method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP) (Fig. 13).

Referring to claim 5,

McCanne teaches the method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster (Fig. 13; Goldszmidt: fig. 1a).

Referring to claim 6,

McCanne teaches the method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content (para. [0119], [0120], [0123], [0126]).

Referring to claim 7,

McCanne teaches the method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of said content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content (para. [0087], [0186]).

Referring to claim 8,

McCanne teaches the method as recited in claim 7 wherein, said content source is an origin server associated with said content provider (para. [0087], [0186],[0188]).

Referring to claim 9,

McCanne teaches the method as recited in claim 7 wherein, if a valid version of said content is not available on the content servers, the content servers uses a table to ascertain where to obtain the content (para. [0087], [0186],[0188]).

Referring to claim 10,

McCanne teaches a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, wherein each DNS server is associated with a respective plurality of content servers (para. [0119], [0126]);

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith (para. [0120]);

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider (para. [0119], [0120], [0122], [0126]),

(c11) by one of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server (para. [0119], [0120], [0122]-, [0126]); and then

(c13) attempting to serve said first content from a server (para. [0119], [0120], [0122]-, [0126]); and

(C2) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least a second hostname associated with the second content provider (para. [0119], [0120], [0122]-, [0126]),

(c21) by one of said plurality of DNS servers, resolving said second hostname to identify a second IP address for retrieval of the second content from a second content server (para. [0119], [0120], [0122]-, [0126]);

(c23) attempting to serve said second content from a server (para. [0119], [0120], [0122]-, [0126]).

However, McCanne does not disclose by a switch associated with said resolving DNS server, selecting the content server from said respective plurality of content servers associated with the DNS server.

Goldszmidt discloses at least one switch selecting the content server from a cluster of content servers (fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify McCanne in view of Goldszmidt in order to have a switch select a content server from said plurality of content servers associated with said the DNS servers (for both step c11 and c21).

One of ordinary skilled in the art would have been motivated because it would have enabled load balancing in the cluster of servers (Goldszmidt: col. 4 L34-53: Good balance of server availability can be maintained, col. 9 L47-65: selecting using load balancing techniques).

Referring to claim 13,

McCanne-Goldszmidt teaches the method of claim 1 wherein selection of the content server is based on a load balancing (Goldzmidt: (fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 18, McCanne-Goldszmidt discloses the method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy (Goldszmidt: fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 19, McCanne-Goldszmidt discloses the method of claim 10, wherein the resolving DNS server of step (c11) is same as the resolving DNS server performing of step (c21) (para. [0119], [0120], [0122], [0126]).

As per claim 20, McCanne-Goldszmidt discloses the method of claim 19, wherein the switch of step (c12) is the same as the switch of step (c22) (Goldszmidt: fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 21, McCanne-Goldszmidt discloses the method of claim 19, wherein the first content server is the same as the second content server (para. [0119], [0120], [0122], [0126]).

As per claims 11-12 and 14-17, they do not teach or further define over the limitations in claims 1-10 and 13. Therefore, claims 11-12 and 14-17 are rejected for the same reasons as set forth in claims 1-10 and 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is (571)272-5863. The examiner can normally be reached on IFP (M-F: 10-6.30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN FOLLANSBEE can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KAMAL B DIVECHA/
Primary Examiner, Art Unit 2451

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	**Art Unit**
	KAMAL B DIVECHA	2451

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009	03/11/2010	10/04/2010	11/03/2011					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13		✓	✓	✓					
	14		✓	✓	✓					
	15		✓	✓	✓					
	16			✓	✓					
	17			✓	✓					
	18			✓	✓					
	19			✓	✓					
	20			✓	✓					
	21			✓	✓					

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

	Complete if Known
Application Number	12/050,648
Filing Date	Mar 18, 2008
First Named Inventor	Michael Slocombe
Art Unit	2451
Examiner Name	Kamal B. Divecha

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		6614757B1	Sep 2, 2003	Rochberger, H et al.	
		6785704B1	Aug 31, 2004	Mccanne, S	
		7136374B1	Nov 14, 2006	Kompella, K	
		7286479B2	Oct 23, 2007	Bragg, N et al.	
		7343422B2	Mar 11, 2008	Garcia-Luna-Aceves, J. J., et al.	
		7734730B2	Jun 8, 2010	Mccanne, S	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]
		~~WO 2002/071720A1~~	~~Sep 12, 2002~~	~~RAJAHALME, J.~~		

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

EXAMINER /Kamal Divecha/ **DATE CONSIDERED** 11/04/2011

Substitute Disclosure Statement Form (PTO-1449)
[1] EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional) [2] Applicant is to place a check mark here if English language Translation is attached

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.D./

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

Complete if Known	
Application Number	12/050,648
Filing Date	Mar 18, 2008
First Named Inventor	Michael Slocombe
Art Unit	2451
Examiner Name	Kamal B. Divecha

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20020021675A1	Feb 21, 2002	Feldmann, Anja	
		6938095B2	Aug 30, 2005	Basturk, Erol et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

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EXAMINER	/Kamal Divecha/	DATE CONSIDERED	11/04/2011

Substitute Disclosure Statement Form (PTO-1449)
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.D./

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/050,648
Filing Date	Mar 18, 2008
First Named Inventor	Michael Slocombe
Art Unit	2451
Examiner Name	Kamal B. Divecha

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

US PATENT DOCUMENTS					
Examiner Initial *	**Cite No**	**Document Number**	**Publication Date**	**Name of Patentee or Applicant of Cited Document**	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20020021675A1	Feb 21, 2002	Feldmann, Anja	
		6938095B2	Aug 30, 2005	Basturk, Erol et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	**Cite No**	**Foreign Patent Document**	**Publication Date**	**Name of Patentee or Applicant of cited Document**	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T^2

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	**Cite No [1]**	**Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.**	T^2

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
` EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Electronic Acknowledgement Receipt	
EFS ID:	10295906
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	14-JUN-2011
Filing Date:	18-MAR-2008
Time Stamp:	10:35:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	23_US_D1_Supp_IDS.pdf	35818 75bef60440a256e2189f337e0cefb3a8fefb5b80	no	5
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Form (SB08)	23_US_D1_SB08.pdf	27214 291a87b11f4333d92daf2e3dda72a677967e00c6	no	1

Warnings:	
Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	63032

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/050,648	Confirmation No.	:	9055
First Applicant	:	SLOCOMBE et al.	Art Unit	:	2451
Filed	:	March 18, 2008	Examiner	:	Kamal B. Divecha
Title	:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS			
Docket No.	:	0023-US-D1			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☒ No fee is due.

☐ The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☐ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: June 14, 2011

/JCS/

Jonathan C. Siekmann
Registration No. 58,259
USPTO Customer No. 83579
Level 3 Communications, LLC
1025 Eldorado Blvd.
Broomfield, Colorado 80021
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Fax: 720-888-5619

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/050,648
Filing Date	Mar 18, 2008
First Named Inventor	Michael Slocombe
Art Unit	2451
Examiner Name	Kamal B. Divecha

Sheet	1	of	1	Attorney Docket No: 0023-US-D1

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		6614757B1	Sep 2, 2003	Rochberger, H et al.	
		6785704B1	Aug 31, 2004	Mccanne, S	
		7136374B1	Nov 14, 2006	Kompella, K	
		7286479B2	Oct 23, 2007	Bragg, N et al.	
		7343422B2	Mar 11, 2008	Garcia-Luna-Aceves, J. J., et al.	
		7734730B2	Jun 8, 2010	Mccanne, S	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]
		WO-2002/071720A1	Sep 12, 2002	RAJAHALME, J.		

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
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Electronic Acknowledgement Receipt

EFS ID:	9668344
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	16-MAR-2011
Filing Date:	18-MAR-2008
Time Stamp:	11:00:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	23_US_D1_IDS.pdf	35844 9e82d9e1b37f8a30fa29768e5c93d01c449ba310	no	5

Warnings:	
Information:	

2	Information Disclosure Statement (IDS) Filed (SB/08)	23_US_D1_SB08.pdf	28250 f45e1a5fd5bf5cf4489d82222f5fd3963d5bda57	no	1

Warnings:	
Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	64094

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/050,648	Confirmation No.	:	9055
First Applicant	:	SLOCOMBE et al.	Art Unit	:	2451
Filed	:	March 18, 2008	Examiner	:	Kamal B. Divecha
Title	:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS			
Docket No.	:	0023-US-D1			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☒ have been previously furnished to the Office in prior application No. 09/982,721, filed October 18, 2001, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☐ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☒ No fee is due.

☐ The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☐ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: March 16, 2011

/JCS/

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PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	12/050,648	Filing Date	2008-03-18	Docket Number (if applicable)	0023-US-D1	Art Unit	2449
First Named Inventor	Michael Slocombe			Examiner Name	Ashokkumar B. PATEL		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 505063

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/JCS/	Date (YYYY-MM-DD)	2011-02-18
Name	Jonathan C. Siekmann	Registration Number	58259

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant	: Michael Slocombe, et al.	
Appln. No.	: 12/050,648	Confirmation No: 9055
Filed	: March 18, 2008	Group Art Unit: 2449
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORK	Examiner: Ashokkumar B. Patel Docket No. 0023-US-D1

AMENDMENT AND RESPONSE TO OFFICE ACTION

Via EFS-Web
MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Final Office Action dated October 18, 2010, please enter the following amendments and remarks, filed concurrently with a Request for Continued Examination:

Extension of Time Request is found on page 2 of this paper.

A listing of the claims is found on page 3 of this paper.

Remarks/Arguments begin on page 10 of this paper.

Extension of Time

Applicant hereby petitions for a **one**-month extension of time and is electronically submitting the required fee with this correspondence. Other than this extension fee, Applicant believes no other Petitions or fees are necessary, but if this is incorrect, please consider this a Petition and authorization of payment therefor. The Commissioner is authorized to deduct any additional fees from or credit any over-payment to the undersigned's Deposit Account No. 50-5063.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously Presented) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers;

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, said request including at least said hostname,

(c1) causing said hostname to be resolved to said common anycast address by a DNS server associated with an Internet Service Provider (ISP);

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c3) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

2. (Previously Presented) The method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs).

3. (Previously Presented) The method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP.

4. (Original) The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. (Previously Presented) The method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster.

6. (Previously Presented) The method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content.

7. (Previously Presented) The method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of the content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content.

8. (Original) The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. (Previously Presented) The method as recited in claim 7 wherein, if a valid version of the content is not available on the content server, the content server uses a table to ascertain where to obtain the content.

10. (Previously Presented) A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers;

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith;

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider,

(c11) by one of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server;

(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11); and

(c13) attempting to serve said first content from the first content server; and

(C2) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least a second hostname associated with the second content provider,

(c21) by one of said plurality of DNS servers, resolving said second hostname to identify a second IP address for retrieval of the second content from a second content server;

(c22) by a switch associated with said resolving DNS server of step (c21), selecting the second content server from said respective plurality of content servers associated with the DNS server of step (c21); and

(c23) attempting to serve said second content from the second content server.

11. (Previously Presented) A content delivery system for delivering content on behalf of a plurality of content providers, each of said plurality of content providers having a hostname associated therewith, the system comprising:

(A) a plurality of Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, said plurality of DNS servers being authoritative for said hostnames associated with said plurality of content providers;

(B) a set of content servers associated with each DNS server, each set comprising at least a plurality of content servers; and

(C) at least one switch associated with each set of content servers, wherein

(D) responsive to a request to resolve a hostname associated with a particular content provider of said plurality of content providers, said request being associated with an end-user request for content of said particular content provider, one of said plurality of DNS servers is operable to resolve said hostname to identify an IP address for use by the end-user to retrieve the content from a content server,

(E) the at least one switch associated with the set of content servers of the resolving DNS server is operable to perform load balancing to select the content server from the set of content servers associated with the resolving DNS server, and

(F) the content server is operable to serve the content to the end-user.

12. (Previously Presented) A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said plurality of DNS servers sharing a common anycast address, each DNS server being associated with a respective plurality of content servers, wherein at least some of said plurality of content servers are located at network Points of Presence (POPs);

(B) causing said plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname;

(C) responsive to a request for content associated with the content provider by a client, said request including at least said,

(c1) by one of said plurality of DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving DNS server.

(D) by the content server,

(d1) attempting to serve the content by:

(d11) if a valid version of the content is available on the content server, serving the content; otherwise

(d12) obtaining the content from a content source and then serving the content.

13. (Currently Amended) The method as recited in claim 1, wherein selection of the content server is based on a load balancing policy. ~~the step of (c3) further comprises:~~

~~determining a load metric for each of said respective plurality of content servers associated with said resolving CDN DNS;~~

~~comparing each load metric to a predefined overload threshold; and~~

~~performing load balancing among said respective plurality of content servers if at least one load metric exceeds the overload threshold.~~

14. (Currently Amended) The method as recited in claim 10, wherein selection of at least one of the first content server and the second content server is based on a load balancing policy. ~~the step of (c12) further comprises:~~

~~determining a first load metric for each of said respective plurality of content servers associated with said resolving DNS server of step (c11);~~

~~comparing the first load metric to a first overload threshold; and~~

~~performing load balancing among said respective plurality of content servers associated with said resolving DNS server of step (c11) if at least one of the first load metrics exceeds the first overload threshold,~~

~~and wherein the step of (c22) further comprises:~~

~~determining a second load metric for each of said respective plurality of content servers associated with said resolving DNS server of step (c21);~~

~~comparing the second load metric to a second overload threshold; and~~

~~performing load balancing among said respective plurality of content servers associated with said resolving DNS server of step (c21) if at least one of the second load metrics exceeds the second overload threshold.~~

15. (Currently Amended) The method as recited in claim 12, wherein selection of the content server is based on a load balancing policy. ~~the step of (c2) further comprises:~~

~~determining a load metric for each of the respective plurality of content servers associated with the resolving DNS server;~~

~~comparing each load metric to a predefined overload threshold; and~~

~~if a load metric exceeds the overload threshold, performing load balancing on the respective plurality of content servers.~~

16. (Previously Presented) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), the plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a set of content servers, each set comprising at least a plurality of content servers;

(B) causing the plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname,

(c1) by one of the plurality of DNS servers, resolving the hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch associated with the set of content servers of the resolving DNS server, selecting the content server from the set of content servers associated with the resolving DNS server.

17. (Previously Presented) A content delivery system comprising a plurality of nodes, wherein each node comprises:

a Domain Name System (DNS) server sharing an anycast address with DNS servers in other nodes of the content delivery system, wherein the DNS server is authoritative for hostnames associated with a plurality of content providers;

a plurality of content servers; and

at least one switch, wherein

responsive to a request by a client for content associated with a particular content provider of the plurality of content providers, the request including at least a hostname associated with the particular content provider, the DNS server is operable to resolve the hostname to identify an IP address for use by the client to retrieve the content from a content server,

the at least one switch is operable to select the content server from the plurality of content servers, and

the content server is operable to serve the content to the client.

18. (Previously Presented) The method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy.

19. (Previously Presented) The method as recited in claim 10, wherein the resolving DNS server of step (c11) is the same as the resolving DNS server performing of step (c21).

20. (Previously Presented) The method as recited in claim 19, wherein the switch of step (c12) is the same as the switch of step (c22).

21. (Previously Presented) The method as recited in claim 19, wherein the first content server is the same as the second content server.

Remarks

This Response is responsive to the Final Office Action mailed October 18, 2010 (the "Office Action"). Claims 1-21 are pending in the application and stand rejected. In this Response, claims 13-15 have been amended, no claims have been cancelled, and no claims have been added. Reexamination and reconsideration of the claims are respectfully requested.

Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 13-16 stand rejected under 35 U.S.C. §112, first paragraph, as purportedly failing to comply with the written description requirement. Although Applicant believes this rejection to be unmerited, claims 13-15 have been amended to expedite prosecution to allowance. Applicant believes claims 13-15, as amended, and claim 16 are in compliance with 35 U.S.C. §112, first paragraph, and withdrawal of the rejection is respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-12 and 16-21 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Publication No. 2005/0010653 to McCanne ("McCanne") in view of U.S. Patent No. 6,195,680 to Goldzmidt et al. ("Goldzmidt"). Applicant respectfully traverses the rejection for at least the following reasons.

The McCanne Reference

Applicant agrees with the Examiner's concession of page 5 of the Office Action that, with respect to claim 1, "McCanne does not disclose by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS."

McCanne generally discloses a content distribution system that employs Administratively Provisioned Interdomain Anycast Routing "APAR" (e.g., see paragraphs [0110]-[0190]) used in combination with a Client-Driven Service Rendezvous "CDSR" architecture (e.g., see paragraphs [0191]-[0217]). In order to transition to a system that can implement APAR and CDSR, McCanne discloses various configurations for providing a staged deployment (e.g., see [0218]-[0238]). In particular, the following paragraphs of McCanne illustrate such a staged deployment:

[0219] "One of the challenges facing the deployment of client-driven service rendezvous is the changes that must be made to the existing base of applications (i.e., Web browsers and streaming media clients) and the propagation of those changes into the active user community. Clearly, this transition cannot occur all at once and instead must progress gradually over time as vendors integrate such a capability into their applications and users upgrade their software. **Thus, the system must be able to support a mixture of legacy applications alongside the new CDSR capable applications.**"

[0220] "Fortunately, a staged deployment of CDSR capabilities is possible through a novel combination of CDSR redirection and explicit redirection. In this scheme, **CDSR redirectors are deployed in parallel with explicit redirectors and URLs are structured so that they work effectively under either scenario.** There are a number of possible ways to structure this coexistence and it would be obvious to an expert in the art how the schemes described herein could be combined to perform this sort of staged deployment."

[0226] "A similar strategy can be adopted for other types of protocols and applications like Web browsers. In this case, **an HTTP redirection agent runs in parallel to a CDSR redirector running on the APAR anycast-addressed device**..."

(emphasis added)

As can be distilled from the above paragraphs, McCanne's staged deployment contemplates scenarios in which an HTTP redirection agent (running in parallel to a CDSR redirector) handles conventional HTTP requests from legacy applications. In paragraph [0233], McCanne discloses a particular configuration wherein "the HTTP redirection agent is replaced with a Web server..." and "[t]o scale this configuration, *the Web server may optionally be load-balanced with a layer 4 switch.*" (emphasis added) Then, in paragraphs [0234]-[0237], McCanne further indicates that legacy Web browser clients (i.e., unaware of CDSR redirection) can retrieve content directly from the Web server residing above the switch (e.g., see FIG. 21). However, if a CDSR-aware client transmits a service request packet, the switch would then route the packet to the CDSR redirector for further processing (e.g., see paragraph [0237]).

In summary, McCanne contemplates using a layer 4 switch only in a transitional or staged deployment scenario. In other words, use of a layer 4 switch in McCanne is merely to load balance among Web servers in response to conventional HTTP requests from legacy client-side applications. Otherwise, the layer 4 switch passes off the more sophisticated APAR-CDSR service request packets to a CDSR redirector. Therefore, other than providing support for legacy

applications and conventional HTTP requests, a layer 4 switch is not useful in McCanne's suggested APAR-CDSR architecture.

The Goldzmidt Reference

Goldzmidt generally discloses a client-based system that provides fault tolerance and load balancing for real-time data streaming (e.g., see Abstract). In particular, a control server can distribute client requests among servers in a cluster of servers (e.g., see FIG. 1(a) and col. 4, lines 54-65).

McCanne modified in view of Goldzmidt

Assuming, *arguendo*, that one of ordinary skill in the art would be motivated to combine the control server functionality of Goldzmidt with the APAR-CDSR system of McCanne, such a motivation would only be considered for augmenting the layer 4 switch functionality used in McCanne's staged deployment scenario. As previously discussed, McCanne's contemplated use of a layer 4 switch is merely to support legacy client-side applications and conventional HTTP requests while transitioning to an APAR-CDSR based system. Thus, other than for providing legacy support during a transitional phase, one of ordinary skill in the art would not be motivated to combine the control server functionality of Goldzmidt with the APAR-CDSR system of McCanne.

Therefore, as the combination of McCanne and Goldzmidt is improper in view of the present application and pending claims, the Office Action has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a). Accordingly, claim 1 and any dependents therefrom are in condition for allowance. Likewise, as independent claims 10, 11, 12, 16, and 17 contain the same or similar limitations as claim 1, these claims (and any dependents therefrom) are also in condition for allowance. Reconsideration and withdrawal of the rejections of claims 1-21 are respectfully requested.

Conclusion

Claims 1-21 are currently pending in the application. Applicant believes that all pending claims are in condition for allowance. Applicant therefore requests that a timely Notice of Allowance be issued in this case.

If the Examiner should require any additional information or believes any issues could be resolved via a telephone interview, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: February 18, 2011

/JCS/

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Electronic Patent Application Fee Transmittal

Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	0023-US-D1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	130	130

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**940**

Electronic Acknowledgement Receipt	
EFS ID:	9482075
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	18-FEB-2011
Filing Date:	18-MAR-2008
Time Stamp:	19:04:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$940
RAM confirmation Number	5332
Deposit Account	505063
Authorized User	SIEKMANN,JONATHAN
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1	Request for Continued Examination (RCE)	RCE_Transmittal.pdf	768746 c7a0c3deb7b715446a96489367051d2c2b78bc3c	no	3
Warnings:					
Information:					
2		0023_US_D1_RCE_cute.pdf	68447 beb664c28b34528d220d34eea4edb4880d9a4a4e	yes	13
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Extension of Time		2	2	
	Claims		3	9	
	Applicant Arguments/Remarks Made in an Amendment		10	13	
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	32695 4d1eee11f09e54a29e14f833804bec533a8b50c9	no	2
Warnings:					
Information:					
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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/050,648	Filing Date 03/18/2008	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT	02/18/2011	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 21	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 6	Minus	***6	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)					
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/STEFANIE BRYCE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

83579 7590 10/18/2010

LEVEL 3 COMMUNICATIONS, LLC
c/o CPA Global
P.O. Box 52050
Minneapolis, MN 55402

EXAMINER	
DIVECHA, KAMAL B	
ART UNIT	**PAPER NUMBER**
2451	

NOTIFICATION DATE	DELIVERY MODE
10/18/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@cpaglobal.com

Office Action Summary	Application No.	Applicant(s)	
	12/050,648	SLOCOMBE ET AL.	
	Examiner	Art Unit	
	KAMAL B. DIVECHA	2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/29/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Action is in response to communications filed 7/29/2010.

Claims 1-21 are pending in this application.

Claims 16-21 are newly added claims.

Response to Arguments

Applicant's arguments with respect to claims above have been fully considered but are moot in view of the new ground(s) of rejection, as necessitated by the substantial amendments.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 7/29/2010 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 13-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Claim 13 recites:

> "The method as recited in claim 1, wherein the step of (c3) further comprises:
> determining a load metric…
> comparing…
> performing…"

The (c3) is "by at least one switch, selecting the content server from said respective plurality of content servers...".

Stated another way, claim 13 suggests that the process of determining, comparing and performing is by said switch.

The specification fails to teach and/or suggest switch performing the process of "determining, comparing and performing" as in claim 13.

The specification, at best, discloses a switch to select from among the cache servers in a given node/cluster based on a predetermined selection policy, e.g. pg. 12 [0045].

As such, the claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 14-16 are rejected for the same reasons as set forth above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 1-12 and 16-21 are rejected under **35 U.S.C. 103(a)** as being unpatentable over McCanne (hereinafter McCanne, US 2005/0010653) in view of Goldszmidt et al. (hereinafter Goldzmidt, US 6,195,680 B1).

Referring to claim 1,

McCanne teaches a method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers (para. [0119], [0126]);

(B) causing said plurality of CDN DNS servers to be authoritative for a hostname associated with a content provider by causing said common anycast address to be associated with said hostname (para. [0119], [0120], [0123], [0126]);

(C) responsive to a request for a content associated with the content provider and issued by a client, said request including at least hostname (para. [0133]),

(c1) causing said hostname to be resolved to said common anycast address by a DNS server associated with an Internet Service Provider(ISP),

(c2) by one of said plurality of CDN DNS servers, resolving said hostname to identify an IP address for use by the client to retrieve the content from a content server; and (para. [0148]).

However, McCanne does not disclose by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

Goldszmidt discloses at least one switch selecting the content server from a cluster of content servers (fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify McCanne in view of Goldszmidt in order to have a switch select a content server from said plurality of content servers associated with said resolving CDN DNS.

One of ordinary skilled in the art would have been motivated because it would have enabled load balancing in the cluster of servers (Goldszmidt: col. 4 L34-53: Good balance of server availability can be maintained, col. 9 L47-65: selecting using load balancing techniques).

Referring to claim 2,

McCanne teaches the method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs) (para. [0087], Fig. 16).

Referring to claim 3,

McCanne teaches the method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP (Fig. 13).

Referring to claim 4,

McCanne teaches the method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP) (Fig. 13).

Referring to claim 5,

McCanne teaches the method as recited in claim 2 wherein at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster (Fig. 13; Goldszmidt: fig. 1a).

Referring to claim 6,

McCanne teaches the method as recited in claim 1 further comprising:

(D) by the content server, attempting to serve the content (para. [0119], [0120], [0123], [0126]).

Referring to claim 7,

McCanne teaches the method as recited in claim 6 wherein said step (D) of attempting comprises:

(d1) if a valid version of said content is available on the content server, serving the content; otherwise

(d2) obtaining the content from a content source and then serving the content (para. [0087], [0186]).

Referring to claim 8,

McCanne teaches the method as recited in claim 7 wherein, said content source is an origin server associated with said content provider (para. [0087], [0186],[0188]).

Referring to claim 9,

McCanne teaches the method as recited in claim 7 wherein, if a valid version of said content is not available on the content servers, the content servers uses a table to ascertain where to obtain the content (para. [0087], [0186],[0188]).

Referring to claim 10,

McCanne teaches a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, wherein each DNS server is associated with a respective plurality of content servers (para. [0119], [0126]);

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith (para. [0120]);

(C1) responsive to a first request for first content associated with a first content provider of said plurality of content providers, said first request including at least a first hostname associated with the first content provider (para. [0119], [0120], [0122], [0126]),

(c11) by one of said plurality of DNS servers, resolving said first hostname to identify a first IP address to be used for retrieval of the first content from a first content server (para. [0119], [0120], [0122]-, [0126]); and then

(c13) attempting to serve said first content from a server (para. [0119], [0120], [0122]-, [0126]); and

(C2) responsive to a second request for second content associated with a second content provider of said plurality of content providers, said second request including at least a second hostname associated with the second content provider (para. [0119], [0120], [0122]-, [0126]),

(c21) by one of said plurality of DNS servers, resolving said second hostname to identify a second IP address for retrieval of the second content from a second content server (para. [0119], [0120], [0122]-, [0126]);

(c23) attempting to serve said second content from a server (para. [0119], [0120], [0122]-, [0126]).

However, McCanne does not disclose by a switch associated with said resolving DNS server, selecting the content server from said respective plurality of content servers associated with the DNS server.

Goldszmidt discloses at least one switch selecting the content server from a cluster of content servers (fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify McCanne in view of Goldszmidt in order to have a switch select a content server from said plurality of content servers associated with said the DNS servers (for both step c11 and c21).

One of ordinary skilled in the art would have been motivated because it would have enabled load balancing in the cluster of servers (Goldszmidt: col. 4 L34-53: Good balance of server availability can be maintained, col. 9 L47-65: selecting using load balancing techniques).

As per claim 18, McCanne-Goldszmidt discloses the method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy (Goldszmidt: fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 19, McCanne-Goldszmidt discloses the method of claim 10, wherein the resolving DNS server of step (c11) is same as the resolving DNS server performing of step (c21) (para. [0119], [0120], [0122], [0126]).

As per claim 20, McCanne-Goldszmidt discloses the method of claim 19, wherein the switch of step (c12) is the same as the switch of step (c22) (Goldszmidt: fig. 1a, fig. 4, col. 9 L47-65 and col. 4 L54-67).

As per claim 21, McCanne-Goldszmidt discloses the method of claim 19, wherein the first content server is the same as the second content server (para. [0119], [0120], [0122], [0126]).

As per claims 11-12 and 16-17, they do not teach or further define over the limitations in claims 1-10. Therefore, claims 11-12 and 16-17 are rejected for the same reasons as set forth in claims 1-10.

3. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable McCanne (hereinafter McCanne, US 2005/0010653) in view of Goldszmidt et al. (hereinafter Goldszmidt, US 6,195,680 B1) and further in view of in view of Zegura et al., Application Layer Anycasting: A Server Selection Architecture and Use in a Replicated Web service, August 2000, IEEE, vol. 8, no.4, pages 455-466.(herein after Zegura).

Referring to claim 13,

McCanne-Goldszmidt teaches the method of claim 1 as set forth above.

But McCanne-Goldszmidt does not explicitly teach the process wherein the step of (c3) further comprises: determining a load metric for each of the plurality of content servers;

comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content servers if at least one load metric exceeds the overload threshold.

Zegura teaches "Application Level" anycasting service and determining a load metric for each of the plurality of content servers; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content servers if at least one load metric exceeds the overload threshold (page 456, Left Column, lines 27-54, and metric collection technique on page 459).

Thus, it would have been recognized by one of ordinary skill in the art that applying the known technique taught by Zegura to the load balancing system of McCanne-Goldszmidt would have yielded predicable results and resulted in an improved CDN, namely, the CDN that would have a method which is made to balance the load in accordance with the collected metric and the set thresholds by a switch and cluster of nodes.

Referring to claim 14,

McCanne-Goldszmidt teaches the method as recited in claim 10 as set forth above.

But McCanne-Goldszmidt does not explicitly teach the process, wherein the step of (c12) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, and wherein the step of (d22) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least

one load metric exceeds the overload threshold, wherein the step of resolving said second hostname to identify a second content server site is in accordance with the load balancing.

Zegura teaches "Application Level" anycasting service and wherein the step of (d12) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, and wherein the step of (d22) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, wherein the step of resolving said second hostname to identify a second content server site is in accordance with the load balancing. (page 456, Left Column, lines 27-54, and metric collection technique on page 459).

Thus, it would have been recognized by one of ordinary skill in the art that applying the known technique taught by Zegura to the load balancing system of McCanne-Goldszmidt would have yielded predicable results and resulted in an improved CDN, namely, the CDN that would have a method which is made to balance the load in accordance with collected metric and the set thresholds.

Referring to claim 15,

McCanne-Goldszmidt teaches the method of claim 12 as set forth above.

But McCanne-Goldszmidt does not explicitly teach the process, wherein the step of (c2) further comprises:

determining a load metric for each of the plurality of content server sites; comparing the load metric of each of the plurality of content server sites to a predefined overload threshold; and if a load metric associated with a specific content server site exceeds the overload threshold,

Zegura teaches "Application Level" anycasting service and method as recited in claim 12, wherein the step of (d2) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric of each of the plurality of content server sites to a predefined overload threshold; and if a load metric associated with a specific content server site exceeds the overload threshold (page 456, Left Column, lines 27-54, and metric collection technique on page 459).

Thus, it would have been recognized by one of ordinary skill in the art that applying the known technique taught by Zegura to the load balancing system of McCanne would have yielded predicable results and resulted in an improved CDN, namely, the CDN that would have a method which is made to balance the load in accordance with collected metric and the set thresholds.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is (571)272-5863. The examiner can normally be reached on IFP (M-F: 10-6.30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN FOLLANSBEE can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KAMAL B DIVECHA/
Primary Examiner, Art Unit 2451

Notice of References Cited	Application/Control No. 12/050,648	Applicant(s)/Patent Under Reexamination SLOCOMBE ET AL.	
	Examiner KAMAL B. DIVECHA	Art Unit 2451	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,195,680	02-2001	Goldszmidt et al.	709/203
*	B	US-6,226,684	05-2001	Sung et al.	709/238
*	C	US-6,240,461	05-2001	Cieslak et al.	709/235
*	D	US-6,405,256	06-2002	Lin et al.	709/231
*	E	US-6,424,992	07-2002	Devarakonda et al.	709/203
*	F	US-6,434,608	08-2002	Desai, Arun Raghavendra	709/217
*	G	US-6,490,615	12-2002	Dias et al.	709/219
*	H	US-6,823,362	11-2004	Eshghi, Kave	709/203
*	I	US-6,438,652	08-2002	Jordan et al.	711/120
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	KAMAL B DIVECHA	2451

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009	03/11/2010	10/04/2010						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13		✓	✓						
	14		✓	✓						
	15		✓	✓						
	16			✓						
	17			✓						
	18			✓						
	19			✓						
	20			✓						
	21			✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	ASHOK B PATEL	2449

SEARCHED			
Class	Subclass	Date	Examiner
709	all	8/9/2006	AP

SEARCH NOTES		
Search Notes	Date	Examiner
Name search and Continuity search	6/1/09	AP
EAST search (also considered the search of 09/982721)	6/1/09	AP
Updated EAST search	3/1/10	AP
Searched IEEE	3/2/10	AP
EAST TEXT SEARCH UPDATED (please see the attached search report).	9/16/2010	KD

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

	/KAMAL B DIVECHA/ Primary Examiner.Art Unit 2451

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	3351	((switch$3 or router$3) near8 (select $3$3 or send$3) near8 (server$1 or cach$3) near8 (load$3 or content$1 or data$1 or request$1 or type$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2010/09/16 18:56
S2	1575	((switch$3 or router$3) near8 (select $3$3 or send$3) near8 (request$1) near8 (server$1 or cach$3) near8 (load$3 or content$1 or data$1 or request$1 or type$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2010/09/16 18:57
S3	199	S2 and 709/203,217,223,234,235.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2010/09/16 18:58
S4	0	((load adj3 balanc$3) near6 (server $1 or cach$3) near6 (clsuter$1) near6 (router$1 or switch$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2010/09/16 19:17
S5	0	((load adj3 balanc$3) with (server$1 or cach$3) with (clsuter$1) with (router$1 or switch$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2010/09/16 19:17
S6	131	((load adj3 balanc$3) with (server$1 or cach$3) with (cluster$1) with (router$1 or switch$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2010/09/16 19:17
S7	70	((load adj3 balanc$3) near6 (server $1 or cach$3) near6 (cluster$1) near6 (router$1 or switch$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	ON	2010/09/16 19:17
S8	2	("20050010653").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	OFF	2010/10/04 17:12

S9	2	("20080235400").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; DERWENT; IBM_TDB	OR	OFF	2010/10/04 18:37

EAST Search History (Interference)

< This search history is empty>

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 5

Complete if Known	
Application Number	12/050,648
Filing Date	March 18, 2008
First Named Inventor	Michael Slocombe et al.
Art Unit	2449
Examiner Name	Ashokkumar B. Patel
Attorney Docket Number	0023-US-D1

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6,243,760		Armbruster	
		US- 5,819,092		Ferguson	
		US- 6,081,835		Antcliff	
		US- 6,078,943		Yu	
		US- 6,187,160		Bolton	
		US- 6,167,427		Rabinovich	
		US- 6,112,239		Kenner	
		US- 5,956,716		Kenner	
		US- 6,052,718		Gifford	
		US- 5,920,701		Miller	
		US- 5,812,769		Graber	
		US- 6,108,703		Leighton	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Kamal Divecha/	Date Considered	10/05/2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 5

Complete if Known	
Application Number	12/050,648
Filing Date	March 18, 2008
First Named Inventor	Michael Slocombe et al.
Art Unit	2449
Examiner Name	Ashokkumar B. Patel
Attorney Docket Number	0023-US-D1

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	1	Bestavros, "Demand-Based Document Dissemination to Reduce Traffic and Balance Load in Distributive Information Systems," IEEE Symposium on Parallel and Distributed Processing	
	1	(PDP), San Antonio, TX, October 1995	
	2	Cisco Distributed Director (1996)	
	3	Mockapetris, "Domain Names-Concepts and Facilities," IETF RFC 1034, November 1987	
	4	Mockapetris, "Domain Names-Implementation and Specification," IETF RFC 1035, November 1987	
	5	Brisco, T., "DNS Support for Load Balancing," IETF RFC 1794, April 1995	
	6	Berners-Lee, T. & Connolly, D., "Hypertext Markup Language - 2.0," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1866, Nov. 1995.	
	7	WESSELS, D., et al., "Application of Internet Cache Protocol (ICP), version 2" Internet Engineering Task Force (IETF) Request for Comments (RFC) 2187, September 1997.	
	8	BERNERS-LEE, T., et al., "Hypertext Transfer Protocol – HTTP/1.0," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1945, May 1996.	
	9	Berners-Lee, T. "Resource Identifiers in WWW: A Unifying Syntax for the Expression of Names and Addresses of Objects on the Network as used in the World-Wide Web," Internet	

Examiner Signature	/Kamal Divecha/	Date Considered	10/05/2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 5

Complete if Known	
Application Number	12/050,648
Filing Date	March 18, 2008
First Named Inventor	Michael Slocombe et al.
Art Unit	2449
Examiner Name	Ashokkumar B. Patel
Attorney Docket Number	0023-US-D1

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	9	Engineering Task Force (IETF) Request for Comments (RFC) 1630, June 1994.	
	10	BERNERS-LEE, T., et al., RFC 1738--Uniform Resource Locators, Dec. 1994.	
	11	CALLON, R., "Use of OSI IS-IS for Routing in TCP/IP and Dual Environments," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1195, December 1990.	
	12	CHANDRA, R. et al., "BGP Communities Attribute," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1997, August 1996.	
	13	CHEN, E., et al., "An Application of the BGP Community Attribute in Multi-home Routing," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1998, August 1996.	
	14	COLAJANNI, M., et al., "Scheduling Algorithms for Distributed Web Servers," International Conf. on Distributed Computing Systems (ICDCS), Baltimore, Maryland, USA, May 1997.	
	15	ERIKSSON, H., "MBONE: The Multicast Backbone," Communications of the ACM, vol. 37, num. 8, Pg. 54-60, August 1994.	
	16	WESSELS, D., et al., "Internet Cache Protocol (ICP), version 2," Internet Engineering Task Force (IETF) Request for Comments (RFC) 2186, September 1997.	
	17	FIELDING, R., et al., "Hypertext Transfer Protocol – HTTP/1.1," Internet Engineering Task Force (IETF) Request for Comments (RFC) 2068, January 1997.	
	18	MALKIN, G., "RIP Version 2 Carrying Additional Information," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1388, January 1993.	

Examiner Signature	/Kamal Divecha/	Date Considered	10/05/2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 4 of 5

	Complete if Known
Application Number	12/050,648
Filing Date	March 18, 2008
First Named Inventor	Michael Slocombe et al.
Art Unit	2449
Examiner Name	Ashokkumar B. Patel
Attorney Docket Number	0023-US-D1

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	19	MOY, J., "OSPF Version 2," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1583, March 1994.	
	20	PARRIS C., et al, "A Dynamic Connection Management Scheme for Guaranteed Performance Services in Packet-Switching Integrated Services Networks," UC Berkeley Computer Science	
	20	Division Tech. Report TR-93-005, 1993.	
	21	PARTRIDGE, C., et al., "Host Anycasting Service," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1546, November 1993.	
	22	REKHTER Y., et al., "A Border Gateway Protocol 4 (BGP-4)," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1771, March 1995.	
	23	REKHTER Y., et al., "Application of the Border Gateway Protocol in the Internet," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1772, March 1995.	
	24	TOPOLCIC, C., "Experimental Internet Stream Protocol, Version 2 (ST-II)," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1190, October 1990.	
	25	TOUCH, J. et al., "The X-Bone,". Third Global Internet Mini-Conference at Globecom '98. Sydney, Australia, Nov. 1998, pp. 59-68 (pp. 44-52 of the mini-conference)	
	26	TRAINA, P., "BGP-4 Protocol Analysis," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1774, March 1995.	
	27	TRAINA, P., "Experience with the BGP-4 protocol," Internet Engineering Task Force (IETF) Request for Comments (RFC) 1773, March 1995.	

Examiner Signature	/Kamal Divecha/	Date Considered	10/05/2010

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Sheet 5 of 5

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Application Number	12/050,648
Filing Date	March 18, 2008
First Named Inventor	Michael Slocombe et al.
Art Unit	2449
Examiner Name	Ashokkumar B. Patel
Attorney Docket Number	0023-US-D1

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	28	BAENTSCH, M., et al., "Introducing Application-Level Replication and Naming into Today's Web," Computer Networks and ISDN Systems, vol. 28, num. 7-11, pgs. 921-930, May 1996.	
	29	Bhattacharjee et al., "Application-layer anycasting," in Proc. IEEE INFOCOM '97, April, 1997.	
	30	ALMEROTH, K., et al. "Scalable Delivery of Web Pages Using Cyclic Best-Effort (UDP) Multicast", IEEE INFOCOM, San Francisco, California, USA, June 1998.	
	31	Collins, A., "The Detour Framework for Packet Rerouting," University of Washington, October 29, 1998,	
	31	http://web.archive.org/web/19990202122310/http://www.cs/washington.edu/research/networking/detour/	
	32	Savage, S., et al., "Detour: Informed Internet Routing and Transport," IEEE Micro, January-February 1999.	
	33	Schemers, R., "Ibnamed: A Load Balancing Name Server in Perl." 1995 LISA IX, Monterey, California, September 17-22, 1995.	
	34	BERNERS-LEE, T., et al., "Hypertext Transfer Protocol – HTTP/1.0," Internet Engineering Task Force (IETF) Internet Draft, draft-ietf-http-v10-spec-00.ps, March 1995.	
	35	FIELDING, R., et al., "Hypertext Transfer Protocol – HTTP/1.1," Internet Engineering Task Force (IETF) Internet Draft, draft-ietf-http-v11-spec-00.txt, November 1995.	

Examiner Signature	/Kamal Divecha/	Date Considered	10/05/2010

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant	: Michael Slocombe, et al.	
Appln. No.	: 12/050,648	Confirmation No: 9055
Filed	: March 18, 2008	Group Art Unit: 2449
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORK	Examiner: Ashokkumar B. Patel Docket No. 0023-US-D1

AMENDMENT AND RESPONSE TO NON-FINAL OFFICE ACTION

Via EFS-Web
MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Non-Final Office Action dated March 23, 2010, please amend the above-identified application as follows:

Extension of Time Request is found on page 2 of this paper.

A listing of the claims is found on page 3 of this paper.

Remarks/Arguments begin on page 12 of this paper.

Extension of Time

Applicant hereby petitions for a **two**-month extension of time and is electronically submitting the required fee with this correspondence. Other than this extension fee and the fees for additional claims, Applicant believes no other Petitions or fees are necessary, but if this is incorrect, please consider this a Petition and authorization of payment therefor. The Commissioner is authorized to deduct any additional fees from or credit any over-payment to the undersigned's Deposit Account No. 50-5063.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said plurality of CDN DNS servers ~~all~~ sharing a common anycast address, wherein each CDN DNS server is associated with a respective plurality of content servers;

~~(B) providing a plurality of content servers associated with the CDN, each of said content servers associated with at least one of said plurality of DNS servers, and each DNS server of said plurality of DNS servers having at least one content server associated therewith;~~

~~(C)~~ (B) causing said plurality of CDN DNS servers to be authoritative for a ~~at least one~~ hostname associated with a content provider ~~domain~~ by causing said common anycast address to be associated with said ~~at least one content provider domain~~ hostname;

~~(D)~~ (C) responsive to a request for content associated with the content provider and issued by a client, said request including ~~to resolve a~~ at least said hostname ~~in said content provider domain~~,

~~(d1)~~ (c1) causing said hostname to be resolved to said common anycast address by ~~at least one other~~ a DNS server associated with an Internet Service Provider (ISP); ~~(ISP), said at least one other DNS server being authoritative for said content provider's domain; and then~~

~~(d2)~~ (c2) by one of said plurality of CDN DNS servers ~~sharing said common anycast address~~, resolving said hostname to identify ~~at least one of said content servers associated with said one of said DNS servers.~~ an IP address for use by the client to retrieve the content from a content server; and

(c3) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving CDN DNS.

2. (Currently Amended) The method as recited in claim 1 wherein at least some of said plurality of CDN DNS servers are located at network Points of Presence (POPs).

3. (Currently Amended) The method as recited in claim 2 wherein each of said plurality of CDN DNS servers is located at a network POP.

4. (Original) The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. (Currently Amended) The method as recited in claim 2 wherein ~~said~~ at least one of said plurality of CDN DNS servers and respective plurality of content servers is grouped as a cluster.~~content servers grouped into nodes, each node associated with one of said plurality of DNS servers.~~

6. (Currently Amended) The method as recited in claim 1 further comprising:

~~(E) at one of said identified content servers,~~(D) by the content server,

~~(e1)~~ attempting to serve the content.~~an object associated with the content provider.~~

7. (Currently Amended) The method as recited in claim 6 wherein said step ~~(e1)~~ (D) of attempting comprises:

~~(e11)~~ (d1) if a valid version of ~~said object~~ the content is available on the content server, serving the content ~~said one of said identified content servers, serving said object~~; otherwise

~~(e12)~~ (d2) obtaining the ~~object~~ content from a content source and then serving the content ~~object~~.

8. (Original) The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. (Currently Amended) The method as recited in claim 7 wherein, if a valid version of the content ~~said object~~ is not available on the content server, ~~said one of said identified content servers, said one of said identified content servers~~ the content server uses a table ~~in order~~ to ascertain where to obtain the content ~~said object.~~

10. (Currently Amended) A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of ~~CDN~~ Domain Name System (DNS) servers, said plurality of ~~CDN~~ DNS servers ~~all~~ sharing a common anycast address, wherein each DNS server is associated with a respective plurality of content servers;

(B) configuring each DNS server and respective plurality of content servers to support content delivery for a plurality of content providers, wherein each of the plurality of content providers has a respective hostname associated therewith;

~~(B) providing a plurality of content server sites, each of said content server sites being associated with one of said CDN DNS servers, and each CDN DNS server having at least one content server site associated therewith;~~

~~(C1) causing said common anycast address to be associated with a first domain associated with a first content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said first domain, and~~

~~(C2) causing said common anycast address to be associated with a second domain associated with a second content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said second domain;~~

~~(D1)~~ (C1) responsive to a first request for first content associated with ~~said~~ a first content provider of said plurality of content providers, said first request including at least a first hostname ~~in said first domain~~ associated with the first content provider,

~~(d11) causing said first hostname to be resolved to said common anycast address by at least one DNS associated with an Internet Service Provider (ISP); and then~~

~~(d12)~~ (c11) by one of said plurality of ~~CDN~~ DNS servers ~~sharing said common anycast address~~, resolving said first hostname to identify ~~a first content~~

~~server site associated with said one of said CDN DNS servers; and then.~~ a first IP address to be used for retrieval of the first content from a first content server;

(c12) by a switch associated with said resolving DNS server of step (c11), selecting the first content server from said respective plurality of content servers associated with the DNS server of step (c11); and

~~(d13)~~ (c13) attempting to serve said first content from ~~a~~ the first content server ~~in said content server site~~; and

~~(D2)~~ (C2) responsive to a second request for second content associated with ~~said~~ a second content provider of said plurality of content providers, said second request including at least a second hostname ~~in said second domain~~ associated with the second content provider,

~~(d21) causing said second hostname to be resolved to said common anycast address by the at least one DNS associated with the ISP; and then~~

~~(d22)~~ (c21) by one of said plurality of ~~CDN~~ DNS servers ~~sharing said common anycast address~~, resolving said second hostname to identify ~~a second content server site associated with said one of said CDN DNS servers; and then~~ a second IP address for retrieval of the second content from a second content server;

(c22) by a switch associated with said resolving DNS server of step (c21), selecting the second content server from said respective plurality of content servers associated with the DNS server of step (c21); and

~~(d23)~~ (c23) attempting to serve said second content from ~~a~~ the second content server ~~in said second content server site~~.

11. (Currently Amended) A content delivery system for delivering content on behalf of a plurality of content providers, each of said plurality of content providers having ~~at least one content provider domain~~ a hostname associated therewith, the system comprising:

(A) a plurality of ~~CDN~~ Domain Name System (DNS) servers, said plurality of ~~CDN~~ DNS servers ~~all~~ sharing a common anycast address, ~~and~~ said plurality of ~~CDN~~ DNS servers being authoritative for said ~~content provider domains~~ hostnames associated with said plurality of content providers;

~~(B) a plurality of content server sites each of said content server sites associated with at least one of said plurality of DNS servers, and each DNS server of said plurality DNS servers having at least one content server site associated therewith;~~

~~(C) at least one DNS associated with an Internet Service Provider (ISP); and~~

~~(D) a load balancing mechanism associated with each of the plurality of CDN DNS servers said load balancing mechanism operable to analyze load characteristics associated with each of the plurality of content server sites, wherein~~

(B) a set of content servers associated with each DNS server, each set comprising at least a plurality of content servers; and

(C) at least one switch associated with each set of content servers, wherein

(D) responsive to a request to resolve a hostname [[in]] associated with a particular content provider ~~domain~~ of said plurality of content providers, ~~provider domains, said request being initially resolvable to the anycast address by the at least one DNS associated with the ISP, said particular content provider domain corresponding to a particular content provider,~~ said request ~~to resolve a hostname~~ being associated with an end-user request for content ~~from~~ of said particular content provider ~~domain~~, one of said plurality of ~~CDN~~ DNS servers is operable to ~~sharing said common anycast address~~ resolve[[s]] said hostname ~~in accordance with the load balancing mechanism~~ to identify ~~at least one of said content server~~ sites associated with ~~said one of said one of said CDN DNS servers,~~ an IP address for use by the end-user to retrieve the content from a content server,

(E) the at least one switch associated with the set of content servers of the resolving DNS server is operable to perform load balancing to select the content server from the set of content servers associated with the resolving DNS server, and

(F) the content server is operable to serve the content to the end-user. ~~wherein said content is served to said end-user from said identified content server site.~~

12. (Currently Amended) A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said plurality of DNS servers ~~all~~ sharing a common anycast address, each DNS server being associated with a respective plurality of content servers, wherein at least some of said

~~plurality of DNS servers~~ plurality of content servers ~~being~~ are located at network Points of Presence (POPs);

~~(B) providing a plurality of content servers, each of said content servers associated with at least one of said plurality of CDN DNS servers, and each CDN DNS server of said plurality~~ of ~~CDN DNS servers having at least one content server associated therewith, and each of said plurality of content servers being associated with a network Point of Presence (POP);~~

~~(C)~~ (B) causing said plurality of DNS servers to be authoritative for ~~at least one~~ a hostname associated with a content provider ~~domain~~ by causing said common anycast address to be associated with said hostname; ~~at least one content provider domain;~~

~~(D)~~ (C) responsive to a request for content associated with the content provider by a client, said request including ~~to resolve a~~ at least said hostname ~~in said content provider domain~~,

~~(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server associated with an Internet Service Provider (ISP), said at least one other DNS server being authoritative for said content provider's domain; and then~~

~~(d2)~~ (c1) by one of said plurality of DNS servers ~~sharing said common anycast address~~, resolving said hostname to identify ~~at least one of said content servers sites associated with said one of said DNS servers;~~ an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch, selecting the content server from said respective plurality of content servers associated with said resolving DNS server.

~~(E) at one of said identified content servers,~~

(D) by the content server,

~~(e1)~~ (d1) attempting to serve the content by: ~~an object associated with the content provider by:~~

~~(e11)~~ (d11) if a valid version of ~~said object~~ the content is available on the content server, serving the content; ~~said one of said identified content servers, serving said object;~~ otherwise

~~(e12)~~ (d12) obtaining the ~~object~~ content from a content source and then serving the content. ~~object.~~

13. (Currently Amended) The method as recited in claim 1, wherein the step of (c3)~~(d2)~~ further comprises:

determining a load metric for each of said respective plurality of content servers associated with said resolving CDN DNS; ~~the plurality of content servers;~~

comparing [[the]] each load metric to a predefined overload threshold; and

performing load balancing among said respective plurality of content servers ~~the plurality of content servers~~ if at least one load metric exceeds the overload threshold~~,~~ ~~whereinthe step of resolving said hostname to identify at least one of said content servers is in accordance with the load balancing~~.

14. (Currently Amended) The method as recited in claim 10, wherein the step of ~~(d12)~~ (c12) further comprises:

determining a first load metric for each of said respective plurality of content servers associated with said resolving DNS server of step (c11); ~~the plurality of content server sites;~~

comparing the first load metric to a first ~~predefined~~ overload threshold; and

performing load balancing among said respective plurality of content servers associated with said resolving DNS server of step (c11) ~~the plurality of content server sites~~ if at least one of the first load metrics ~~load metric~~ exceeds the first overload threshold, ~~wherein the step of resolving said first hostname to identify a first content server site is in accordance with the load balancing,~~

and wherein the step of ~~(d22)~~ (c22) further comprises:

determining a second load metric for each of said respective plurality of content servers associated with said resolving DNS server of step (c21)~~the plurality of content server sites~~;

comparing the second load metric to a second ~~predefined~~ overload threshold; and

performing load balancing among said respective plurality of content servers associated with said resolving DNS server of step (c21) ~~the plurality of content server sites~~ if at least one of the second load metrics ~~load metric~~ exceeds the second overload threshold~~, wherein the step of resolving said second hostname to identify a second content server site is in accordance with the load balancing~~.

15. (Currently Amended) The method as recited in claim 12, wherein the step of ~~(d2)~~ (c2) further comprises:

determining a load metric for each of the respective plurality of content servers associated with the resolving DNS server; ~~plurality of content server sites;~~

comparing [[the]] each load metric ~~of each of the plurality of content server sites~~ to a predefined overload threshold; and

if a load metric exceeds the overload threshold, performing load balancing on the respective plurality of content servers. ~~by impeding the transmission of requests to the specific content server site.~~

16. (New) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), the plurality of DNS servers sharing a common anycast address, wherein each DNS server is associated with a set of content servers, each set comprising at least a plurality of content servers;

(B) causing the plurality of DNS servers to be authoritative for a hostname associated with a content provider by causing the common anycast address to be associated with the hostname;

(C) responsive to a request for content associated with the content provider and issued by a client, the request including at least the hostname,

(c1) by one of the plurality of DNS servers, resolving the hostname to identify an IP address for use by the client to retrieve the content from a content server; and

(c2) by at least one switch associated with the set of content servers of the resolving DNS server, selecting the content server from the set of content servers associated with the resolving DNS server.

17. (New) A content delivery system comprising a plurality of nodes, wherein each node comprises:

a Domain Name System (DNS) server sharing an anycast address with DNS servers in other nodes of the content delivery system, wherein the DNS server is authoritative for hostnames associated with a plurality of content providers;

a plurality of content servers; and

at least one switch, wherein

responsive to a request by a client for content associated with a particular content provider of the plurality of content providers, the request including at least a hostname associated with the particular content provider, the DNS server is operable to resolve the hostname to identify an IP address for use by the client to retrieve the content from a content server,

the at least one switch is operable to select the content server from the plurality of content servers, and

the content server is operable to serve the content to the client.

18. (New) The method of claim 1, wherein the step of (c3) is performed in accordance with a predetermined selection policy.

19. (New) The method as recited in claim 10, wherein the resolving DNS server of step (c11) is the same as the resolving DNS server performing of step (c21).

20. (New) The method as recited in claim 19, wherein the switch of step (c12) is the same as the switch of step (c22).

21. (New) The method as recited in claim 19, wherein the first content server is the same as the second content server.

Remarks/Arguments

This Response is considered fully responsive to the Non-Final Office Action mailed March 23, 2010. In this Response, claims 1-3, 5-7 and 9-15 are amended, no claims have been cancelled, and claims 16-21 have been added. Therefore, claims 1-21 are now pending in the application. Reexamination and reconsideration are respectfully requested.

In the Non-Final Office Action, each of the independent claims (1 and 10-12) pending in this application currently stand rejected as either anticipated by or obvious over U.S. Publication No.2005/0010653 to McCanne (hereinafter "McCanne"). In response, Applicant has amended each independent claim so as to recite a plurality of DNS servers that share a common Anycast address and a switch that selects a content server from amongst a plurality (e.g., "cluster") of content servers associated with such CDN-DNS servers (see, para. [0063]). While McCanne teaches, in one embodiment disclosed in paras. [0110]-[0190], CDN-DNS servers that use Anycast addressing, and in another embodiment disclosed in paras. [0233]-[0237], a switch that selects a content server from a plurality of content servers, these embodiments are taught in McCanne to be mutually exclusive, as alternative implementations from one another. Accordingly, McCanne necessarily fails to teach any independent claim pending in the present application, and therefore the outstanding rejections to claims 1 and 10-12 are believed moot, as are the rejections to claims 2-9 and 13-15, each of which depends from one of claims 1 and 10-12.

New independent claims 16 and 17 recite those same limitations as articulated above with respect to independent claims 1 and 10-12, and therefore are believed to be allowable over McCanne for at least the same reasons as stated above. Similarly, new claims 18-21 each depend from one of the independent claims pending in the present application, and therefore are believed allowable over McCanne by virtue of their dependency on these independent claims.

Conclusion

Claims 1-21 are currently pending in the application. Applicant believes that all pending claims are in a condition for allowance. Applicant therefore requests that a timely Notice of Allowance be issued in this case.

If the Examiner should require any additional information or believes any issues could be resolved via a telephone interview, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: July 29, 2010

/JCS/

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Electronic Acknowledgement Receipt	
EFS ID:	8115405
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0023-US-D1
Receipt Date:	29-JUL-2010
Filing Date:	18-MAR-2008
Time Stamp:	13:39:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	NPL Documents	Fielding_2_cute.pdf	321409 59d99a12532e26efb6eafed87081177c9803feb0	no	81
Warnings:					
Information:					

2	NPL Documents	Malkin_cute.pdf	22444 0161d731230a4491fd07e2503bb6fdfca780be08	no	7
Warnings:					
Information:					
3	NPL Documents	Mockapetris_cute.pdf	118252 a8dac6027aac6232576baf802277ba8dc88f54d8	no	55
Warnings:					
Information:					
4	NPL Documents	Mockapetris_2_cute.pdf	115158 798455d5e3786c29939130d7840f6114dfa91f55	no	55
Warnings:					
Information:					
5	NPL Documents	Moy_cute.pdf	524236 0dfc83abd9b660a8291f8ee0dd6aae13808ba7d3	no	132
Warnings:					
Information:					
6	NPL Documents	Parris_cute.pdf	263240 0fde58709042e3b569937db10dc3fa6405045c8f	no	37
Warnings:					
Information:					
7	NPL Documents	Partridge_cute.pdf	27368 7fdc60e6392dd51efe3f2c9f7999cebfe32d208c	no	9
Warnings:					
Information:					
8	NPL Documents	Rekhter_cute.pdf	118065 4fd0b6fd7ddde47c598426ccd2ffa1afe704ccf8	no	57
Warnings:					
Information:					
9	NPL Documents	Rekhter_2_cute.pdf	48157 122cfe09b8e651b3ad35fd408d90dd21d61cf891	no	19
Warnings:					
Information:					
10	NPL Documents	Savage_cute.pdf	265974 8e6f1757863f5f214f76ef697474c5796c56dc31	no	10
Warnings:					
Information:					

11	NPL Documents	Schemers_cute.pdf	90080 28a8321eebd3c729053fd224034447de51bd9b05	no	12
Warnings:					
Information:					
12	NPL Documents	Topolcic_cute.pdf	297715 c47740ffbb79b38b2960934f72044279e205cee5	no	148
Warnings:					
Information:					
13	NPL Documents	Touch_cute.pdf	107489 36ddcb707e210f6b95b810e7b917dce76f909ca6	no	9
Warnings:					
Information:					
14	NPL Documents	Traina_cute.pdf	29446 8caee2283200eeca2f126f6a33d99a601560de7c	no	10
Warnings:					
Information:					
15	NPL Documents	Traina_2_cute.pdf	27350 8f1b7cf6ab22e7acef9735c7ff51029503619af7	no	9
Warnings:					
Information:					
16	NPL Documents	WESSELS_RFC_2186_Sept_1997_NP0001_cute.pdf	26066 0d88100adba9a3dd186f3448e3e99ec1962fcef4	no	9
Warnings:					
Information:					
17	NPL Documents	WESSELS_RFC_2187_Sept_1997_NP0002_cute.pdf	57829 6eaeee39f5e8acc7264c7b4547dea3848a002246	no	24
Warnings:					
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			Total Files Size (in bytes):	2460278	

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/050,648	03/18/2008	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	07/29/2010	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 20	= 1	X $ =		OR	X $52=	52
	Independent (37 CFR 1.16(h))	* 6	Minus	***4	= 2	X $ =		OR	X $220=	440
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	**492**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DEANNA L. RORIE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	0023-US-D1	9055

83579 7590 03/23/2010

LEVEL 3 COMMUNICATIONS, LLC
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P.O. Box 52050
Minneapolis, MN 55402

EXAMINER	
PATEL, ASHOKKUMAR B	
ART UNIT	PAPER NUMBER
2449	

NOTIFICATION DATE	DELIVERY MODE
03/23/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	12/050,648	SLOCOMBE ET AL.	
	Examiner	Art Unit	
	ASHOK B. PATEL	2449	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-15 are subject to examination.

Response to Arguments

2. Applicant's arguments filed 11/09/2009 have been fully considered and they are not persuasive for the following reasons:

Applicant's argument:

"From the onset, Applicant notes that the methods and systems described in the pending claims describe essentially a two-phase DNS process for routing a request to a content server: a) using an ISP DNS server to resolve the initial request to the anycast address associated with the CDN DNS servers, and b) using one of the CDN DNS servers (acting in accordance with the anycast scheme) to further resolve the request to at least one content server associated with that CDN DNS server (e.g., see FIG. 5)."

Examiner's response:

Examiner would like to point out the following teachings of McCanne for its analysis and for establishing it's direct relevancy to arrive at the claimed invention in light of the above stated admission against the teachings of McCanne.

[0110] 3. Constructing a Network with Content Peering

[0111] In this section, we describe one embodiment of the content-peering architecture outlined above. The system components include:

[0112] 1) a "federated" redirection system that allows content requests to be routed to servers based on content-peering relationships among ISPs (based, in part, on the teachings of McCanne et al. I and II);

[0113] 2) a naming system where URLs point into the redirection fabric and contain enough information to allow the service attachment point system to retrieve the content from the content distribution system;

[0114] 3) a content distribution network comprising **application-level** content routers that support "wide-area multicasting" of data (as disclosed in McCanne et al. I and II); and

[0115] 4) server technologies that are enhanced or extended to interoperate with the disclosed content-naming system.

[0116] The system components will now be described in further detail.

[0117] 3.1. Federated Redirection

[0118] Content peering preferably uses a redirection system that maps onto the existing peering relationships among ISPs. One approach uses anycasting as part of the redirection process. Anycast routing uses the existing unicast routing infrastructure. Each content backbone is assigned its own anycast address (as the hook to capture content requests). Thus, any ISP can configure their ensemble of redirector nodes with this new anycast address to capture that content backbone's content requests. The content backbone serves as the default autonomous system ("AS") for all requests that

do not emanate from or traverse a content-distribution-enabled ISP. Administratively provisioned interdomain anycast routing can be used to make the content backbone span multiple autonomous systems.

[0119] As described herein, there are several approaches to redirection. Once such approach uses DNS (Domain Name Service) servers to effect the redirection. Using that approach, DNS servers can be assigned an anycast address and thus fit into the content-peering model. Using N* configuration, an ISP's DNS server can decide to route certain requests to the edge of the ISP and other requests to a main hub and yet other requests to its content peers (depending on the provisioned policies).

[0120] One aspect of a scalable and efficient content peering implementation might be a seamless redirection model that accounts for the administrative policies and boundaries of the infrastructure that comprises the content distribution system. In that model, a content distribution network (CDN) is built as a virtual network that spans multiple, perhaps independently administered, sub-CDNs. In effect, this network of CDN networks forms a "Content Internet", since the sub-CDNs are internetwork into one massive CDN."

Analysis

"A federated" redirection system that **allows content requests to be routed to servers based on content-peering relationships among ISPs** (para. [0112]) wherein "Content peering preferably uses a redirection system that maps onto the existing peering relationships among ISPs (para.[0119]).

And for Each ISPs **"Each content backbone is assigned its own anycast address** (as the hook to capture content requests). Thus, any ISP can configure their ensemble of redirector nodes with this new anycast address to capture that content backbone's content requests." (para.[0118]).

This is supplemented by "**Using that approach, DNS servers can be assigned an anycast address and thus fit into the content-peering model.** (para.[0119]).

Further clarified in para. (para.[0119]), "Using N* configuration, **an ISP's DNS server can decide** to route certain requests to the edge of the ISP and other requests to a main hub and **yet other requests to its content peers (depending on the provisioned policies)."**

Thus, ISP's DNS server send requests to its content peer wherein any ISP can configure their ensemble of redirector nodes with this new anycast address to capture that content backbone's content requests." (para.[0118]).

Here, the ISP's DNS server resolves the request to anycast address of the redirectors incorporated by any of the content peer in CDN.

And as stated in para. [0107] This redirection can be explicit through a direct communication between the client and the redirection system, but can also be implemented in some cases as an implicit redirection by using the DNS (Domain Name Service) lookup process to redirect clients.

In turn, that redirector node routes the client to the most appropriate server based on load and network measurements that the redirector nodes continually gather in the background. (para. [0107])

Thus redirector which can be DNS servers (redirectors incorporated by any of the content peer in CDN) to resolve the request to the appropriate server.

Thus McCanne teaches a) using an ISP DNS server to resolve the initial request to the anycast address associated with the CDN DNS servers, and b) using one of the CDN DNS servers (acting in accordance with the anycast scheme) to further resolve the request to at least one content server associated with that CDN DNS server.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by McCanne (hereinafter McCanne) (US 2005/0010653)

Referring to claim 1,

McCanne teaches a method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN) (Note: Please refer to the explanation provided above.), said DNS servers all sharing a common anycast address (para. [0119], [0126]);

(B) providing a plurality of content servers associated with the CDN ((Note: Please refer to the explanation provided above.), each of said content servers associated with at least one of said plurality of DNS servers, and each DNS server of said plurality of DNS servers having at least one content server associated therewith (para. [0120]);

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain(para. [0119], [0120], [0123], [0126]);

(D) responsive to a request to resolve a hostname in said content provider domain (para. [0133]),

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server associated with an Internet Service Provider(ISP), said at least one other DNS server being authoritative for said content provider's domain (para.[0134]-[0136], Note: Please refer to the explanation provided above.); and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers sites associated with said one of said DNS servers (para. [0148]).

Referring to claim 2,

McCanne teaches the method as recited in claim 1 wherein at least some of said plurality of DNS servers are located at network Points of Presence (POPs) (para. [0087], Fig. 16).

Referring to claim 3,

McCanne teaches the method as recited in claim 2 wherein each of said plurality of DNS servers is located at a network POP (Fig. 13).

Referring to claim 4,

McCanne teaches the method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP) (Fig. 13).

Referring to claim 5,

McCanne teaches the method as recited in claim 2 wherein said content servers are grouped into nodes, each node associated with one of said plurality of DNS servers (Fig. 13).

Referring to claim 6,

McCanne teaches the method as recited in claim 1 further comprising:

(E) at one of said identified content servers,

(e1) attempting to serve an object associated with the content provider (para. [0119], [0120], [0123], [0126]).

Referring to claim 7,

McCanne teaches the method as recited in claim 6 wherein said step (e 1) of attempting

comprises:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object; otherwise

(e12) obtaining the object from a content source and then serving the object (para. [0087], [0186]).

Referring to claim 8,

McCanne teaches the method as recited in claim 7 wherein, said content source is an origin server associated with said content provider (para. [0087], [0186],[0188]).

Referring to claim 9,

McCanne teaches the method as recited in claim 7 wherein, if a valid version of said object is not available on said one of said identified content servers, said one of said identified content servers uses a table in order to ascertain where to obtain said object (para. [0087], [0186],[0188]).

Referring to claim 10,

McCanne teaches a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address (para. [0119], [0126]);

(B) providing a plurality of content server sites, each of said content server sites being associated with one of said CDN DNS servers, and each CDN DNS server having at least one content server site associated therewith (para. [0120]);

(C1) causing said common anycast address to be associated with a first domain associated with a first content provider of said plurality of content providers so that said

CDN DNS servers are authoritative for said first domain (para. [0119], [0120], [0122]-, [0126]), and

(C2) causing said common anycast address to be associated with a second domain associated with a second content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said second domain (para. [0119], [0120], [0122]-, [0126]);

(D1) responsive to a first request for first content associated with said first content provider, said first request including a first hostname in said first domain (para. [0119], [0120], [0122]-, [0126]),

(d11) causing said first hostname to be resolved to said common anycast address by at least one DNS associated with an Internet Service Provider (ISP) (para. [0119], [0120], [0122]-, [0126], Note: Please refer to the explanation provided above.); and then

(d12) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said first hostname to identify a first content server site associated with said one of said CDN DNS servers (para. [0119], [0120], [0122]-, [0126]); and then

(d13) attempting to serve said first content from a server in said content server site (para. [0119], [0120], [0122]-, [0126]); and

(D2) responsive to a second request for second content associated with said second content provider, said second request including a second hostname in said second domain (para. [0119], [0120], [0122]-, [0126]),

(d21) causing said second hostname to be resolved to said common anycast address by the at least one DNS associated with the ISP (para. [0119], [0120], [0122]-, [0126], Note: Please refer to the explanation provided above.); and then

(d22) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said second hostname to identify a second content server site associated with said one of said CDN DNS servers (para. [0119], [0120], [0122]-, [0126]); and then

(d23) attempting to serve said second content from a server in said second content server site (para. [0119], [0120], [0122]-, [0126]).

Referring to claim 11,

McCanne teaches a content delivery system for delivering content on behalf of a plurality of content providers, each of said content providers having at least one content provider domain associated therewith, the system comprising:

(A) a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address, and said CDN DNS servers being authoritative for said content provider domains associated with said plurality of content providers (para. [0119], [0120], [0122]- [0126]);

(B) a plurality of content server sites, each of said content server sites associated with at least one of said plurality of DNS servers, and each DNS server of said plurality DNS servers having at least one content server site associated therewith (para. [0119], [0120], [0122]-[0126]);

(C) at least one DNS associated with an Internet Service Provider (ISP) (para. [0119], [0120], [0122]-, [0126], Note: Please refer to the explanation provided above.); and

(D) a load balancing mechanism associated with each of the plurality of CDN DNS servers, said load balancing mechanism operable to analyze load characteristics associated with each of the plurality of content server sites (para. [0018], [0090], [0105], [0107], [0126], [0135], [0137], [0141], [0161], [0164]), wherein

(D) responsive to a request to resolve a hostname in a particular content provider domain of said content provider domains, said request being initially resolvable to the anycast address by the at least one DNS associated with the ISP Note: Please refer to the explanation provided above.), said particular content provider domain corresponding to a particular content provider, said request to resolve a hostname being associated with an end-user request for content from said particular content provider domain, one of said plurality of CDN DNS servers sharing said common anycast address resolves said hostname in accordance with the load balancing mechanism (para. [0018], [0090], [0105], [0107], [0126], [0135], [0137], [0141], [0161], [0164]) to identify at least one of said content server sites associated with said one of said one of said CDN DNS servers, and wherein said content is served to said end-user from said identified content server site (para. [0119], [0120], [0122]- [0126]).

Referring to claim 12,

McCanne teaches a method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said DNS servers all sharing a common anycast address, at least some of said plurality of DNS servers being located at network Points of Presence (POPs) (para. [0119], [0120], [0122]-[0126], para. [0087], Fig. 16);

(B) providing a plurality of content servers, each of said content servers associated with at least one of said plurality of CDN DNS servers, and each CDN DNS server of said plurality CDN DNS servers having at least one content server associated therewith, and each of said plurality of content servers being associated with a network Point of Presence (POP) (para. [0119], [0120], [0122]- [0126], para. [0087], Fig. 16);

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain (para. [0119], [0120], [0122]- [0126]);

(D) responsive to a request to resolve a hostname in said content provider domain (para. [0119], [0120], [0122]- [0126]),

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server associated with an Internet Service Provider (ISP) (Note: Please refer to the explanation provided above.), said at least one other DNS server being authoritative for said content provider's domain(para.[0134]-[0136]);; and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers sites associated with said one of said DNS servers (para.[0134]-[0136]);; [0148]).;

(E) at one of said identified content servers (para. [0087], [0186],[0188]).,

(e1) attempting to serve an object associated with the content provider by:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object (para. [0087], [0186],[0188]).; otherwise

(el2) obtaining the object from a content source and then serving the object (para. [0087], [0186],[0188]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable McCanne (hereinafter McCanne) (US 2005/0010653) in view of in view of Zegura et al., Application Layer Anycasting: A Server Selection Architecture and Use in a Replicated Web service, August 2000, IEEE, vol. 8, no.4, pages 455-466.(herein after Zegura).

Referring to claim 13,

McCanne teaches "wherein the step of resolving said hostname to identify at least one of said content servers is in accordance with the load balancing." (para. [0018], [0090], [0105], [0107], [0126], [0135], [0137], [0141], [0161], [0164]).

But McCanne does not explicitly teach the method as recited in claim 1, wherein the step of (d2) further comprises: determining a load metric for each of the plurality of content servers; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content servers if at least one load metric exceeds the overload threshold.

Zegura teaches "Application Level" anycasting service and determining a load metric for each of the plurality of content servers; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content servers if at least one load metric exceeds the overload threshold (page 456, Left Column, lines 27-54, and metric collection technique on page 459).

Thus, it would have been recognized by one of ordinary skill in the art that applying the known technique taught by Zegura to the load balancing system of McCanne would have yielded predicable results and resulted in an improved CDN, namely, the CDN that would have a method which is made to balance the load in accordance with the collected metric and the set thresholds.

Referring to claim 14,

McCanne teaches "wherein the step of resolving said first hostname to identify a first content server site is in accordance with the load balancing, and wherein the step of resolving said second hostname to identify a second content server site is in accordance with the load balancing (para. [0018], [0090], [0105], [0107], [0126], [0135], [0137], [0141], [0161], [0164])

But McCanne does not explicitly teach method as recited in claim 10, wherein the step of (d12) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, and wherein the step of (d22) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, wherein the step of resolving said second hostname to identify a second content server site is in accordance with the load balancing.

Zegura teaches "Application Level" anycasting service and wherein the step of (d12) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, and wherein the step of (d22) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric to a predefined overload threshold; and performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, wherein the step of resolving said second hostname to identify a second content server site is in accordance with the load balancing. (page 456, Left Column, lines 27-54, and metric collection technique on page 459).

Thus, it would have been recognized by one of ordinary skill in the art that applying the known technique taught by Zegura to the load balancing system of McCanne would have yielded predicable results and resulted in an improved CDN, namely, the CDN that would have a method which is made to balance the load in accordance with collected metric and the set thresholds.

Referring to claim 15,

McCanne teaches "performing load balancing by impeding the transmission of requests to the specific content server site. (para. [0018], [0090], [0105], [0107], [0126], [0135], [0137], [0141], [0161], [0164]).

But McCanne does not explicitly teach the method as recited in claim 12, wherein the step of (d2) further comprises:

determining a load metric for each of the plurality of content server sites; comparing the load metric of each of the plurality of content server sites to a predefined overload threshold; and if a load metric associated with a specific content server site exceeds the overload threshold,

Zegura teaches "Application Level" anycasting service and method as recited in claim 12, wherein the step of (d2) further comprises: determining a load metric for each of the plurality of content server sites; comparing the load metric of each of the plurality of content server sites to a predefined overload threshold; and if a load metric associated with a specific content server site exceeds the overload threshold (page 456, Left Column, lines 27-54, and metric collection technique on page 459).

Thus, it would have been recognized by one of ordinary skill in the art that applying the known technique taught by Zegura to the load balancing system of McCanne would have yielded predicable results and resulted in an improved CDN, namely, the CDN that would have a method which is made to balance the load in accordance with collected metric and the set thresholds.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASHOK B. PATEL whose telephone number is (571)272-3972. The examiner can normally be reached on 6:30 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ashok B. Patel/
Primary Examiner, Art Unit 2449

Notice of References Cited	Application/Control No. 12/050,648	Applicant(s)/Patent Under Reexamination SLOCOMBE ET AL.	
	Examiner ASHOK B. PATEL	Art Unit 2449	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-			
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
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	I	US-			
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	K	US-			
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Zegura et al., Application Layer Anycasting: A Server Selection Architecture and Use in a Replicated Web service, August 2000, IEEE, vol. 8, no.4, pages 455-466.
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12050648
	Filing Date	2008-03-18
	First Named Inventor	Michael Slocombe
	Art Unit	2449
	Examiner Name	PATEL, Ashokkumar B.
	Attorney Docket Number	519-023-DV1

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/A.P./	1	6779017	B1	2004-08-17	Lamberton et al.	
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.P./

Receipt date: 01/15/2010	Application Number	12050648 12050648 - GAU: 2449
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	2008-03-18
	First Named Inventor	Michael Slocombe
(Not for submission under 37 CFR 1.99)	Art Unit	2449
	Examiner Name	PATEL, Ashokkumar B.
	Attorney Docket Number	519-023-DV1

/A.P./	1	NARTEN, T., IBM, "Neighbor Discovery for IP Version 6", RFC 2461, December 1998.	☐

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

EXAMINER SIGNATURE

Examiner Signature	/Ashokkumar Patel/	Date Considered	03/11/2010

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	ASHOK B PATEL	2449

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009	03/11/2010							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
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	8	✓	✓							
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	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13		✓							
	14		✓							
	15		✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	ASHOK B PATEL	2449

SEARCHED			
Class	Subclass	Date	Examiner
709	all	8/9/2006	AP

SEARCH NOTES		
Search Notes	Date	Examiner
Name search and Continuity search	6/1/09	AP
EAST search (also considered the search of 09/982721)	6/1/09	AP
Updated EAST search	3/1/10	AP
Searched IEEE	3/2/10	AP

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

PTO/SB/08a (07-09)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12050648
Filing Date	2008-03-18
First Named Inventor	Michael Slocombe
Art Unit	2449
Examiner Name	PATEL, Ashokkumar B.
Attorney Docket Number	519-023-DV1

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6779017	B1	2004-08-17	Lamberton et al.	

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Attorney Docket Number	519-023-DV1

	1	NARTEN, T., IBM, "Neighbor Discovery for IP Version 6", RFC 2461, December 1998.	☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

Electronic Patent Application Fee Transmittal	
Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	Thomas Joseph Osborne/Jenifer Weck
Attorney Docket Number:	0023-US-D1
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	6824471
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	Thomas Joseph Osborne/Jenifer Weck
Filer Authorized By:	Thomas Joseph Osborne
Attorney Docket Number:	0023-US-D1
Receipt Date:	15-JAN-2010
Filing Date:	18-MAR-2008
Time Stamp:	18:01:30
Application Type:	Utility under 35 USC 111(a)

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Payment Type	Credit Card
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RAM confirmation Number	4925
Deposit Account	503199
Authorized User	OSBORNE,THOMAS J.
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	IDS.PDF	413427 5f8256b5ddff43fb224a3ca7b6f3267601a84a51	no	5
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Filed (SB/08)	SB08_519-023-DV1.PDF	608120 e06b7a4ee70f2ab02047cc821574c8079719ab14	no	4
Warnings:					
Information:					
3	NPL Documents	Reference_NARTEN_IBM.PDF	3597045 860c84a6a8f97ff2d89d1e44daa086a2a6095788	no	87
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	30566 feddf68f558da03994f428da537ddaa4d66b0e99	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	4649158		

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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	: 12/050,648	Confirmation No.	: 9055
First Applicant	: Michael Slocombe	Art Unit	: 2449
Filed	: 18 March 2008	Examiner	: PATEL, Ashokkumar B.
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS		
Docket No.	: 519-023-DV1		
Customer No.	: 83579		

Via EFS-Web
Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form PTO-1449 during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☐ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; or (4) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☒ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant(s) on _____. The issue fee has not been paid herein.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below by an enclosed check or our deposit account.

☐ No fee is due.

☒ The $180 fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.197(c) or (d) is due.

☐ A check is enclosed for the required fee.

☒ Payment by credit card is submitted simultaneously herewith for the required fee.

☐ Please charge the required fee to our deposit account no. 503199.

☐ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to our deposit account no. 503199.

III
CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☒ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ An English language version of one or more non-English language documents.
- ☐ An English language equivalent application or patent of one or more non-English language applications or patents.
- ☐ An English language version of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ An English language abstract of one or more non-English language references.

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

V
REMARKS

☐ Pursuant to the doctrines established by the Court of Appeals for the Federal Circuit in *McKesson Information Solutions, Inc. v. Bridge Medical, Inc.*, 487 F.3d 897 (Fed. Cir. 2007) and *Dayco Products, Inc. v. Total Containment, Inc.*, 329 F.3d 1358 (Fed. Cir. 2003), Applicant(s) submit documents herewith reflecting the prosecution history of applications that Applicant(s) believe may be considered related to the present application.

It is respectfully requested that

(1) the Examiner sign the enclosed Form PTO/SB/08a to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) the citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant(s) shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant(s) shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant(s) as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant(s) shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant(s) as such.

Notwithstanding any statements by the Applicant(s), the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted this 6th day of January 2010.

Thomas J. Osborne, Jr.
Registration No. 39,796
Customer No. 83579
HENSLEY KIM & HOLZER, LLC
TEL: 720-377-0770
FAX: 720-377-0777

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant	: Michael Slocombe et al.	
Appln. No.	: 12/050,648	Confirmation No: 9055
Filed	: 18 March 2008	Group Art Unit: 2449
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORK	Examiner: Ashokkumar B. Patel Docket No. 0023-US-D1

AMENDMENT AND RESPONSE TO NON-FINAL OFFICE ACTION

Via EFS-Web
MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Non-Final Office Action mailed 9 June 2009 on the above-referenced application, please amend the above-identified application as follows:

Extension of Time Request is found on page 2 of this paper.

A listing of the claims is found on page 3 of this paper.

Remarks/Arguments begin on page 9 of this paper.

Extension of Time

Applicant hereby petitions for a two-month extension of time and is submitting the required fee herewith. Applicant believes no further fees or petitions are required, but should any fees or petitions be required, please consider this a request therefore and authorization to charge Deposit Account No. 50-5063 as necessary.

Claims:

The listing of claims below will replace the previous claims.

Listing of Claims:

1. (Currently Amended) A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said DNS servers all sharing a common anycast address;

(B) providing a plurality of content servers associated with the CDN, each of said content servers associated with at least one of said plurality of DNS servers, and each DNS server of said plurality of DNS servers having at least one content server associated therewith;

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain;

(D) responsive to a request to resolve a hostname in said content provider domain,

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server associated with an Internet Service Provider (ISP), said at least one other DNS server being authoritative for said content provider's domain; and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers ~~sites~~ associated with said one of said DNS servers.

2. (Original) The method as recited in claim 1 wherein at least some of said plurality of DNS servers are located at network Points of Presence (POPs).

3. (Original) The method as recited in claim 2 wherein each of said plurality of DNS servers is located at a network POP.

4. (Original) The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. (Original) The method as recited in claim 2 wherein said content servers are grouped into nodes, each node associated with one of said plurality of DNS servers.

6. (Original) The method as recited in claim 1 further comprising:

(E) at one of said identified content servers,

(e1) attempting to serve an object associated with the content provider.

7. (Original) The method as recited in claim 6 wherein said step (e1) of attempting comprises:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object; otherwise

(e12) obtaining the object from a content source and then serving the object.

8. (Original) The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. (Original) The method as recited in claim 7 wherein, if a valid version of said object is not available on said one of said identified content servers, said one of said identified content servers uses a table in order to ascertain where to obtain said object.

10. (Currently Amended) A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address;

(B) providing a plurality of content server sites, each of said content server sites being associated with one of said CDN DNS servers, and each CDN DNS server having at least one content server site associated therewith;

(C1) causing said common anycast address to be associated with a first domain associated with a first content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said first domain, and

(C2) causing said common anycast address to be associated with a second domain associated with a second content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said second domain;

(D1) responsive to a first request for first content associated with said first content provider, said first request including a first hostname in said first domain,

(d11) causing said first hostname to be resolved to said common anycast address by at least one DNS associated with an Internet Service Provider (ISP); and then

(d12) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said first hostname to identify a first content server site associated with said one of said CDN DNS servers; and then

(d13) attempting to serve said first content from a server in said content server site; and

(D2) responsive to a second request for second content associated with said second content provider, said second request including a second hostname in said second domain,

(d21) causing said second hostname to be resolved to said common anycast address by the at least one DNS associated with the ISP; and then

(d22) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said second hostname to identify a second content server site associated with said one of said CDN DNS servers; and then

(d23) attempting to serve said second content from a server in said second content server site.

11. (Currently Amended) A content delivery system for delivering content on behalf of a plurality of content providers, each of said content providers having at least one content provider domain associated therewith, the system comprising:

(A) a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address, and said CDN DNS servers being authoritative for said content provider domains associated with said plurality of content providers; ~~and~~

(B) a plurality of content server sites, each of said content server sites associated with at least one of said plurality of DNS servers, and each DNS server of said plurality DNS servers having at least one content server site associated therewith; ~~therewith, wherein~~

(C) at least one DNS associated with an Internet Service Provider (ISP); and

(D) a load balancing mechanism associated with each of the plurality of CDN DNS servers, said load balancing mechanism operable to analyze load characteristics associated with each of the plurality of content server sites, wherein

~~(C)~~ (D) responsive to a request to resolve a hostname in a particular content provider domain of said content provider domains, said request being initially resolvable to the anycast address by the at least one DNS associated with the ISP, said particular content provider domain corresponding to a particular content provider, said request to resolve a hostname being associated with an end-user request for content from said particular content provider domain, one of said plurality of CDN DNS servers sharing said common anycast address resolves said hostname in accordance with the load balancing mechanism to identify at least one of said content server sites associated with said one of said one of said CDN DNS servers, ~~and~~ wherein said content is served to said end-user from said identified content server site.

12. (Currently Amended) A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said DNS servers all sharing a common anycast address, at least some of said plurality of DNS servers being located at network Points of Presence (POPs);

(B) providing a plurality of content servers, each of said content servers associated with at least one of said plurality of CDN DNS servers, and each CDN DNS server of said plurality CDN DNS servers having at least one content server associated

therewith, and each of said plurality of content servers being associated with a network Point of Presence (POP);

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain;

(D) responsive to a request to resolve a hostname in said content provider domain,

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server associated with an Internet Service Provider (ISP), said at least one other DNS server being authoritative for said content provider's domain; and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers sites associated with said one of said DNS servers;

(E) at one of said identified content servers,

(e1) attempting to serve an object associated with the content provider by:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object; otherwise

(e12) obtaining the object from a content source and then serving the object.

13. (New) The method as recited in claim 1, wherein the step of (d2) further comprises:

determining a load metric for each of the plurality of content servers;

comparing the load metric to a predefined overload threshold; and

performing load balancing among the plurality of content servers if at least one load metric exceeds the overload threshold, wherein the step of resolving said hostname to identify at least one of said content servers is in accordance with the load balancing.

14. (New) The method as recited in claim 10, wherein the step of (d12) further comprises:

determining a load metric for each of the plurality of content server sites;

comparing the load metric to a predefined overload threshold; and

performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, wherein the step of resolving said first hostname to identify a first content server site is in accordance with the load balancing,

and wherein the step of (d22) further comprises:

determining a load metric for each of the plurality of content server sites;

comparing the load metric to a predefined overload threshold; and

performing load balancing among the plurality of content server sites if at least one load metric exceeds the overload threshold, wherein the step of resolving said second hostname to identify a second content server site is in accordance with the load balancing.

15. (New) The method as recited in claim 12, wherein the step of (d2) further comprises:

determining a load metric for each of the plurality of content server sites;

comparing the load metric of each of the plurality of content server sites to a predefined overload threshold; and

if a load metric associated with a specific content server site exceeds the overload threshold, performing load balancing by impeding the transmission of requests to the specific content server site.

Remarks

This Response is considered fully responsive to the Non-Final Office Action mailed June 9, 2009. In this Response, claims 1 and 10-12 have been amended, no claims have been canceled, and claims 13-15 have been added. Therefore, claims 1-15 remain pending in the Application. Reexamination and reconsideration are requested.

35 U.S.C. § 102 Rejection, McCanne

The Office Action has rejected claims 1-12 under 35 U.S.C. § 102(e) as purportedly being anticipated by U. S. Patent Publ. No. 2005/0010653 to McCanne (hereinafter "McCanne"). Applicant respectfully traverses these rejections for at least the following reasons.

Independent claims 1 (from which claims 2-9 depend) and 10-12 each essentially recite, *inter alia*, "providing a plurality of Domain Name System (DNS) servers associated with a Content Delivery Network (CDN), said DNS servers all sharing a common anycast address… and causing said hostname to be resolved to said common anycast address by at least one other DNS server associated with an Internet Service Provider (ISP)…" or a similar limitation.

McCanne generally discloses a system for federated redirection using content peering among multiple ISPs and one or more content backbones. The Examiner specifically references paragraphs [0134]-[0136] in McCanne as allegedly teaching the claim 1 limitation of "causing said hostname to be resolved to said common anycast address by at least one other DNS server associated with an Internet Service Provider (ISP), said at least one other DNS server being authoritative for said content provider's domain." Applicant respectfully disagrees with this reasoning.

From the onset, Applicant notes that the methods and systems described in the pending claims describe essentially a two-phase DNS process for routing a request to a content server: a) using an ISP DNS server to resolve the initial request to the anycast address associated with the CDN DNS servers, and b) using one of the CDN DNS servers (acting in accordance with the anycast scheme) to further resolve the request to at least one content server associated with that CDN DNS server (e.g., see FIG. 5). The advantage of such a system is that existing ISP DNS servers do not have to be replaced or otherwise reconfigured with anycast addresses (and/or load balancing mechanisms) as is the case with the APAR routing system described in McCanne. For instance, paragraph [0133] in McCanne is excerpted below:

> The APAR routing system described above can be used to effect one kind of content peering based on specialized DNS servers, which we call herein a "APAR-DNS server". In this model, the APAR-DNS server is configured with one or more APAR anycast addresses and thus appears as a name server on one or more CDNs. In other words, the APAR-DNS server is typically a single piece of physical infrastructure, either owned by the ISP where the device is situated or owned by a third-party that co-locates the equipment in the ISP's network, that supports multiple virtual CDNs that are owned by third party content service providers, or perhaps, by other ISPs.

As indicated in the paragraph above, the APAR routing system of McCanne utilizes a specially designed CDN DNS server situated within an ISP that is configured with an anycast address per each associated CDN. McCanne does not, however, describe the initial step of using an ISP DNS server to resolve the request to the anycast address as is recited in claim 1 step (d1). For at least these reasons, McCanne does not teach each and every limitation of claim 1. As such, claim 1 is patentable over McCanne and is in a condition for allowance. As claims 2-9 depend from allowable claim 1, claims 2-9 are also in a condition for allowance.

As independent claims 10-12 contain the same or similar limitations of allowable claim 1, these claims are also patentable over McCanne for at least the same reasons and are in a condition for allowance. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 1-12 and allow claims 1-12.

Claim 11

Claim 11 has been amended in part to include a load balancing mechanism and functionality associated therewith. Since McCanne is silent with respect to load balancing among content servers in a CDN, claim 11 is patentable over McCanne for at least this additional reason. Support for this amendment can be found throughout the Specification and Figures (e.g., paragraphs [0041]-[0045]).

New Claims

Claims 13-15 have been added in this Response. Support for these new claims can be found through the Specification and Figures (e.g., paragraphs [0041]-[0045]). Applicant

maintains that no new matter has been added and that these claims are patentable over the cited art of record for at least the reasons discussed above.

Conclusion

Claims 1-15 are currently pending in the application. Applicant has fully responded to each and every objection and rejection in the Office Action dated June 9, 2009 and believes that all pending claims are in condition for allowance. Applicant therefore requests that a timely Notice of Allowance be issued in this case.

If the Examiner should require any additional information or believes any issues could be resolved via a telephone interview, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

/JCS/

Date: November 9, 2009

Jonathan C. Siekmann
Registration No. 58,259
USPTO Customer No. 83579

LEVEL 3 COMMUNICATIONS, LLC
1025 Eldorado
Broomfield, Colorado 80021
Tel: 720-888-2140
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Electronic Patent Application Fee Transmittal	
Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	519-023-DV1
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	1252	1	490	490

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**490**

Electronic Acknowledgement Receipt	
EFS ID:	6421268
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	519-023-DV1
Receipt Date:	09-NOV-2009
Filing Date:	18-MAR-2008
Time Stamp:	19:35:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$490
RAM confirmation Number	5598
Deposit Account	505063
Authorized User	WIER,DAVID D
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		PA_Amendment_23_US_D1.pdf	62313 96bf26874a9228f60df2ff21fb5b36caf00e01f0	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Extension of Time	2	2
	Claims	3	8
	Applicant Arguments/Remarks Made in an Amendment	9	11

Warnings:

Information:

2	Fee Worksheet (PTO-875)	fee-info.pdf	31029 aa1bcbac3f97f4ebcf24c21e7757828525e5d220	no	2

Warnings:

Information:

Total Files Size (in bytes):	93342

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/050,648	Filing Date 03/18/2008	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	11/09/2009	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 15	Minus	** 20	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 4	Minus	***4	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DONNA D. SMALLS LOGAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/050,648	03/18/2008	Michael Slocombe	519-023-DV1	9055

83579 7590 06/09/2009

LEVEL 3 COMMUNICATIONS, LLC
c/o CPA Global
P.O. Box 52050
Minneapolis, MN 55402

EXAMINER	
PATEL, ASHOKKUMAR B	
ART UNIT	PAPER NUMBER
2449	

MAIL DATE	DELIVERY MODE
06/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	12/050,648	SLOCOMBE ET AL.	
	Examiner	Art Unit	
	ASHOK B. PATEL	2449	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-12 are subject to examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless-

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by McCanne (hereinafter McCanne) (US 2005/0010653).

Referring to claim 1,

McCanne teaches a method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said DNS servers all sharing a common anycast address (para. [0119], [0126]);

(B) providing a plurality of content servers, each of said content servers associated with at least one of said plurality of DNS servers, and each DNS server of said plurality of DNS servers having at least one content server associated therewith (para. [0120]);

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain(para. [0119], [0120], [0123], [0126]);

(D) responsive to a request to resolve a hostname in said content provider domain (para. [0133]),

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server, said at least one other DNS server being authoritative for said content provider's domain (para.[0134]-[0136]); and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers sites associated with said one of said DNS servers (para. [0148]).

Referring to claim 2,

McCanne teaches the method as recited in claim 1 wherein at least some of said plurality of DNS servers are located at network Points of Presence (POPs) (para. [0087], Fig. 16).

Referring to claim 3,

McCanne teaches the method as recited in claim 2 wherein each of said plurality of DNS servers is located at a network POP (Fig. 13).

Referring to claim 4,

McCanne teaches the method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP) (Fig. 13).

Referring to claim 5,

McCanne teaches the method as recited in claim 2 wherein said content servers are grouped into nodes, each node associated with one of said plurality of DNS servers (Fig. 13).

Referring to claim 6,

McCanne teaches the method as recited in claim 1 further comprising:

(E) at one of said identified content servers,

(e1) attempting to serve an object associated with the content provider (para. [0119], [0120], [0123], [0126]).

Referring to claim 7,

McCanne teaches the method as recited in claim 6 wherein said step (e 1) of attempting

comprises:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object; otherwise

(e12) obtaining the object from a content source and then serving the object (para. [0087], [0186]).

Referring to claim 8,

McCanne teaches the method as recited in claim 7 wherein, said content source is an origin server associated with said content provider (para. [0087], [0186],[0188]).

Referring to claim 9,

McCanne teaches the method as recited in claim 7 wherein, if a valid version of said object

is not available on said one of said identified content servers, said one of said identified content servers uses a table in order to ascertain where to obtain said object (para. [0087], [0186],[0188]).

Referring to claim 10,

McCanne teaches a method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address (para. [0119], [0126]);

(B) providing a plurality of content server sites, each of said content server sites being associated with one of said CDN DNS servers, and each CDN DNS server having at least one content server site associated therewith (para. [0120]);

(C1) causing said common anycast address to be associated with a first domain associated with a first content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said first domain (para. [0119], [0120], [0122]-, [0126]), and

(C2) causing said common anycast address to be associated with a second domain associated with a second content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said second domain (para. [0119], [0120], [0122]-, [0126]);

(D1) responsive to a first request for first content associated with said first content provider, said first request including a first hostname in said first domain (para. [0119], [0120], [0122]-, [0126]),

(d11) causing said first hostname to be resolved to said common anycast address (para. [0119], [0120], [0122]-, [0126]); and then

(d12) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said first hostname to identify a first content server site associated with said one of said CDN DNS servers (para. [0119], [0120], [0122]-, [0126]); and then

(d13) attempting to serve said first content from a server in said content server site (para. [0119], [0120], [0122]-, [0126]); and

(D2) responsive to a second request for second content associated with said second content provider, said second request including a second hostname in said second domain (para. [0119], [0120], [0122]-, [0126]),

(d21) causing said second hostname to be resolved to said common anycast address (para. [0119], [0120], [0122]-, [0126]); and then

(d22) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said second hostname to identify a second content server site associated with said one of said CDN DNS servers (para. [0119], [0120], [0122]-, [0126]); and then

(d23) attempting to serve said second content from a server in said second content server site (para. [0119], [0120], [0122]-, [0126]).

Referring to claim 11,

McCanne teaches a content delivery system for delivering content on behalf of a plurality of content providers, each of said content providers having at least one content provider domain associated therewith, the system comprising:

(A) a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address, and said CDN DNS servers being authoritative for said content provider domains associated with said plurality of content providers (para. [0119], [0120], [0122]- [0126]); and

(B) a plurality of content server sites, each of said content server sites associated with at least one of said plurality of DNS servers, and each DNS server of said plurality DNS servers having at least one content server site associated therewith (para. [0119], [0120], [0122]-[0126]), wherein

(C) responsive to a request to resolve a hostname in a particular content provider domain of said content provider domains, said particular content provider domain corresponding to a particular content provider, said request to resolve a hostname being associated with an end-user request for content from said particular content provider domain, one of said plurality of CDN DNS servers sharing said common anycast address resolves said hostname to identify at least one of said content server sites associated with said one of said one of said CDN DNS servers, and wherein said content is served to said end-user from said identified content server site (para. [0119], [0120], [0122]- [0126]).

Referring to claim 12,

McCanne teaches a method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said DNS servers all sharing a common anycast address, at least some of said plurality of DNS

servers being located at network Points of Presence (POPs) (para. [0119], [0120], [0122]-[0126], para. [0087], Fig. 16);

(B) providing a plurality of content servers, each of said content servers associated with at least one of said plurality of CDN DNS servers, and each CDN DNS server of said plurality CDN DNS servers having at least one content server associated therewith, and each of said plurality of content servers being associated with a network Point of Presence (POP) (para. [0119], [0120], [0122]- [0126], para. [0087], Fig. 16);

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain (para. [0119], [0120], [0122]- [0126]);

(D) responsive to a request to resolve a hostname in said content provider domain (para. [0119], [0120], [0122]- [0126]),

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server, said at least one other DNS server being authoritative for said content provider's domain(para.[0134]-[0136]);; and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers sites associated with said one of said DNS servers (para.[0134]-[0136]);; [0148]).;

(E) at one of said identified content servers (para. [0087], [0186],[0188])..,

(e1) attempting to serve an object associated with the content provider by:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object (para. [0087], [0186],[0188]).; otherwise

(el2) obtaining the object from a content source and then serving the object (para. [0087], [0186],[0188])..

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASHOK B. PATEL whose telephone number is (571)272-3972. The examiner can normally be reached on 6:30 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu Nguyen can be reached on 571-272-6967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ashok B. Patel/

Primary Examiner, Art Unit 2449

Notice of References Cited	Application/Control No. 12/050,648	Applicant(s)/Patent Under Reexamination SLOCOMBE ET AL.	
	Examiner ASHOK B. PATEL	Art Unit 2449	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0010653	01-2005	McCanne, Steve	709/219
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	ASHOK B PATEL	2449

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/02/2009								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12050648	SLOCOMBE ET AL.
	Examiner	Art Unit
	ASHOK B PATEL	2449

SEARCHED			
Class	Subclass	Date	Examiner
709	all	8/9/2006	AP

SEARCH NOTES		
Search Notes	Date	Examiner
Name search and Continuity search	6/1/09	AP
EAST search (also considered the search of 09/982721)	6/1/09	AP

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

PTO/SB/08A (09-06)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 11

Complete if Known	
Application Number	12/050-648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 3 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 4 | of | 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 5 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unasigned
Attorney Docket Number	519-023-DV1

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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 6 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 7 | of | 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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Sheet 8 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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Sheet 9 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
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Sheet 10 of 11

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Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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Examiner Signature	/Ashokkumar Patel/	Date Considered	06/03/2009

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EAST Search History

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S198	2	"7043543".pn..pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/06/03 06:54
S197	2	McCanne and ("20050010653")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/06/03 06:45
S196	12	DNS adj servers same web adj cache and anycast	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/06/01 15:15
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S156	44	anycast same load same balanc$5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/12 10:11
S155	42	anycast same DNS	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/12 10:07
S154	5	09/810148	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/12 09:17
S153	26	anycast near5 rout$5 same cache	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/12 09:15
S152	146	anycast near5 rout$5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/12 09:13
S151	6	anycast same load near3 balanc$5 same metri$5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 15:32

S150	28	cache same load near3 balanc$5 same metri$5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 15:24
S149	25	edge near3 cache same load near3 balanc$5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 15:18
S148	4	"20020188259"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 14:19
S147	102	(BGP (border adj gateway adj protocol)) same load near2 balanc$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 13:19
S146	19	(BGP (border adj gateway adj protocol)) adj3 router same load near2 balanc$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 13:10
S145	4	(BGP (border adj gateway adj protocol)) adj router same load near2 balanc$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 13:10
S144	1	(BGP (border adj gateway adj protocol)) adj router same load near2 balanc$5 same server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 13:10
S143	11	(BGP (border adj gateway adj protocol)) adj router and anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:54
S142	0	advertis$5 same (BGP (border adj gateway adj protocol)) adj router and anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:54

S141	29	advertis$5 same address same (BGP (border adj gateway adj protocol)) adj router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:51
S140	79	advertis$5 same (BGP (border adj gateway adj protocol)) adj router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:50
S139	0	advetis$5 same (BGP (border adj gateway adj protocol)) adj router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:50
S138	277	(BGP (border adj gateway adj protocol)) adj router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:50
S137	622	(BGP (border adj gateway adj protocol)) near2 router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:50
S136	906	(BGP (border adj gateway adj protocol)) near5 router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:49
S135	1978	(BGP (border adj gateway adj protocol)) same router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:49
S134	2	"6597777".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 12:47
S133	1	CATEGORIZ$5 near4 e-mail NEAR4 attachment	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 11:11

S132	1	CATEGORIZ$5 near4 attachment same e-mail	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 11:09
S131	17	(BGP (border adj gateway adj protocol)) same anycast same router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 11:01
S130	21	resolv$5 near4 anycast adj address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:54
S129	2	public$5 near4 anycast adj address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:53
S128	0	publici$5 near4 anycast adj address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:53
S127	2	"6272523".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:52
S126	36	(advertis$5 publish$5) near6 anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:36
S125	21	(advertis$5 publish$5) near6 anycast adj address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:34
S124	27	(advertis$5 publish$5) near6 anycast and cache	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:24

S123	8	Domain adj name adj system same anycast and cache	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 10:00
S122	0	Domain adj name adj system same cache same anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 09:59
S121	26	Domain adj name adj system and anycast adj address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 09:50
S120	7	Domain adj name adj system same anycast adj address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 08:51
S119	176	Domain adj name adj system same cache same servers	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 08:51
S118	5466	Domain adj name adj system	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 08:51
S117	2	"6721784 ".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 08:46
S116	2	"6289212".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 08:42
S115	2	"20030093509"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/11 08:31

S114	2	"20050144321"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 15:07
S113	2	"6748020".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 14:58
S112	19	virtual adj DNS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:50
S111	3	virtual adj DNS same cache	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:45
S110	29	DNS with anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:30
S109	3	virtual same edge same dns same cache	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:29
S108	4	10/642475	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:22
S107	0	virtual10/642475	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:22
S106	2	virtual near5 DNS same cache and 09/788281	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:03

S105	17	virtual near5 DNS same cache	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 13:00
S104	3	virtual near5 DNS same cache and anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 12:59
S103	1	virtual adj DNS same cache same anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 12:59
S102	21	RFC adj "1546"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 12:56
S101	19	(broadcast$5 publish45) with anycast with address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 12:54
S100	38	(advertis$5) with anycast with address	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 11:38
S99	29	DNS with anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 11:31
S98	1282	mobile adj2 router	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 10:53
S97	540	mobile adj2 proxy	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 10:52

S96	1	09/909711 and anycast	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 10:46
S95	7	09/909711	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 10:39
S94	3	DNS with anycast with cache	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 10:36
S93	2	"6687731".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 10:33
S92	12	"6687731"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/03/10 10:33
S91	2	"6976079".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/29 11:25
S90	2	"6345288".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/29 11:08
S89	3	"20010034771"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/29 11:05
S88	2	"20020161918"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/29 09:24

S87	49	BGP and anycast	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/25 20:40
S86	18	BGP same anycast	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/25 20:36
S85	3	caching same techniques same even same typically same achieve	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/25 20:01
S84	4411	yates.in.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/25 20:00
S83	19004	yates	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/25 20:00
S82	0	"6167438.pn."	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/25 19:59
S81	2	"6167438.pn.", "6687731".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/25 19:58
S80	2	"6397673".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/20 16:37
S79	0	"67397673".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/20 16:37
S78	2	"6752014".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/20 16:34

S77	3	"3,334,518".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/20 16:20
S76	3	"4,053,306".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/20 16:20
S75	17	cache same geographic$5 same load adj balanc$5 same DNS	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/08/20 15:06
S74	2	(ashok near4 patel).xa. and flynn and VPN	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 12:59
S71	19	(ashok near4 patel).xa. and flynn	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 12:59
S73	2	(ashok near4 patel).xa. and follansbee and VPN	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 12:58
S72	50	(ashok near4 patel).xa. and follansbee	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 12:58
S70	2	09/844759	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 12:52
S69	2	09/844856	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 09:02

S68	1	09/843789	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 08:57
S67	1	"11/499182"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 08:56
S60	3	"10/658898"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 08:23
S66	103	(CDN (Content adj distribution adj network)) and DNS adj server	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 07:48
S65	5606	(CDN (Content adj distribution adj network))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 07:47
S64	3	"20050033858"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/24 07:44
S63	2	"09/753454"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/22 13:21
S62	2	"20020109975"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/22 09:26
S61	2	"7068596".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/22 09:26
S57	2	"6675386".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/22 09:25

S59	2	"6300972".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/22 08:27
S58	2	"6675386".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/22 08:11
S31	2	"6266335".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/22 08:09
S56	7	("2001/0056416").URPN.	USPAT	OR	OFF	2008/01/18 14:51
S55	2	"6108703".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/18 14:27
S54	35	anycast near5 address and (BGP (border adj gateway adj protocol))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/18 14:26
S53	35	anycast near5 address and (BGP (border adj gateway adj protocol))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/18 13:38
S52	7	anycast near5 address same (BGP (border adj gateway adj protocol))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/01/18 13:38
S50	56	advertis$5 near5 cache near4 server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/10/10 16:40

S51	2	advertis$5 near5 cache near4 server same load	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/10/10 15:15
S49	0	(ceas$5) same advertis$5 near5 cache near4 server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/10/10 15:15
S47	0	(ceas$5) near5 advertis$5 near5 cache near4 server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/10/10 15:15
S48	0	(stop$5) near5 advertis$5 near5 cache near4 server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/10/10 15:14
S46	0	(ceas$5) near5 advertis$5 near5 cache near4 server	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/10/10 15:14
S45	3	10/931774	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/10/10 15:13
S44	1	"09/950559"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/05 09:51
S43	0	"09950559"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/05 09:51
S21	5	09/909711	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/05 09:51

S30	1	(distribut$5 adj3 cache adj3 (server)) near7 (address) same (DNS (domain adj name adj server))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:24
S29	0	publish$7 near5 (distribut $5 adj3 cache adj3 (server)) near7 (address) same (DNS (domain adj name adj server))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:24
S28	0	advertis$7 near5 (distribut $5 adj3 cache adj3 (server)) near7 (address) and (DNS (domain adj name adj server))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:24
S27	0	advertis$7 near5 (distribut $5 adj3 cache adj3 (server)) near7 (address) same (DNS (domain adj name adj server))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:24
S26	0	(combin$5) near5 (DNS (domain adj name adj server)) with (distribut$5 adj3 cache adj3 (server))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:20
S25	0	(DNS (domain adj name adj server)) same (associat $7) same (distribut$5 adj3 cache adj3 (server))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:19
S24	0	(DNS (domain adj name adj server)) same (associat $7) same (distribut$5 adj3 cache adj3 (server))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:18
S23	0	(DNS (domain adj name adj server)) same (integral $5 associat$7) same (distribut$5 adj3 cache adj3 (server))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 16:18
S22	1	(DNS (domain adj name adj server)) and (distribut $5 adj3 cache adj3 (server)) and S21	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 15:39

S20	3	(DNS (domain adj name adj server)) same (distribut $5 adj3 cache adj3 (server))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 14:23
S19	0	(authoritative) near4 (DNS (domain adj name adj server)) same (distribut$5 adj3 cache adj3 (server))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 14:13
S14	200	(authoritative) near4 (DNS (domain adj name adj server))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 14:13
S18	5	(common adj3 address) and (distribut$5 adj3 cache adj3 (server system))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 14:12
S17	0	(common adj3 address) and (anycast adj3 address) and (distribut$5 adj3 cache adj3 (server system))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 14:10
S16	1	(authoritative) near4 (DNS (domain adj name adj server)) and (common adj3 address) and (anycast adj3 address)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 14:09
S15	200	(authoritative) near4 (DNS (domain adj name adj server))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 14:08
S1	0	McCanne and (2005/0010653)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/24 13:33
S13	5	(co$1locat$5) near7 (DNS) near5 (cache near3 server)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/09 10:15
S12	56	advertis$5 near10 router near15 (BGP (border adj Gateway adj protocol))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/09 10:15

S11	0	advertis$5 near4 anycast near6 router near15 (BGP (border adj Gateway adj protocol))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/09 10:07
S10	1	10/912840	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/09 10:06
S9	12	(load near3 balanc$6) and (geographical$5 near8 cache near4 server) and "709"/$.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/09 10:05
S6	6	(load near3 balanc$6) same (geographical$5 near8 cache near4 server)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/09 07:29
S8	119	Anycast adj address	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/09 07:18
S7	20	("5933849" | "5935207" | "6026474" | "6070191" | "6167438" | "6167446" | "6185601" | "6205481" | "6286084" | "6330561" | "6330605" | "6330606" | "6338117" | "6377980" | "6377991" | "6405252" | "6408362" | "6438652" | "6502175" | "6532492").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/09 07:18
S4	11	((border adj gateway adj protocol)(BGP)) and (geographical$5 near8 cache near4 server)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/08 15:44
S5	4	09/909711	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/08 13:56
S3	0	((border adj gateway adj protocol)(BGP)) and (geographical$5 near8 cache near4 server) and (common near3 address)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/08 13:50

S2	1	McCanne and (10/912840)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/12/08 08:57

6/3/2009 10:23:36 AM
C:\Documents and Settings\apatel3\My Documents\EAST\Workspaces\12050648.wsp

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
12/050,648		2456	

OC000000036141955

Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 83579 on 05/22/2009

- **Correspondence Address**
- **Maintenance Fee Address**
- **Power of Attorney Address**

The address of record for Customer Number 83579 is:

83579
LEVEL 3 COMMUNICATIONS, LLC
1025 ELDORADO BLVD.
BROOMFIELD, CO 80021

PART 1 - ATTORNEY/APPLICANT COPY
page 1 of 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	: 12/050,648	Confirmation No.	: 9055
First Applicant	: Michael Slocombe et al.	Art Unit	: 2155
Filed	: 18 March 2008	Examiner	: Unassigned
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS		
Docket No.	: 519-023-DV1		
Customer No.	: 69693		

Via EFS-Web
Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT
PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form PTO-1449 during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☒ have been previously furnished to the Office in prior application No. 09/982,721, filed 10/18/2001, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☐ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; or (4) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant(s) on _____. The issue fee has not been paid herein.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below by an enclosed check or our deposit account.

☒ No fee is due.

☐ The $_____ fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.197(c) or (d) is due.

☐ A check is enclosed for the required fee.

☐ Please charge the required fee to our deposit account no. 503199. A duplicate copy of this information disclosure statement is enclosed.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to our deposit account no. 503199.

III
CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(c)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant(s) state as follows:

☐ No concise explanation is required since all cited references are in English.

☒ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609(III)(A)(3) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☒ One or more English language abstracts for the non-English language references have been previously furnished to the Office in prior application No. 09/982,721, filed 10/18/2001, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited abstracts are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

V
REMARKS

☐ Pursuant to the doctrines established by the Court of Appeals for the Federal Circuit in *McKesson Information Solutions, Inc. v. Bridge Medical, Inc.*, 487 F.3d 897 (Fed. Cir. 2007) and *Dayco Products, Inc. v. Total Containment, Inc.*, 329 F.3d 1358 (Fed. Cir. 2003), Applicant(s) submit documents herewith reflecting the prosecution history of applications that Applicant(s) believe may be considered related to the present application.

It is respectfully requested that

(1) the Examiner sign the enclosed Form PTO/SB/08a to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) the citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant(s) shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant(s) shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant(s) as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant(s) shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant(s) as such.

Notwithstanding any statements by the Applicant(s), the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted this 3rd day of October 2008.

/Thomas J. Osborne/

Thomas J. Osborne, Jr.
Registration No. 39,796
Customer No. 69693
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cc: Client
Docketing

PTO/SB/08A (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		20010029525	10-11-2001	Lahr	
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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 2 | of | 11

Complete if Known	
Application Number	12/050-648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 3 | of | 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 4 | of | 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 5 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
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Art Unit	2155
Examiner Name	Unasigned
Attorney Docket Number	519-023-DV1

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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 6 | of | 11

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Filing Date	18 March 2008
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Art Unit	2155
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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 7 | of | 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
First Named Inventor	Michael Slocombe, et al.
Art Unit	2155
Examiner Name	Unassigned
Attorney Docket Number	519-023-DV1

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	Filing Date	18 March 2008
	First Named Inventor	Michael Slocombe, et al.
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Sheet 8 of 11	*Attorney Docket Number*	519-023-DV1

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(Use as many sheets as necessary)

Sheet 9 of 11

Complete if Known	
Application Number	12/050,648
Filing Date	18 March 2008
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Application Number	12/050,648
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Sheet 11 of 11

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Application Number	12/050,648
Filing Date	18 March 2008
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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
[1] Applicant's unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	: 12/050,648	Confirmation No.	: 9055
First Applicant	: Michael Slocombe, et al.	Art Unit	: 2155
Filed	: 18 March 2008	Examiner	: Unassigned
Title	: Content Request Routing and Load Balancing for Content Distribution Networks		
Docket No.	: 519-023-DV1		
Customer No.	: 69693		

Via EFS-Web
MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CONCISE EXPLANATION OF NON-ENGLISH REFERENCES

Sir:

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), Applicant herewith submits a concise explanation of the relevance, as it is presently understood by the undersigned, of each patent, publication, or other information listed that is not in the English language for the attached information disclosure statement filed under 37 C.F.R. § 1.97.

Respectfully submitted,

Date: October 3, 2008

/Thomas J. Osborne, Jr./

Thomas J. Osborne, Jr.
Registration No. 39,796
Customer No. 69693
HENSLEY KIM &HOLZER, LLC
TEL: 720-377-0770
FAX: 720-377-0777

Attached: Explanations in English of six (6) Japanese publications

SERVER SYSTEMS FOR INTERNET

Publication No. JP10-027148
Publication Date: January 27, 1998
Application Number: 08-180722
Applicant: Hitachi Ltd.

Explanation:

To decentralize access in a server group and back up data against fault occurrence without forcing a user to do special operation by selecting an optimum server which sends information out of one information transmission server group each time the information transmission server group is accessed.

This system has information transmission server groups 1091-109N which send information over the Internet 111 and a management server 101 which manages access from terminals. The information transmission server groups 1091-109N each consists of servers having the same information. The management server 101 has a management table containing host names given to the server groups 1091-109N and the communication addresses and selection information of the respective servers. When a communication address corresponding to a host name is requested, one of the communication addresses stored in the management table is selected and sent to the request source according to the contents of the selection information.

COMMUNICATION CONNECTION METHOD WITH A PLURALITY OF HOSTS HAVING COMMON IDENTIFIER

Publication No.: JP10-093552
Publication Date: April 10, 1998
Application No.: 08-240114
Applicant: Nippon Telegraph & Telephone Corporation

Explanation:

To maintain quality of continuous service by distributing the load on a faulty or overloaded host to other hosts so as to relive the load on the distributed source host and to change the communicating party without letting the client host to be aware of the change.

A common identifier is provided to a server group 12 and in the case of communication of other client host 14 with the server group 12, the client uses the common identifier (common domain name) to access the server group 12, then a connection destination is changed to other host 12-ij in the server group 12 based on a connection destination revision algorithm 15 when an opposite party 12-i1 is faulty or overloaded so as to enable the transmission without making the client host 14 to be aware of the change.

DECOMPOSITION OF NAME DEPENDENT ON CONTEXT

Publication No.: JP10-126445
Publication Date: May 15, 1998
Application Number: 09-187282
Applicant: Sun Microsystems Inc.

Explanation:

To provide the system that takes a context of a request party into account in a process of name decomposition.

The multiplex binding name decomposition system is provided with a name resolver, which is connected to a request party system or a recipient system or to the both, and a request to a prescribed service or a domain name is decomposed into a proper IP address. The recipient of an intended request is decomposed into information relating to a sender (e.g. geographical location and specific request party identifier or the like), information relating to the intended recipient (e.g. balance of load at the receiver side, kind of service or the like), information included in the request itself (e.g. kind of requested service) and other information (random selection of time, date and reception or the like) based on a prescribed criterion.

METHOD AND DEVICE FOR REPEATING AND CONVERTING INFORMATION

Publication Number: JP10-171727
Publication Date: June 26, 1998
Application No.: 08-328583
Applicant: Nippon Telegraph & Telephone Corporation

Explanation:

To provide a method and device for repeating and converting information by which the setting of a hyperlink, the change of a URL, and the definition of the hyperlink to the same URL corresponding to plural same description can appropriately be operated. SOLUTION: When an information request from a reception side computer C1 is received by a request repeating part 201 of a communication network, the information request is transmitted to a transmission side computer C2, and information from the transmission side computer C2 in response to the information request is received by a document file receiving part 202. Then, whether or not this received information is text information is judged by a document judging part 203, and when it is the text information data, a retrieval character string from a text document is converted into a displacement character string by using a conversion chart 205 in which the correspondence of the retrieval character string to the displacement character string is stored, and this result is transmitted from a document file transmitting part 206 to a reception side computer C1.

ELECTRONIC MAIL MULTIPLEXING SYSTEM AND COMMUNICATION CONTROL METHOD IN THE SYSTEM

Publication No.: JP07-066829
Publication Date: March 10, 1995
Application Number: 05-162529
Application: Kawasaki Steel Corporation

Explanation:

To distribute loads between multiplexed electronic mail server equipments by continuing service when at least one of plural mail server equipments is in operation.

Each electronic mail server equipment is provided with a function copying a content of a mail box or an electronic bulletin board provided to each of multiplexed electronic mail server equipments 1A-1N. A message exchange means 7 of a counter electronic mail server equipment in a client equipment 11 automatically selects one of the electronic mail server equipments in operation and connects the both. Furthermore, the client equipment selects the electronic mail server equipment with least load based on the information of the electronic mail server equipment.

DOMAIN NAME SOLVING METHOD AND DOMAIN NAME SOLVING SYSTEM

Publication Number: JP 2001-053793
Publication Date: February 23, 2001
Application No.: 11-223763
Applicant: Nippon Telegraph & Telephone Corporation

Explanation:

To return an IP address fitted to a client by permitting the client to contain additional information on the client in a question packet and permitting a server to select the IP address from the candidates of the plural IP addresses based on additional information.

A client 10 generates a question packet 100 containing a domain name and a postal code with a packet generation part 11 and an additional information addition part 12 and transmits it to a domain name solving server 20 from a packet transmission/reception part 13. The domain name solving server 20 preserves information on the IP addresses of plural content servers 110, 111 and 112, which are managed by the same domain name, in a domain address corresponding part 22 and preserves additional information in an address addition information part 23. The domain name solving server 20 refers to the corresponding table of the question packet 100 received by a question return part 24, the domain address corresponding part 22 and the address addition information part 23 and decides the returned IP address.

Electronic Acknowledgement Receipt	
EFS ID:	4059302
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	69693
Filer:	Thomas Joseph Osborne/Sara McPeak
Filer Authorized By:	Thomas Joseph Osborne
Attorney Docket Number:	519-023-DV1
Receipt Date:	03-OCT-2008
Filing Date:	18-MAR-2008
Time Stamp:	17:19:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement Letter	IDS_Certificate_519_023_DV1.PDF	452001 fb40f2fcc8db899d4d81d8ad7829ce006a03dc76	no	5
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Filed (SB/08)	IDS_1449_Form_519_023_DV1.PDF	1779336 a806deb658311af7f0046f9a7d3e3c25cacc8471	no	11
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Miscellaneous Incoming Letter	Concise_Explanation_of_Non_English_References_519_023_DV1.PDF	449121 7d16aa197b6106f3c0b7a3806c238d840ce92106	no	7
Warnings:					
Information:					
		Total Files Size (in bytes):	2680458		

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/050,648	03/18/2008	Michael Slocombe	519-023-DV1

CONFIRMATION NO. 9055

69693
HENSLEY KIM & HOLZER, LLC
1660 LINCOLN STREET
SUITE 3000
DENVER, CO 80264

PUBLICATION NOTICE

OC000000032269665

Title:CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

Publication No.US-2008-0235400-A1
Publication Date:09/25/2008

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/050,648	03/18/2008	2155	1240	519-023-DV1	12	4

CONFIRMATION NO. 9055

UPDATED FILING RECEIPT

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HENSLEY KIM & HOLZER, LLC
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DENVER, CO 80264



Date Mailed: 06/19/2008

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Applicant(s)

Michael Slocombe, Acton, MA;
Matthew Miller, Plainville, MA;
Casey Ajalat, North Billerica, MA;
Vincent A. Fuller III, Palo Alto, CA;

Assignment For Published Patent Application

Level 3 Communications, LLC, Broomfield, CO

Power of Attorney: The patent practitioners associated with Customer Number 69693

Domestic Priority data as claimed by applicant

This application is a DIV of 09/982,721 10/18/2001

Foreign Applications

If Required, Foreign Filing License Granted: 03/25/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/050,648**

Projected Publication Date: 09/25/2008

Non-Publication Request: No

Early Publication Request: No

Title

CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

Preliminary Class

709

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12/050,648	03/18/2008	Michael Slocombe	519-023-DV1

CONFIRMATION NO. 9055

69693
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DENVER, CO 80264

POA ACCEPTANCE LETTER

OC000000030499342

Date Mailed: 06/17/2008

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/10/2008.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/ddinh/

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I hereby appoint:

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SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	July 19, 2007
Name	Robert M. Yates	Telephone	(720) 888-2283
Title	Senior Vice President		

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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Michael Slocombe; Matthew Miller; Casey Ajalat; and Vincent A. Fuller, III

Application No./Patent No.: 12/050,648 Filed/Issue Date: 18 March 2008

Entitled: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

Level 3 Communications, LLC, a limited liability company of Delaware

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

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2. ☐ an assignee of less than the entire right, title, and interest

The extent (by percentage) of its ownership interest is _____ %

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/Damon Rieth/ 09 April 2008

Signature Date

Damon A. Rieth 720-377-0770

Printed or Typed Name Telephone Number

Attorney for Assignee

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

CONTINUATION SHEET – STATEMENT UNDER 37 CFR §3.73(b) 01.29.2008

Application No.: 12/050,648
Inventors: Michael Slocombe et al.
Filed: 18 March 2008, 2008

Chain of Title:

4. From Level 3 Communications, Inc. To: Level 3 Communications, LLC
The document was recorded in the United States Patent and Trademark Office on 3.12.07 at Reel 018989 Frame 0678.

PTO/SB/22 (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2006 *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) 519-023-DV1
Application Number 12/050,648	Filed 18 March 2008
For CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	
Art Unit Unassigned	Examiner Unassigned

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☒ One month (37 CFR 1.17(a)(1))	$120	$60	$120.00
☐ Two months (37 CFR 1.17(a)(2))	$450	$225	$_____
☐ Three months (37 CFR 1.17(a)(3))	$1020	$510	$_____
☐ Four months (37 CFR 1.17(a)(4))	$1590	$795	$_____
☐ Five months (37 CFR 1.17(a)(5))	$2160	$1080	$_____

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card.

☒ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any extra fees that may be required, or credit any overpayment, to Deposit Account Number 503199 .

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 52,167

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34. _____ .

/ | 10 June 2008

Signature | Date

Damon A. Rieth | 720-377-0770

Typed or printed name | Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ Total of one form is submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETEDFORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Applicant	: Michael Slocombe et al.	
Appln. No.	: 12/050,648	Confirmation No: 9055
Filed	: 18 March 2008	Group Art Unit: 2155
Title	: CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRITUTION NETWORKS	Examiner: Unassigned

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Via EFS-Web
MAIL STOP MISSING PARTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Notice to File Corrected Application Papers dated 27 March 2008 (the "Notice") required submission of replacement drawings in compliance with 37 C.F.R. §§ 1.84 and 1.121(d).

In response thereto, Applicant submits replacement sheets for Figs. 1-5 originally filed with the USPTO for the instant application. The replacement drawings, Figs. 1-5, have been amended to allow for proper reproduction of the figures. Applicant believes the replacement drawings are fully responsive to the Notice. With these replacement drawings, no new matter has been added to the above-captioned application.

The Applicant believes no further fees or petitions are required. However, if any such petitions or fees are necessary, please consider this a request therefor and authorization to charge Deposit Account No. 50-3199 accordingly. Any deficiency or overpayment may also be applied to Deposit Account No. 50-3199.

If the Examiner should have any questions, please contact the undersigned attorney.

Dated: 5/15/08

Respectfully submitted,

/ Damon A. Rieth /

Damon A. Rieth/Registration No. 52,167
Attorney for Applicant
USPTO Customer No. 69693

Hensley Kim & Holzer, LLC
1660 Lincoln Street, Suite 3000
Denver, Colorado 80264
Tel: 720-377-0770
Fax: 720-377-0777

DAR/sbm

Attachment: Replacement Drawings Figs. 1-5

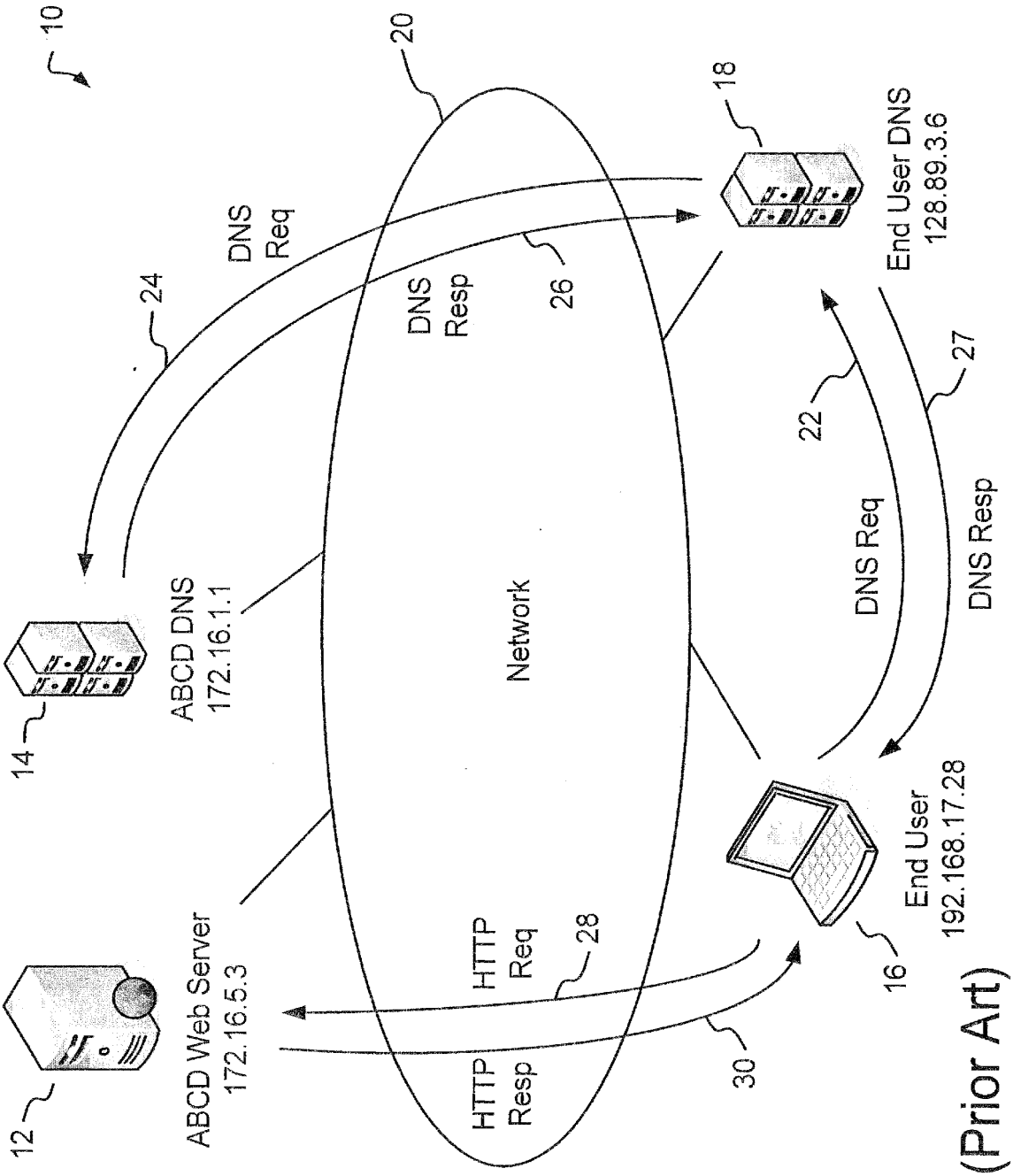


FIG. 1 (Prior Art)

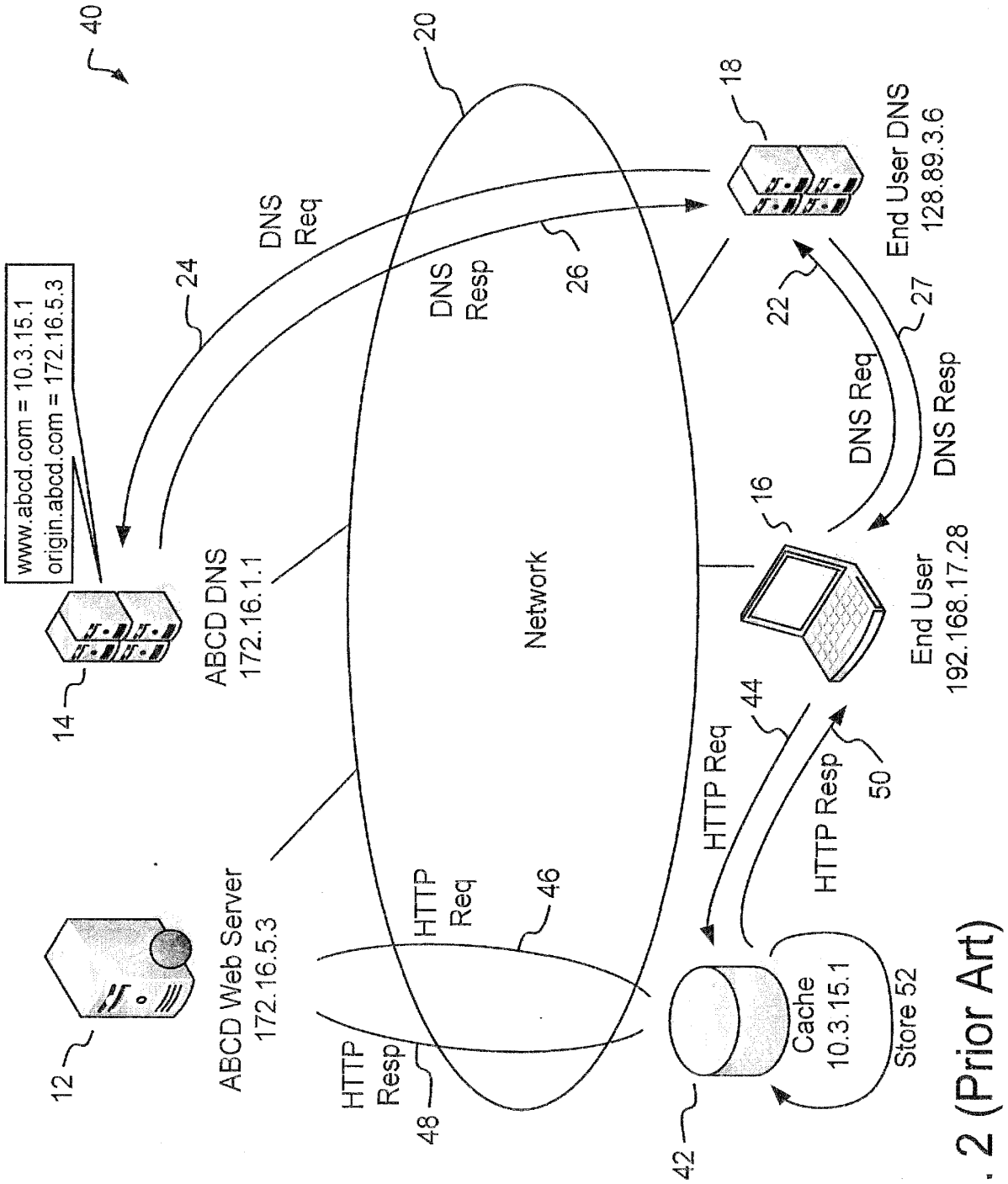


FIG. 2 (Prior Art)

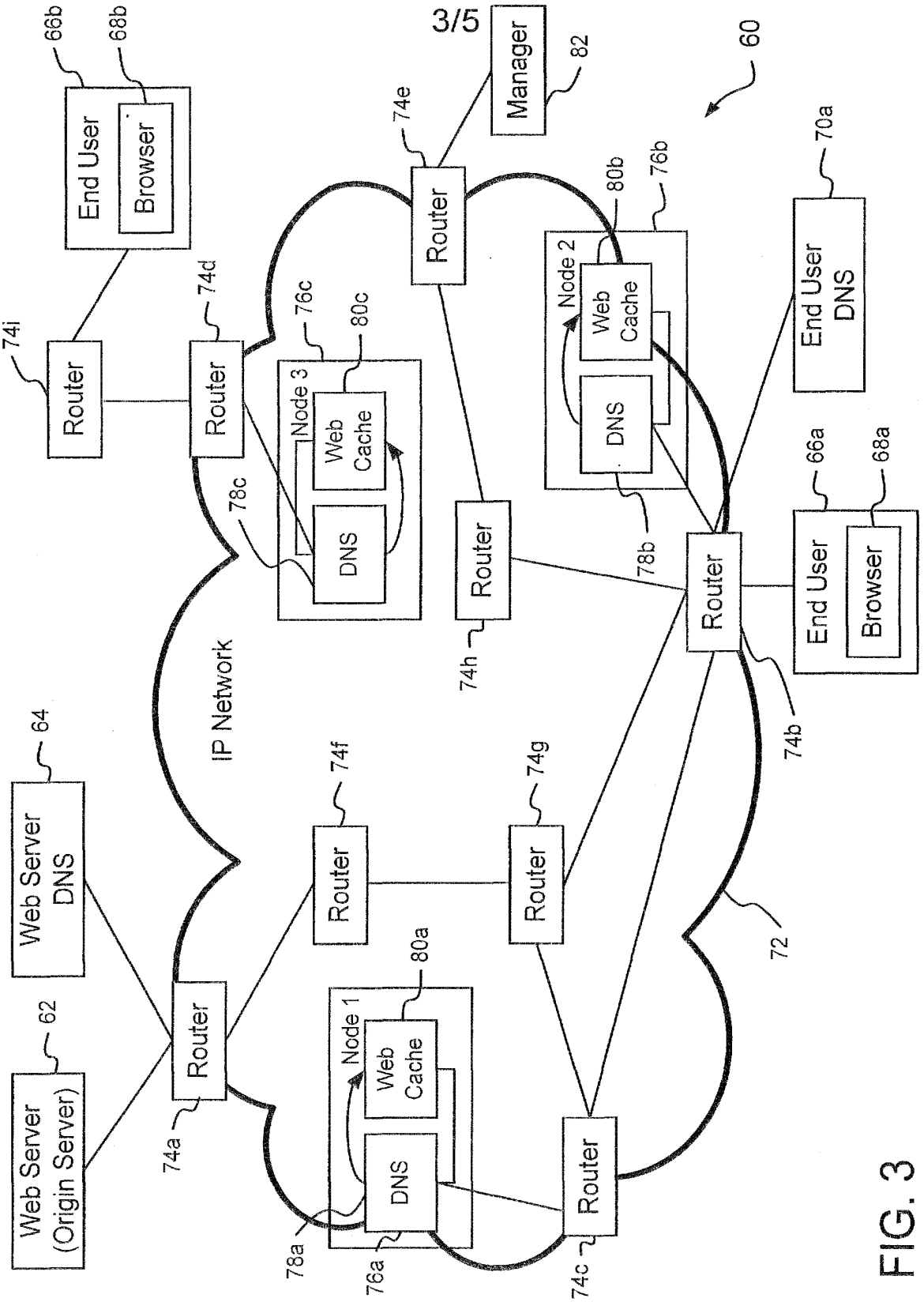

60
Manager
82
End User
Browser
66b
68b
Router
74i
Router
74d
Router
74e
Router
74h
Router
74f
Router
74g
Router
74a
Router
74c
Router
74b
Node 3
Web Cache
DNS
76c
80c
78c
Node 2
Web Cache
DNS
80b
76b
78b
Node 1
Web Cache
DNS
80a
76a
78a
End User DNS
70a
End User
Browser
66a
68a
Web Server DNS
64
Web Server (Origin Server)
62
IP Network
72

FIG. 3

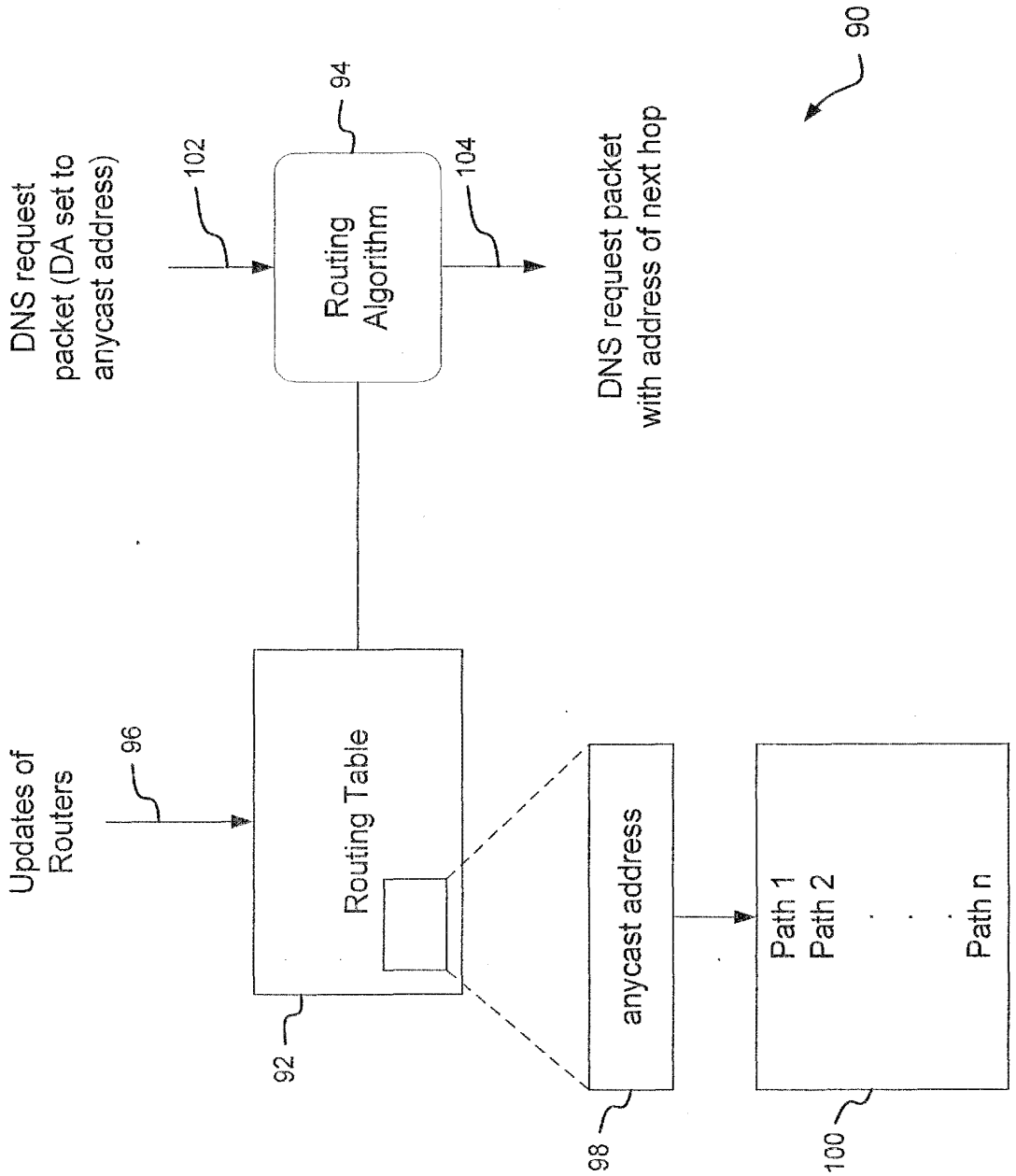

90
DNS request packet (DA set to anycast address)
102
94
Routing Algorithm
104
DNS request packet with address of next hop
Updates of Routers
96
Routing Table
92
anycast address
98
Path 1
Path 2
Path n
100

FIG. 4

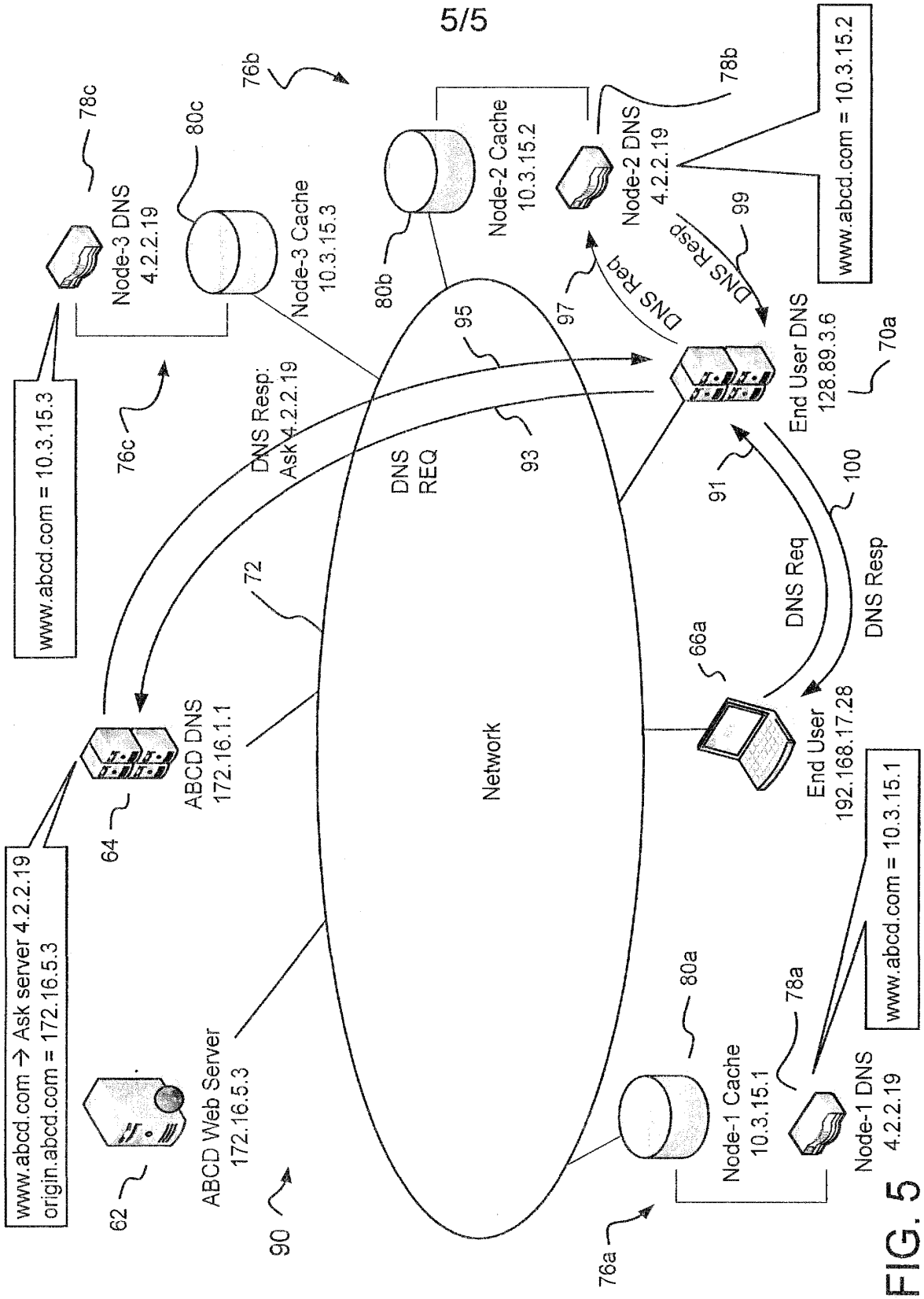

www.abcd.com → Ask server 4.2.2.19
origin.abcd.com = 172.16.5.3
62
ABCD Web Server
172.16.5.3
90
64
ABCD DNS
172.16.1.1
www.abcd.com = 10.3.15.3
78c
Node-3 DNS
4.2.2.19
80c
Node-3 Cache
10.3.15.3
76b
76c
DNS Resp:
Ask 4.2.2.19
72
Network
DNS
REQ
93
95
80b
Node-2 Cache
10.3.15.2
78b
Node-2 DNS
4.2.2.19
97
DNS Req
DNS Resp
99
www.abcd.com = 10.3.15.2
End User DNS
128.89.3.6
70a
91
100
DNS Req
DNS Resp
66a
End User
192.168.17.28
www.abcd.com = 10.3.15.1
80a
78a
Node-1 Cache
10.3.15.1
Node-1 DNS
4.2.2.19
76a

FIG. 5

Electronic Patent Application Fee Transmittal

Application Number:	12050648
Filing Date:	18-Mar-2008
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	Damon Adam Rieth/Sara McPeak
Attorney Docket Number:	519-023-DV1
Filed as Large Entity	

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	120	120

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**120**

Electronic Acknowledgement Receipt	
EFS ID:	3433203
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	69693
Filer:	Damon Adam Rieth/Sara McPeak
Filer Authorized By:	Damon Adam Rieth
Attorney Docket Number:	519-023-DV1
Receipt Date:	10-JUN-2008
Filing Date:	18-MAR-2008
Time Stamp:	16:50:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$120
RAM confirmation Number	2199
Deposit Account	503199
Authorized User	RIETH,DAMON ADAM
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes) /Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1	Power of Attorney	Power_of_Attorney_519_023_DV1.PDF	177779 c58ddf88f09b988c8dea471f0421a5b239688a8d	no	1
Warnings:					
Information:					
2	Assignee showing of ownership per 37 CFR 3.73(b).	Assignee_Statement_519_023_DV1.PDF	143428 9f3d77d2f701e4f2013dde7d75a83e7b7fde63a2	no	2
Warnings:					
Information:					
3	Extension of Time	Petition_for_Extension_of_Time_519_023_DV1.PDF	137319 c7280a8689d1720fbccb2eb92bacd13006256d9c	no	1
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	Response_to_Corrected_Papers_519_023_DV1.PDF	103471 c574bea13c32ea2deac3a72be9786bc2382943b6	no	2
Warnings:					
Information:					
5	Drawings-only black and white line drawings	Drawings_Corrected_519_023_DV1.PDF	436384 4555b0cd660c64d80277e3429c87871da6f74fba	no	5
Warnings:					
Information:					
6	Fee Worksheet (PTO-06)	fee-info.pdf	8189 6a4201c3a6c8484f58e1ea855c9ecab9e14f5e1c	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1006570		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/050,648	03/18/2008	Michael Slocombe	519-023-DV1

CONFIRMATION NO. 9055

69693
HENSLEY KIM & HOLZER, LLC
1660 LINCOLN STREET
SUITE 3000
DENVER, CO 80264

FORMALITIES LETTER

OC000000029081876

Date Mailed: 03/27/2008

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings must be reasonably free from erasures and must be free from alterations, overwriting, interlineations, folds, and copy marks. See Figure(s) 1.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/pwallace sr/

Office of Initial Patent Examination (571) 272-4000 or 1-800-PTO-9199

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/050,648	03/18/2008	2155	1240	519-023-DV1	12	4

CONFIRMATION NO. 9055

69693
HENSLEY KIM & HOLZER, LLC
1660 LINCOLN STREET
SUITE 3000
DENVER, CO 80264

FILING RECEIPT



Date Mailed: 03/27/2008

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Michael Slocombe, Acton, MA;
Matthew Miller, Plainville, MA;
Casey Ajalat, North Billerica, MA;
Vincent A. Fuller III, Palo Alto, CA;

Assignment For Published Patent Application

Level 3 Communications, LLC, Broomfield, CO

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a DIV of 09/982,721 10/18/2001

Foreign Applications

If Required, Foreign Filing License Granted: 03/25/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/050,648**

Projected Publication Date: To Be Determined - pending completion of Corrected Papers

Non-Publication Request: No

Early Publication Request: No

Title

CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS

Preliminary Class

709

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where

the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

PTO/SB/05 (07-07)
Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office. U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	519-023-DV1
First Inventor	Slocombe
Title	CONTENT REQUEST ROUTING . . .
Express Mail Label No.	Filed Electronically

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (e.g., PTO/SB/17)
   (Submit an original and a duplicate for fee processing)
2. ☐ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☑ **Specification** [*Total Pages* 13]
   Both the claims and abstract must start on a new page
   (For information on the preferred arrangement, see MPEP 608.01(a))
4. ☑ **Drawing(s)** (*35 U.S.C. 113*) [*Total Sheets* 5]
5. **Oath or Declaration** [*Total Sheets* 3]
   a. ☐ Newly executed (original or copy)
   b. ☑ A copy from a prior application (37 CFR 1.63(d))
   (for continuation/divisional with Box 18 completed)
   i. ☐ DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☑ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
   (if applicable, items a. – c. are required)
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ADDRESS TO: **Commissioner for Patents**
P.O. Box 1450
Alexandria VA 22313-1450

ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee_____
10. ☐ **37 CFR 3.73(b) Statement** *(when there is an assignee)* ☐ **Power of Attorney**
11. ☐ **English Translation Document** *(if applicable)*
12. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of citations attached
13. ☐ **Preliminary Amendment**
14. ☐ **Return Receipt Postcard** (MPEP 503)
    (Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
    (if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ Other:_____

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☑ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 09/982,721

Prior application information: *Examiner* Patel, Ashokkumar B. *Art Unit:* 2154

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 69693 *OR* ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature	Damon A. Rieth	Date	March 18, 2008
Name (Print/Type)	Damon A. Rieth	Registration No. (Attorney/Agent)	52,167

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	519-023-DV1
	Application Number	
Title of Invention	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	519-023-DV1
	Application Number	
Title of Invention	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	

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All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

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For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

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Application Information:

Title of the Invention	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS		
Attorney Docket Number	519-023-DV1	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		**Sub Class (if any)**	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	5	**Suggested Figure for Publication (if any)**	3

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	519-023-DV1
	Application Number	
Title of Invention	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	69693		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Division of	09982721	2001-10-18

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

			Remove
Application Number	Country[1]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

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Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	519-023-DV1
	Application Number	
Title of Invention	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS	

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Additional Assignee Data may be generated within this form by selecting the **Add** button.			

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.					
Signature	Damon A. Rieth			Date (YYYY-MM-DD)	2008-03-18
First Name	Damon	Last Name	Rieth	Registration Number	52167

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COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS, the specification of which:

[X] was filed on October 18, 2001 as Application Serial No. 09/982,721.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information I know to be material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56.

Address all telephone calls to DAVID L. FEIGENBAUM at telephone number (617) 542-5070.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

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my comm exp 3/10/06 Kimberly Malo

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TITLE: **CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS**

APPLICANTS: MICHAEL GILSON SLOCOMBE, VINCE FULLER, MATTHEW MILLER, AND CASEY AJALAT

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This is a divisional application of U.S. Application No. 09/982,721 entitled "Content Request Routing and Load Balancing for Content Distribution Networks", filed October 18, 2001, which is hereby incorporated by reference in its entirety.

BACKGROUND

[0002] Embodiments of the invention relate generally to information retrieval in a network and, more particularly, to hosting and distributing content on a content delivery network such as the Internet.

[0003] The World Wide Web is the Internet's content retrieval system. In the Web environment, client systems effect transactions to Web servers using the Hypertext Transfer Protocol (HTTP), which provides clients with access to files (e.g., text, graphics, images, sound, video, etc.) using a standard page description language, for example, Hypertext Markup Language (HTML). A network path to a server is identified by a so-called Uniform Resource Locator (URL) having a special syntax for defining a network connection. Use of a Web browser at a client (end user) system involves specification of a link via the URL. In response, the client system makes a request to the server (sometimes referred to as a "Web site") identified in the link and, in return, receives content from the Web server. The Web server can return different content data object types, such as .gif and jpeg files (graphics), .mpeg files (video), .wav files (audio) and the like.

[0004] As the Web server content provided by World Wide Web has continued to grow over time, so too has the number of users demanding access to such content. Unfortunately, the ever-increasing number of end users requesting Web content from Web sites has resulted in serious bandwidth and latency issues, which manifest

themselves in delay to the end user.

[0005] To address these problems, many networking product and service providers have developed solutions that distribute Web site content across the network in some manner. One class of solutions involves replicating Web servers at multiple locations and directing traffic (by modifying the URL and forwarding, or using HTTP re-direct) to the "best" server based on a predefined selection policy, e.g., load balancing, network topology. Another class of solutions distributes content strategically and/or geographically, and often uses some type of centralized or hierarchical Domain Name System (DNS)-based site selection. The distributed sites include servers that perform reverse proxy with (or without) caching. One such technique routes traffic to a content distribution site nearest the requestor by modifying URLs in the top-level Web page. Other DNS techniques use a round robin traffic distribution to distribute load to the content sites, but do not take into account the location of the requester relative to those content sites.

SUMMARY

[0006] In one aspect, embodiments of the invention provide a method of content delivery in a network. The method includes associating devices in a Domain Name System (DNS) with content server systems located in the network, the content server systems maintaining and serving content of a content provider, each DNS device configured to resolve the name of the content provider to an address for the content server system with which such DNS device is associated. The method further includes assigning to the DNS devices a common address, the common address being usable to resolve the name of the content provider such that a request for content of the content provider by a content requestor is sent to the content server system nearest the content requestor.

[0007] Particular implementations of the invention may provide one or more of the following advantages.

[0008] A performance benefit is gained because a content requestor can generally retrieve content from a content site closer than the origin server of the content provider. In addition, because there are multiple sites serving the content, the load from many end users is distributed among multiple systems and across different parts of the network.

Also, an end user's DNS request can be routed to a content site nearest the requestor using pre-existing routing infrastructure. Because DNS uses a stateless protocol (UDP) for routing, the solution can handle anycast addressable caching without the problems associated with anycast service, namely, the potential packet-by packet load balancing site effects of protocols like TCP which maintain state information.

[0009] Other features and advantages of the invention will be apparent from the following detailed description and from the claims.

BRIEF DESCRIPTION OF DRAWINGS

[0010] FIG. 1 is a depiction of a prior Web transaction.

[0011] FIG. 2 is a depiction of a prior Web transaction using reverse-proxy caching.

[0012] FIG. 3 is a block diagram of an exemplary content distribution network which includes content distribution nodes that support reverse-proxy caching and anycast address service to achieve distributed content delivery and load balancing.

[0013] FIG. 4 is a simplified block diagram of routing configuration software and associated table(s) (provided in the routing infrastructure of the content distribution network of FIG. 3) used to perform distributed content site selection based on anycast address routing and Border Gateway Protocol (BGP).

[0014] FIG. 5 is a depiction of an exemplary Web transaction using the content distribution network shown in FIG. 3.

[0015] Like reference numbers will be used to represent like elements.

DETAILED DESCRIPTION

[0016] Embodiments of the present invention feature a content distribution mechanism for routing a content request to the nearest content distribution site in a content distribution network. It also provides for load sharing across multiple content distribution sites in a content distribution network. The content distribution mechanism has particular utility in and is therefore described within the context of an Internet-based, World Wide Web ("Web") network infrastructure.

[0017] Hereinafter, the following terminology is used:

[0018] "Content provider" refers to an entity having a Web site on a network. Generally, the entity produces the content for the Web site. The entity may operate a Web server system or may use the services of a hosting provider.

[0019] "End user" refers to a person who wishes to view the Web content. Typically, an end user uses a Web browser, such as Netscape Navigator or Internet Explorer, executing on a computer system, e.g., a personal computer.

[0020] "Domain Name System" (DNS) refers to a collection of systems available on the public Internet that can resolve a domain name to a specific Internet Protocol (IP) address, as is known in the art.

[0021] It will be understood that reference to distance on the network, such as one server being "closer" to an end user than another server, refers to a network distance. Thus, a shorter distance implies a better path based on network criteria, and not necessarily a shorter geographic distance.

[0022] In the description to follow, a fictitious company "ABCD" is used as an example of a content provider having a Web site on a network.

[0023] FIG. 1 shows a conventional content delivery Web transaction 10. The transaction 10 involves a Web server 12 (also referred to as an "origin server"), an authoritative DNS system 14, an end-user system 16 and an end-user DNS system 18, all of which are coupled to a network 20, for example, the public Internet. The Web server 12 is a computer system containing content (e.g., Web pages) for a content provider, with the ability to provide this content in response to a Web request via the HTTP protocol. The authoritative DNS system 14 is a DNS system that can resolve domain names within the content provider's namespace.

[0024] For example, the DNS system 14 for the company "ABCD" would have information for host names ending in ".abcd.com" (such as "www.abcd.com"). Typically, the end-user system 16 is a computer being operated by an end user to perform Web "browsing" (that is, view Web pages). The end-user DNS system 18 is a DNS server that the end-user system 16 uses to resolve domain names to IP addresses.

[0025] When the end user wishes to view a Web page or object (such as "www.abcd.com/PriceList"), the transaction 10 occurs as follows. First, the end user using the end user system 16 enters the name of a Web page into a browser (not shown)

executing on the end user system 16. The end-user system 16 requests a DNS resolution for the host name ("www.abcd.com") from the end-user DNS system 18 ("DNS Req 22"). The end-user DNS system 18 determines which of the DNS systems that make up the DNS for the network 20 can resolve this host name by sending a DNS request to the authoritative DNS system 14 ("DNS Req 24"). The authoritative DNS system 14 resolves the name to an IP address and returns a response containing the IP address to the end-user 16 system via the end-user DNS system 18 ("DNS Resp 26"). The end-user DNS system 18, in turn, communicates the IP address to the end-user station 16 in a DNS response to the end-user system 16 ("DNS Resp 27"). The end-user system 16 contacts the Web server 12 at the specified IP address and requests the Web object ("www.abcd.comlPriceList") ("HTTP Req 28"). The Web server 12 returns the Web page corresponding to the requested Web object to the end-user system 16 ("HTTP Resp" 30). The browser running on the end-user station 16 displays the returned Web page on the end-user system 16 for viewing by the end user.

[0026] FIG. 2 illustrates a Web transaction with reverse proxy caching 40. That is, the transaction 40 is the same basic Web transaction as shown in FIG. 1, but now employs a reverse proxy content server (shown as a cache server) 42 acting on behalf of the Web server 12. During reverse-proxy caching, the cache server 42 assumes the identity of the Web server 12 so that a Web request directed to the Web server 12 (in the example, "www.abcd.com") is instead directed to the cache server 42. This re-direction is accomplished by changing the entry for the Web site ("www.abcd.com") in the authoritative DNS system 14 so that the host name resolves to the address of the cache server 42 instead of the address of the original Web server 12. A new name is assigned to the address of the original Web server 12 (e.g., "origin.abcd.com"). Thus, 22, 24, 26 and 27 are the same as in FIG. 1. However, the IP address returned by the authoritative DNS system 14 is that of the cache server 42, not the Web server itself, as was previously described with reference to FIG. 1. Consequently, instead of sending the subsequent content request to and receiving a response from the Web server 12 (as was shown in steps 28 and 30 of FIG. 1), the end-user system 16 sends the content request to the cache server 22 ("HTTP Req 44") and the cache server 22 fetches the requested content from the Web server ("HTTP Req 46"). The Web server 12 returns the requested content to the

cache server 42 ("HTTP Resp 48"). The cache server 42 completes the transaction by serving the requested content to the end-user system 16 ("HTTP Resp 50") and caching the content so the content will be readily available to support future requests for the same content ("store"52).

[0027] FIG. 3 shows a content distribution network ("CDN") 60. The CDN 60 includes at least one Web server, shown as a Web server 62, a DNS system 64 for Web server 62, and end-user stations 66a and 66b, all connected to a network 72. The network 72 is implemented as the public Internet. The end-user stations execute Web browsers 68a and 68b, respectively. Each end-user station 66 has an associated end user DNS, however, only an end user DNS 70a for the end-user station 66a is shown. Of course, additional end-user stations may be connected to the network 72. Also connected to the network 72 are multiple content distribution nodes 76a, 76b and 76c, which support distributed content delivery services for one or more Web sites on the network 72. The CDN nodes 76 interact with the origin server 62 containing the original Web content, the various DNS systems 64, 70 and, of course, the end-user systems 66.

[0028] Each of the CDN nodes 76 includes a DNS system 78 coupled to and associated with a Web content server system or site 80. In one embodiment, as described herein, each content server system 80 is implemented as a cache server system. The techniques described herein could also apply to other types of content servers, such as mirrored Web content servers, or Web content servers having different content (e.g., customized for geographic area). Each DNS system 78 in each node holds a table that includes an address entry which the DNS system 78 uses to map the domain name of the content provider to the IP address of the cache server in that same node. Although only one such Web site (Web site 62) is shown, it will be appreciated that other Web sites may be connected to the network 72 and use the DNS and content caching services of the nodes 76, as will be described. The nodes 76 are deployed at different locations in the network 72. Preferably, the nodes 76 are geographically distributed across the network 72.

[0029] Optionally, the CDN 60 may include a CDN manager 82 that can be used by a network administrator (for example, a CDN node hardware and/or CDN node service provider) to configure the CDN to use the CDN nodes.

[0030] The network 72 is intended to represent a simplified view of the Internet. In the simplified depiction of FIG. 3, the network 72 includes a plurality of interconnected routers or routing networks, e.g., routers 74a. 74b, . . . , 74g, for routing packets from one domain to another within network 60. In actuality, the Internet is made up of many private "routing networks" (networks including one or more routers, and possibly other types of networking components as well), e.g., local, regional and centralized Internet Service Providers (ISPs), some of which are connected to Network Access Points (NAPs) or exchanges, or each other at public or private peering points. In the simplified Internet configuration shown in FIG. 3, routers 74a, 74b, 74c 74d and 74e are located at network entry points. The end user station 66a and end user DNS system 70a connect to the network 72 via the router 74a. The end user station 66b is coupled to another router 74i, which connects to the router 74d. The Web Server 62 and associated DNS system 64 are connected to the network 72 via the router 74b. Preferably, to the extent possible, and for reasons which will be discussed below, the end user DNS systems such as system 70a are located near the end user systems with which they are associated.

[0031] Also, preferably, the geographically dispersed nodes 76 are located so as to be as close as possible to various network entry points, exchanges or both. The network entry points each may correspond to an ISP Point of Presence (POP). In FIG. 3, for illustrative purposes, the nodes 76a, 76b and 76c are shown as being connected to entry point routers 74c, 74b and 74d, respectively, but need not be directly connected to network access routers in this manner.

[0032] The caching servers 80 have unique IP addresses. The DNS systems 78 share a common IP address as well as have unique IP addresses. The end-user DNS systems, e.g., end user DNS system 70a, resolve to the common address. That is, the end-user DNS system 70a knows which DNS system (in this example, the DNS system 64) has an address for a high level domain server, e.g., .com, org, and maintains tables of all domain names and knows which server (authoritative DNS server) to consult for the address of the domain server. Thus, the address lookup table in the DNS system 64 is configured to indicate that a server corresponding to the common address can resolve the domain name of the content provider to an IP address.

[0033] One way to implement this content distribution configuration is to use an anycast

address as the common address. An anycast address is a unicast address that is used in multiple places. Various Internet Engineering Task Force (IETF) Internet Requests for Comments (RFCs) describe implementations of anycast addresses in IP networks. The IETF is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. The following anycast-related RFCs are hereby incorporated by reference in their entirety for all purposes: RFC 1546 (November 1993); RFC 2372 (July 1998); RFC 2373 (August 1998); and RFC 2526 (March 1999).

[0034] As described in RFC 1546, an anycast address may include a subnet prefix identifier and an anycast identifier. The subnet prefix may be used to specify the network providing the anycast addresses. The anycast identifier is used to specify one of many possible anycast addresses on a particular subnet. A unicast address, or conventional IP address, specifies a single interface on a computer network. In contrast, an anycast address may specify more than one interface. For example, anycast addresses may be used to specify a group of one or more servers on a computer network. These servers may provide a redundant service. Routers forward packets destined to anycast addresses to the closest anycast destination for a particular address. Thus, anycast addresses provide a way to distribute load across one or more servers

[0035] The anycast address is advertised to the network 72 from each node 76 using a dynamic routing protocol, the Border Gateway Protocol (BGP). The BGP is a routing protocol used to exchange network reachability information between Internet border routers. It enables those routers to make intelligent routing decisions as to the best path. The BGP is used by such routers as their exterior routing protocol in order to advertise routes to other border routers. BGP uses TCP as its transport protocol for exchanging routing information. Adjacent routers running BGP set up a TCP connection to exchange entire routing tables. Each router has enough information to determine an optimal next hop to a destination. The BGP is also described in various RFCs, including RFC 1267 (October 1991) and RFC 1654 (July 1994), incorporated herein by reference.

[0036] Referring to FIG. 4, routing configuration support 90 in a router such as router 74b includes a routing algorithm (software) 94 and a routing table 92. The router 74b receives address path information from the nodes 76 in accordance with the BGP route

information exchanges and updates 96, including the anycast address 98 and associated paths 100 for each of the nodes, and stores them in the routing table 92. As a result of the BGP table information exchanges and updates, routers in the network 72 maintain pointers (that is, the paths or routes) that allow it to determine the next hop to every unique address in the network, as well as multiple pointers to the anycast address. The routing algorithm 94, in response to receipt of a DNS request packet 102 from an end-user system 66 for resolution of a DNS name for the content provider, uses the path information 100 stored in the routing table 92 to a select a path to the nearest CDN node. Thus, a router may see multiple connections to the anycast address, but selects the path that represents the shortest network distance (e.g, the topologically shortest path). More specifically, as this routing occurs as part of a DNS resolution, the router selects a route to the closest DNS system 78. Because the selected DNS system resolves to the address of the cache server in the DNS system's node, the DNS anycast routing, in essence, serves to select the local content site (cache) from which content will be served.

[0037] Referring now to FIG. 5, a Web transaction 90 occurring over a CDN (such as the CDN 60 shown in FIG. 3) is illustrated for the running example of the "ABCD" Web site. To provide content distribution service for this site, the following configurations are implemented. The original Web server 62 is renamed in the DNS system 64 to reflect a change in its role from being the primary Web server to becoming the original content source for the cache servers 80. The domain "www.abcd.com" is renamed "origin.abcd.com". In the end-user DNS system 70a, an entry is made to indicate that the CDN DNS system 78 is the authoritative server for the end user web domain. For example, in the dns.abcd.com system, the entry for "www.abcd.com" no longer resolves to a specific address but instead refers the content requestor to the CDN DNS server 78 at the anycast address of 4.2.2.19. The CDN DNS server entry resolves to the address of the associated node's caching server 80. As a result, each node 76 resolves the Web site name to a different address. In the above example, DNS server 78a in node 76a (node 1) resolves the name "www.abcd.com" to 10.3.15.1, whereas in node 76b (node 2), the DNS server 78b resolves the same address to 10.3.15.2. In this manner, therefore, the entry made in the CDN DNS server 78 in each node enables distribution of the Web site among the cache servers 80 in their respective nodes and locations, as will be described in

further detail below.

[0038] Once the appropriate configurations have been completed, it is assumed that the Web site www.abcd.com is being handled by the CDN nodes 76. Each node 76 advertises the anycast address of its own DNS server 78 to the network 72 using the BPG protocol, as discussed above. The address of the DNS server at each node is identical. That is, from a network point of view, the network "thinks" it is connected to a single host at multiple points.

[0039] Referring to FIGS. 3 and 5, the Web transaction operation 90 is as follows. When an end user of the end-user station 66a requests an object from the now "accelerated" Web site, the end-user system 66a first resolves the content provider name via DNS. That is, the end-user station (acting as a content requestor) sends a request to the local DNS server 70a ("DNS Req 92"). That server 70a resolves the name, ultimately by sending a request to the CDN DNS anycast address. The DNS server 70a sends a request to the ABCD DNS server 64 ("DNS Req 94"), which returns the anycast address of the CDN nodes 76 to the requesting DNS server 70a (DNS Resp 96). The DNS server 70a then transmits a DNS name resolution request addressed to the anycast address and that request is generally routed (by various ones of the network routers 74a-74h) to the CDN node nearest the user's DNS system ("DNS Req 96"). In this instance, because the request enters the network via the router 74b, the router 74b determines that the shortest path to the anycast address is the path to the node 76b (node 2). At that node, the DNS server 78b resolves the name to the cache server address for that node, that is, IP address 10.3.15.2 assigned to the cache server 80b, and returns the cache server address to the end-user DNS server 70a ("DNS Resp 98"). The end-user DNS server 70a forwards the address to the end-user system 66a ("DNS Resp 100). From this point on, the remaining steps of the transaction are much the same as steps 44 through 52, shown in FIG. 2. That is, the end-user system 70a requests the Web object from the cache server in the nearby node where the DNS name was resolved, i.e., node 76b, and that node's cache server 80b, in turn, checks for a cached version of the object (if cached content already resides on the cache server). If no content has yet been cached in the server, or the cached copy is stale or otherwise invalid, the cache server 80b retrieves the Web object from the origin server 62, and serves the object to the end-user system that requested it.

[0040] Typically, as is known in the art, Web content can be marked with certain caching attributes, for example, whether or not the content is at all cacheable, how long the content may be held in cache. In the case of the former attribute, if the content is marked as uncacheable (e.g., dynamic or content containing sensitive information), the cache server discards the content after serving it to the requestor. Otherwise, if the content is cacheable, the cache server will store the content in local storage and maintain the cached content according to any other cache attributes. Content can be localized, for example, using ad insertions with local content. Content in the caches can be pre-loaded (all the cache servers receiving the same content). That is, the content can be replicated on all cache servers so that even the first request will have a fast response time. Preferably, the caches are not preloaded with content but instead build their cached content based on user requests/usage over time. Content is retrieved from the origin server 12 when a first user request is received, and then stored locally. If subsequent requests are received for the same content, the cached copy is used if it is still valid, as was mentioned earlier. Thus, the cache server need not retrieve the content from the origin server again. Each cache server contains a translation table so that it knows where to retrieve any particular Web page from the origin server. For example, the cache server 80b would know that the page "www.abcd.com/PriceList" can be retrieved from "origin.abcd.com/PriceList".

[0041] Preferably, the CDN node contains software to monitor the load in various parts of the node cache system (disk, CPU, I/O, et cetera) by determining at least one load metric value (based on metrics such as utilization, latency, etc.) and comparing each such metric value to a predefined overload threshold. Upon reaching a predefined overload threshold, the monitoring software informs the routing software in the CDN DNS server to withdraw its BGP routing advertisement.

[0042] Thus, under normal conditions, all CDN nodes are advertising the address of their DNS servers to the network, and so a DNS request will be directed to the nearest CDN node. If a node becomes heavily loaded and detects an overload condition through its internal monitoring, the node stops advertising its DNS address to the network so that no further requests will be directed to that node. Consequently, DNS requests that normally would have been routed to that node as a first choice are routed to the next closest active node.

[0043] This overload detection and load balancing mechanism has the advantage that Web transactions already in progress are not interrupted by a shift in resources. Any system that has already resolved a DNS name to the now inactive node will continue using that node until the DNS name expires. The load in that node will slowly decrease until such time as the node can start accepting new clients, at which time it will start advertising its DNS system address to the network again.

[0044] Other embodiments are contemplated. For example, it is possible to use an anycast scheme with the cache servers themselves. With reference to the system shown in FIG. 3, the network routing directs the DNS request from the end user's DNS system, such as system 70a, to the closest of the CDN nodes 76. Although the node is the node closest to the end user's DNS system, it may not necessarily be the closest to the end-user system. In those cases where the end user's DNS system is a substantial distance from the end user, it is possible that the end user system will use a CDN node that is not the closest one to the end user system. Allowing the cache servers to use a common address would ensure that the end user's Web request is indeed routed to the nearest CDN node. There is a significant drawback associated with using the anycast-addressable cache server approach, however. The client/server portion of the transaction uses the TCP protocol, thus requiring multiple exchanges between the end user and the cache server to complete a transaction. With anycasting, there is no guarantee that subsequent packets in a transaction will be routed to the same server. In cases where the packets are split between two or more cache servers, a successful transaction cannot occur. In contrast, although requiring that the end user DNS system be located in close proximity to the end user system for optimal CDN performance, the anycast-based DNS resolution is completed using a single packet exchange with the stateless UDP protocol, thus eliminating the packet-by-packet load distribution problem seen with TCP.

[0045] In addition, the Web caches, i.e., the cache systems 80 each can be implemented to include multiple caches servers connected, for example, in a cluster configuration. There may be multiple servers available to support one customer (origin server) or, alternatively, one or more cache servers available to support multiple customers' content cached at one node (site). In yet another alternative, the cache server clusters can include a switch to select from among the cache servers in a given node/cluster based on a

predetermined selection policy, for example, content-aware selection (which enables the clustered servers store different content, and maps requested objects to the appropriate servers), load balancing, and so forth, using known techniques.

[0046] Other embodiments are within the scope of the following claims.

CLAIMS

What is claimed is:

1. A method of content delivery in a network, the method comprising:

(A) providing a plurality of Domain Name System (DNS) servers, said DNS servers all sharing a common anycast address;

(B) providing a plurality of content servers, each of said content servers associated with at least one of said plurality of DNS servers, and each DNS server of said plurality of DNS servers having at least one content server associated therewith;

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain;

(D) responsive to a request to resolve a hostname in said content provider domain,

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server, said at least one other DNS server being authoritative for said content provider's domain; and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers sites associated with said one of said DNS servers.

2. The method as recited in claim 1 wherein at least some of said plurality of DNS servers are located at network Points of Presence (POPs).

3. The method as recited in claim 2 wherein each of said plurality of DNS servers is located at a network POP.

4. The method as recited in claim 1 wherein each of said plurality of content servers is associated with a network Point of Presence (POP).

5. The method as recited in claim 2 wherein said content servers are grouped into nodes, each node associated with one of said plurality of DNS servers.

6. The method as recited in claim 1 further comprising:

(E) at one of said identified content servers,

(e1) attempting to serve an object associated with the content provider.

7. The method as recited in claim 6 wherein said step (e1) of attempting comprises:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object; otherwise

(e12) obtaining the object from a content source and then serving the object.

8. The method as recited in claim 7 wherein, said content source is an origin server associated with said content provider.

9. The method as recited in claim 7 wherein, if a valid version of said object is not available on said one of said identified content servers, said one of said identified content servers uses a table in order to ascertain where to obtain said object.

10. A method of content delivery for delivering content on behalf of a plurality of content providers, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address;

(B) providing a plurality of content server sites, each of said content server sites being associated with one of said CDN DNS servers, and each CDN DNS server having at least one content server site associated therewith;

(C1) causing said common anycast address to be associated with a first domain associated with a first content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said first domain, and

(C2) causing said common anycast address to be associated with a second domain associated with a second content provider of said plurality of content providers so that said CDN DNS servers are authoritative for said second domain;

(D1) responsive to a first request for first content associated with said first content provider, said first request including a first hostname in said first domain,

(d11) causing said first hostname to be resolved to said common anycast address; and then

(d12) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said first hostname to identify a first content server site associated with said one of said CDN DNS servers; and then

(d13) attempting to serve said first content from a server in said content server site; and

(D2) responsive to a second request for second content associated with said second content provider, said second request including a second hostname in said second domain,

(d21) causing said second hostname to be resolved to said common anycast address; and then

(d22) by one of said plurality of CDN DNS servers sharing said common anycast address, resolving said second hostname to identify a second content server site associated with said one of said CDN DNS servers; and then

(d23) attempting to serve said second content from a server in said second content server site.

11. A content delivery system for delivering content on behalf of a plurality of content providers, each of said content providers having at least one content provider domain associated therewith, the system comprising:

(A) a plurality of CDN Domain Name System (DNS) servers, said CDN DNS servers all sharing a common anycast address, and said CDN DNS servers being authoritative for said content provider domains associated with said plurality of content providers; and

(B) a plurality of content server sites, each of said content server sites associated with at least one of said plurality of DNS servers, and each DNS server of said plurality DNS servers having at least one content server site associated therewith, wherein

(C) responsive to a request to resolve a hostname in a particular content provider domain of said content provider domains, said particular content provider domain corresponding to a particular content provider, said request to resolve a hostname being associated with an end-user request for content from said particular content provider domain, one of said plurality of CDN DNS servers sharing said common anycast address resolves said hostname to identify at least one of said content server sites associated with said one of said one of said CDN DNS servers, and wherein said content is served to said end-user from said identified content server site.

12. A method of content delivery, the method comprising:

(A) providing a plurality of CDN Domain Name System (DNS) servers, said DNS servers all sharing a common anycast address, at least some of said plurality of DNS servers being located at network Points of Presence (POPs);

(B) providing a plurality of content servers, each of said content servers associated with at least one of said plurality of CDN DNS servers, and each CDN DNS server of said plurality CDN DNS servers having at least one content server associated therewith, and each of said plurality of content servers being associated with a network Point of Presence (POP);

(C) causing said plurality of DNS servers to be authoritative for at least one content provider domain by causing said common anycast address to be associated with said at least one content provider domain;

(D) responsive to a request to resolve a hostname in said content provider domain,

(d1) causing said hostname to be resolved to said common anycast address by at least one other DNS server, said at least one other DNS server being authoritative for said content provider's domain; and then

(d2) by one of said plurality of DNS servers sharing said common anycast address, resolving said hostname to identify at least one of said content servers sites associated with said one of said DNS servers;

(E) at one of said identified content servers,

(e1) attempting to serve an object associated with the content provider by:

(e11) if a valid version of said object is available on said one of said identified content servers, serving said object; otherwise

(e12) obtaining the object from a content source and then serving the object.

ABSTRACT

A content distribution mechanism that distributes content of a content provider at various sites across a network and selects the site that is nearest a content requestor using an anycast address that resides at each of the sites. The sites are configured as nodes (or clusters) and each node includes a content server and a DNS server. The DNS servers are so associated with the content servers at their respective nodes as to resolve the name of the content provider to the IP address of the content servers at the nodes. The DNS servers each are assigned the anycast address in addition to a unique address, and the anycast address is advertised to the network (in particular, the network routing infrastructure) using Border Gateway Protocol (BGP). Node selection occurs when the network routing infrastructure selects a shortest path to the anycast address during DNS name resolution.

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Filer:	Damon Adam Rieth/Joanne Vos
Attorney Docket Number:	519-023-DV1
Filed as Large Entity	

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	310	310
Utility Search Fee	1111	1	510	510
Utility Examination Fee	1311	1	210	210
Pages:				
Claims:				
Independent claims in excess of 3	1201	1	210	210
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1240**

Electronic Acknowledgement Receipt	
EFS ID:	3017640
Application Number:	12050648
International Application Number:	
Confirmation Number:	9055
Title of Invention:	CONTENT REQUEST ROUTING AND LOAD BALANCING FOR CONTENT DISTRIBUTION NETWORKS
First Named Inventor/Applicant Name:	Michael Slocombe
Customer Number:	69693
Filer:	Damon Adam Rieth/Joanne Vos
Filer Authorized By:	Damon Adam Rieth
Attorney Docket Number:	519-023-DV1
Receipt Date:	18-MAR-2008
Filing Date:	
Time Stamp:	16:27:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1240
RAM confirmation Number	1755
Deposit Account	503199
Authorized User	RIETH,DAMON ADAM
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	ApplicationTransmittal.pdf	75574 a6cb3a5c9975c3e284671df2c57de4696f8bc4f9	no	1
Warnings:					
Information:					
2	Application Data Sheet	ADS.pdf	252228 d3ad1e465a9eb441fde19996ae808e629f0c32cb	no	4
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3	Drawings-only black and white line drawings	InformalDrawings.pdf	82535 5b002a56038f5e4a1888c3e6b0d981a65196f60c	no	5
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Information:					
4	Oath or Declaration filed	PriorityDeclaration.pdf	73114 f0483dfa07e39aeb11ea8db1c06d9a29f3a689d7	no	3
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Information:					
5		FINALSpecification.pdf	102697 f4b0d8fff04bac6d5d17a8abce2c6b9138ae3fe8	yes	19

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	13
Claims	14	18
Abstract	19	19

Warnings:					
Information:					
6	Fee Worksheet (PTO-06)	fee-info.pdf	8517 fbbfc4291721783dbc7ce67ab22ab5fa25dccd1d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	594665		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

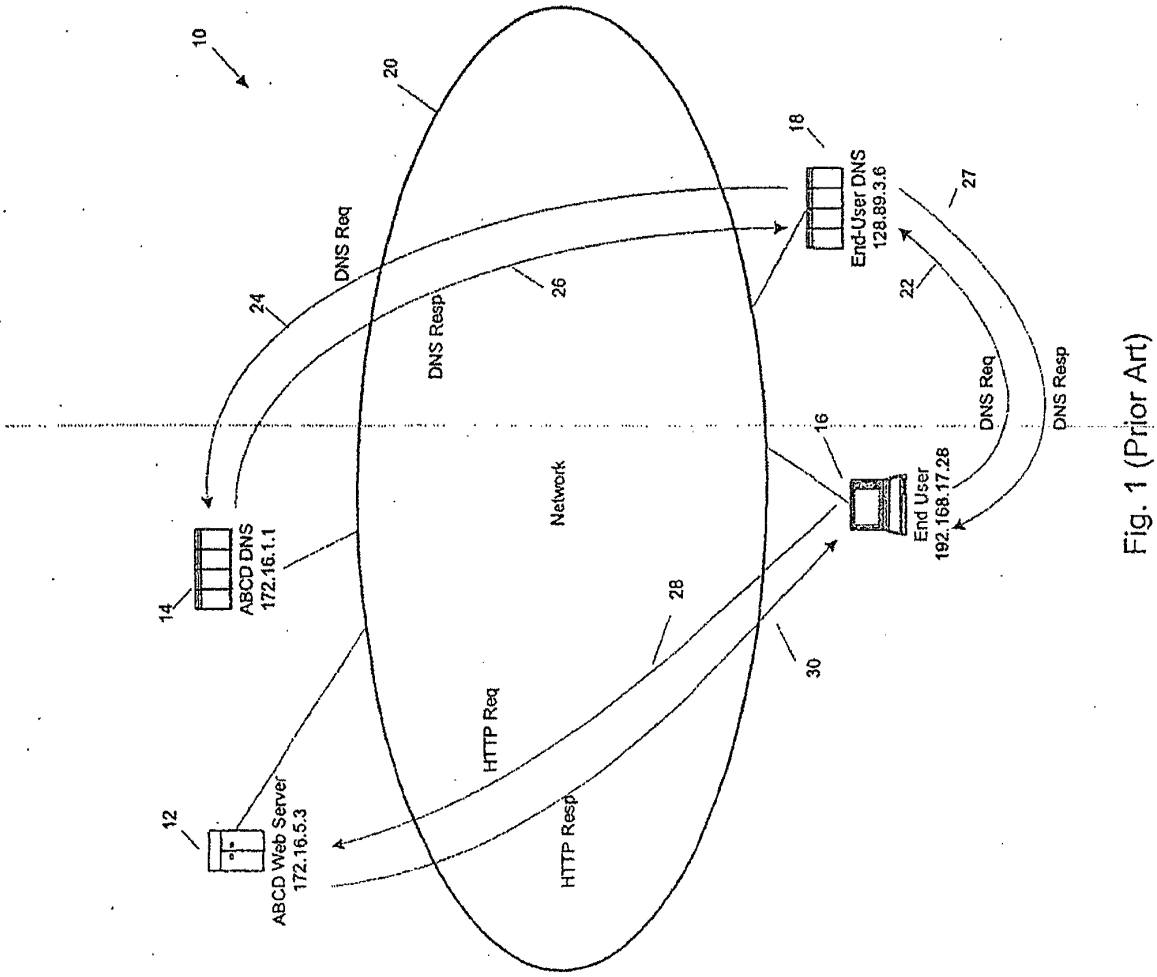


Fig. 1 (Prior Art)

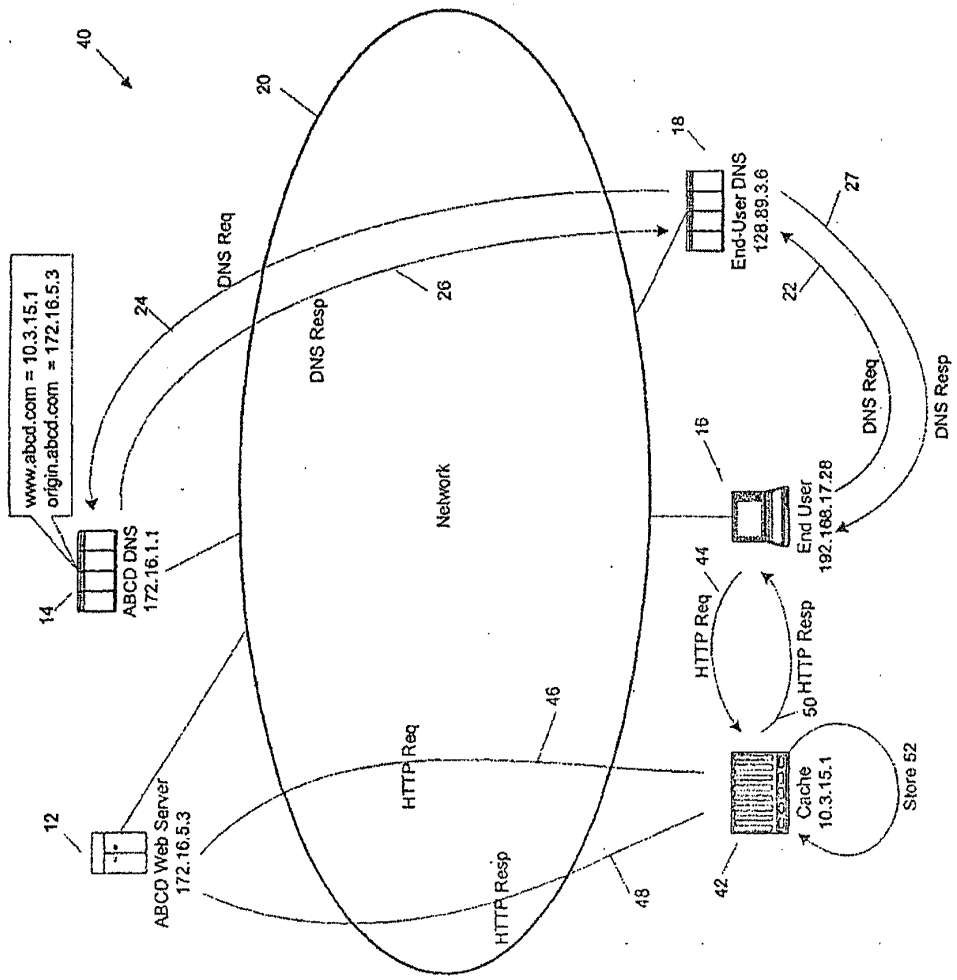


Fig. 2 (Prior Art)

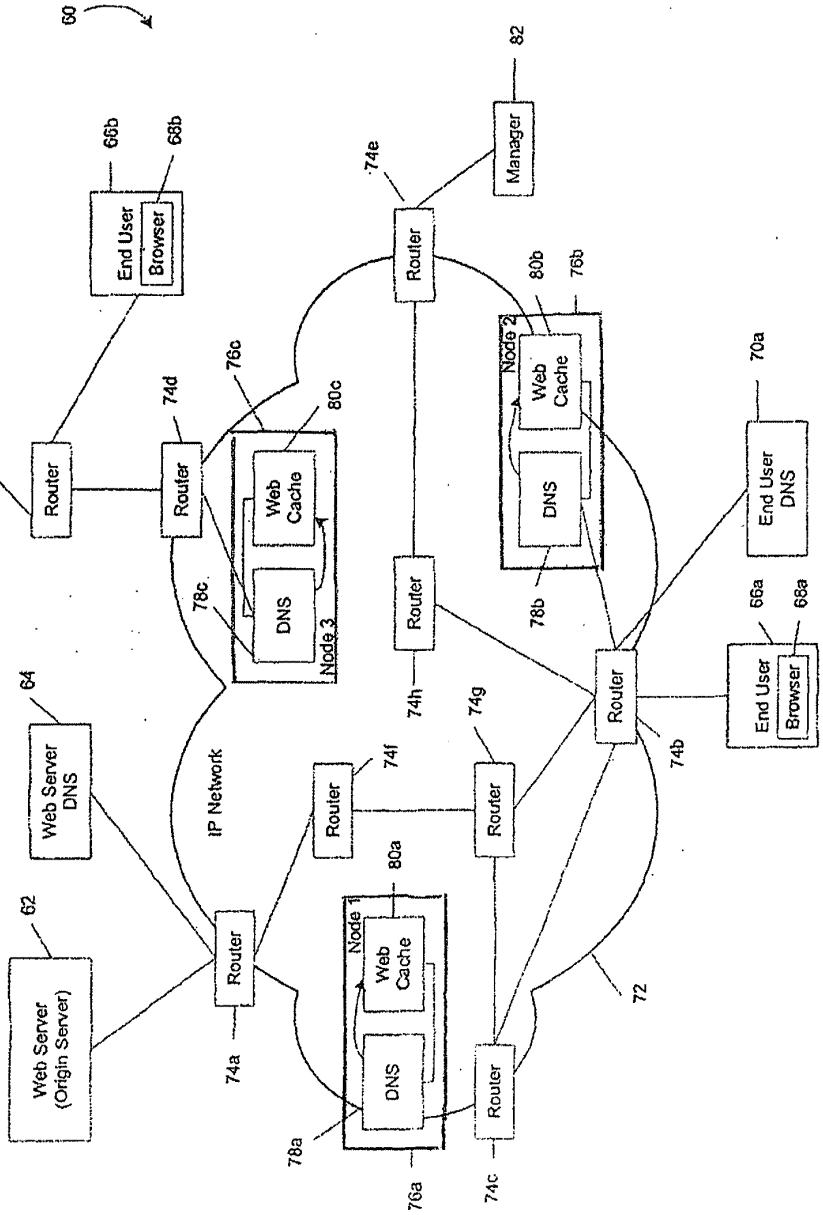

60
82
Manager
66b
68b
End User
Browser
74e
Router
74i
Router
74d
Router
76c
80c
Web Cache
DNS
78c
Node 3
80b
76b
Node 2
Web Cache
DNS
78b
70a
End User DNS
66a
68a
End User
Browser
74b
Router
Router
74h
Router
74g
64
Web Server DNS
IP Network
Router
74f
Router
62
Web Server (Origin Server)
Router
74a
80a
Node 1
Web Cache
DNS
78a
76a
Router
74c
72

Fig. 3

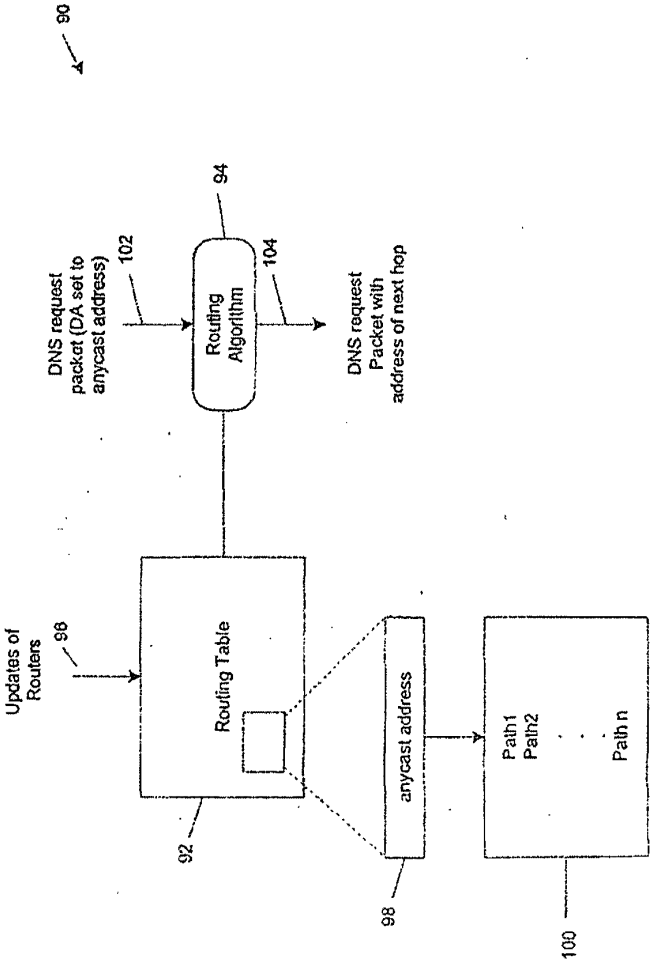

90
94
DNS request packet (DA set to anycast address)
102
Routing Algorithm
104
DNS request Packet with address of next hop
Updates of Routers
96
Routing Table
92
anycast address
98
Path1
Path2
Path n
100

Fig. 4

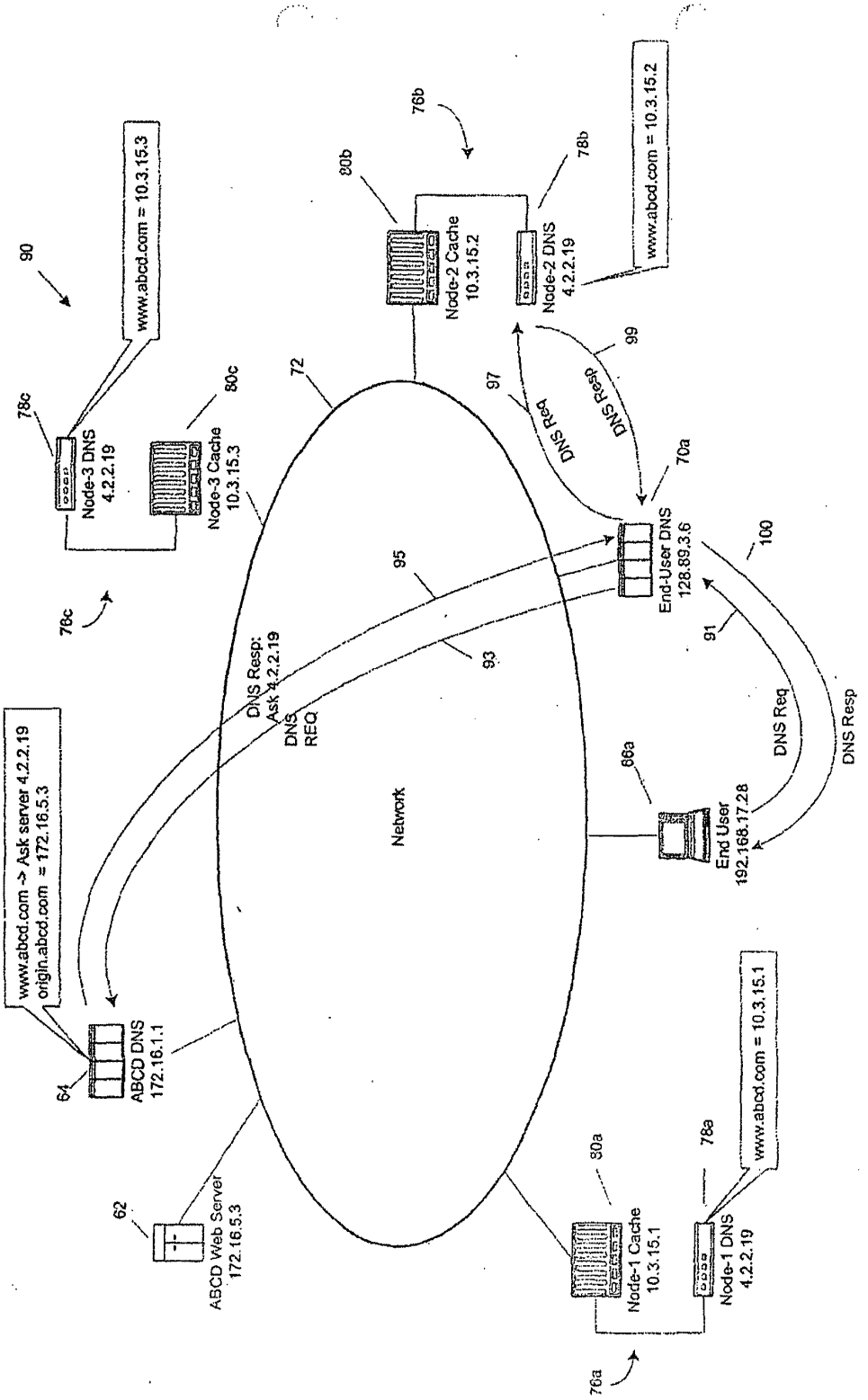

90
www.abcd.com = 10.3.15.3
78c
Node-3 DNS
4.2.2.19
80c
Node-3 Cache
10.3.15.3
76c
72
80b
76b
Node-2 Cache
10.3.15.2
78b
Node-2 DNS
4.2.2.19
www.abcd.com = 10.3.15.2
99
97
DNS Req
DNS Resp
76a
End-User DNS
128.89.3.6
100
91
95
93
DNS Resp:
Ask 4.2.2.19
DNS
REQ
www.abcd.com -> Ask server 4.2.2.19
origin.abcd.com = 172.16.5.3
64
ABCD DNS
172.16.1.1
Network
66a
End User
192.168.17.28
DNS Req
DNS Resp
62
ABCD Web Server
172.16.5.3
80a
Node-1 Cache
10.3.15.1
78a
www.abcd.com = 10.3.15.1
Node-1 DNS
4.2.2.19
76a

Fig.5

PTO/SB/06 (12-04)

Filing Date: 03/18/08

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/050,648

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	310
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	510
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	1			N/A	210
TOTAL CLAIMS (37 CFR 1.16(i))	12 minus 20 =	0	X$ 25		OR	X$50	0
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	X$100			X$210	210
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			185			370	
			TOTAL	0		TOTAL	1240

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDI-TIONAL FEE ($)		RATE ($)	ADDI-TIONAL FEE ($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

		(Column 1)		(Column 2)	(Column 3)			OR		
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDI-TIONAL FEE ($)		RATE ($)	ADDI-TIONAL FEE ($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.