PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/180,934	Filing Date 07/28/2008	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) 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), (l), 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 04/26/2013	(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))	* 22	Minus	** 22	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 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
/KATISCHA WANZER/

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.

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.
12/180,934	10/30/2012	8300523	CPOL956171	1002

62147 7590 10/10/2012

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

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 110 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):

SAMER M. SALAM, Vancouver, CANADA;
Ali Sajassi, San Ramon, 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.

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)

7590 06/27/2012

PATTERSON & SHERIDAN, LLP/CISC
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SUITE 1500
HOUSTON, TX 77056-6582

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.

Victoria Kubitskey	(Depositor's name)
/Victoria Kubitskey/	(Signature)
September 24, 2012	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

TITLE OF INVENTION: MULTI-CHASSIS ETHERNET LINK AGGREGATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1740	$300	$0	$2040	09/27/2012

EXAMINER	ART UNIT	CLASS/SUBCLASS
CEBIC, KENAN	2473	370/225000

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 Patterson & Sheridan, LLP
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: CISCO TECHNOLOGY, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): San Jose, CA

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.
- ☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 20-0782/CPOL956171/GGM

5. **Change in Entity Status** (from status indicated above)
- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27
- ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Jon K. Stewart / Date September 24, 2012

Typed or printed name Jon K. Stewart Registration No. 54,945

This collection of information 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.

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Electronic Patent Application Fee Transmittal

Application Number:	12180934
Filing Date:	28-Jul-2008
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Filer:	Jon K. Stewart/Victoria Kubitskey
Attorney Docket Number:	CPOL956171

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:				
Utility Appl issue fee	1501	1	1740	1740
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	2040

Electronic Acknowledgement Receipt	
EFS ID:	13821998
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Jon K. Stewart/Victoria Kubitskey
Filer Authorized By:	Jon K. Stewart
Attorney Docket Number:	CPOL956171
Receipt Date:	24-SEP-2012
Filing Date:	28-JUL-2008
Time Stamp:	16:16:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$2040
RAM confirmation Number	3520
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Issue Fee Payment (PTO-85B)	CPOL956171_IssueFee.pdf	321858 84d417459bcdfe9826df05430ba85cef67a7132	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32074 7859a9f9691963889f2c0ff1fdefc4221eeed25a61fb	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	353932		

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

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NOTICE OF ALLOWANCE AND FEE(S) DUE

62147 7590 06/27/2012
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	
ART UNIT	PAPER NUMBER
2473	

DATE MAILED: 06/27/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

TITLE OF INVENTION: MULTI-CHASSIS ETHERNET LINK AGGREGATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1740	$300	$0	$2040	09/27/2012

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 SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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)

62147 7590 06/27/2012
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

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.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

TITLE OF INVENTION: MULTI-CHASSIS ETHERNET LINK AGGREGATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1740	$300	$0	$2040	09/27/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
CEHIC, KENAN	2473	370-225000

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 credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information 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.

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Quicker Connections - Exhibit 2013
IPR2025-01088 - Page 9

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL.956171	1002

62147 7590 06/27/2012

PATTERSON & SHERIDAN, LLP/CISC
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HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	

ART UNIT	PAPER NUMBER
2473	

DATE MAILED: 06/27/2012

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

The Patent Term Adjustment to date is 110 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 110 day(s).

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 Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

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.
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.	Applicant(s)	
	12/180,934	SALAM ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

-- 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 *04/23/2012*.
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, 3,5-7, 9, 11-13,15, 17-19, 20, renumbered as 1-13*.
4. ☐ 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 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. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .
   (b) ☐ 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).
7. ☐ 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. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Stewart / Gero McClellan on 06/01/2012.

Please amend the claims as following:

7. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

a downlink interface on the network device for establishing a first downlink connection with a dual-homed device,

a downlink interface on the standby device for establishing a second downlink connection with the dual-homed device, wherein a maximum link aggregate group size on each of the network device and the standby device is set to one, wherein a maximum link aggregate group size on the dual-homed device is set to at least two, and wherein the dual-homed device associates the first and second downlink connections with the link aggregate group;

an uplink interface on each of the network device and the standby device for establishing [[an]] a respective uplink connection with a network core to forward traffic received from the dual-homed device to the network core; and

logic for detecting a failure on the uplink connection of the network device with the network core and, in response, notifying the standby device of the failure, through a inter-chassis control channel and sending a message to the dual-homed device triggering the dual-homed device to begin forwarding traffic to the network core via the second downlink connection between the standby device and the dual-homed device, wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

9. (Currently Amended) The apparatus of claim 7, wherein the first downlink connection remains in an active state, with traffic forwarding prevented, after sending the message to the dual-homed device.

11. (Currently Amended) The apparatus of claim [[10]] 7, wherein the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

12. (Currently Amended) The apparatus of claim 11, further comprising logic for changing a port key or port priority value of a port used for the first downlink connection and sending the changed port key or port priority value to the dual-homed device, ~~in an effort~~ to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

13. (Currently Amended) An apparatus, comprising:

a first switch connected to a second switch through an inter-chassis control channel, the first switch [[having]] comprising:

a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core via an uplink connection, and

a first logic, wherein the first logic is configured to detect a uplink failure on the uplink connection with the network core, only notify the second switch of the uplink failure[[,]] through the inter-chassis control channel, on the uplink connection, and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device,

wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to the network core, and a second logic, wherein the

second logic is configured to receive notification, through the inter-chassis control channel, of the uplink failure from the first switch and, in response to receiving notification of the uplink failure from the first switch, enable an uplink connection between the second switch and the network core if previously disabled,

wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection,

wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from the first switch to the second switch over the inter-chassis control channel, and

wherein the first and second switches are configured such that a maximum number of links in a link aggregate group (LAG) is one and the dual-homed device is configured such that a maximum number of links in the link aggregate group (LAG) is at least two.

14. (Canceled)

15. (Previously Presented) The apparatus of claim 13, wherein the downlink connection of the first switch remains in an active state, with traffic forwarding prevented, after the sending of the message to the dual-homed device.

16. (Canceled)

17. (Currently Amended) The apparatus of claim [[16]] 13, wherein the message sent to the dual-homed device by the first switch comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

18. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

means for establishing a downlink connection between the network device and with a dual-homed device;

means for establishing a downlink connection between the standby device and a dual-homed device, wherein a maximum link aggregate group size on each of the network device and the standby device is set to one, and wherein a maximum link aggregate group size on the dual-homed device is set to at least two, and wherein the dual-homed device associates the first and second downlink connections with the link aggregate group;

means for establishing [[an]] a respective uplink connection on each of the network device and the standby device with a network core to forward traffic received from the dual-homed device to the network core; and

means for detecting a failure on the uplink connection of the network device with the network core and, in response, notifying [[a]] the standby device of the failure, through a inter-chassis control channel and sending a message to the dual-homed device triggering the dual-homed device to begin forwarding traffic to the network core via the second downlink connection between the dual-homed device and

the standby device, wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

Reason For Allowance

For claim 1, and similarly the closest prior art Liu (US 7,197,660) discloses a dual homed device where uplink failure is detected and a switch is done to a standby device. The second closest prior art Wills et al (US 2004/0133693) discloses link aggregate groups and checking if a link is still up. However, the prior art does not either by anticipation or reasonable combination disclose the following:

a downlink interface on the network device for establishing a first downlink connection with a dual-homed device,

a downlink interface on the standby device for establishing a second downlink connection with the dual-homed device, **wherein a maximum link aggregate group size on each of the network device and the standby device is set to one, wherein a maximum link aggregate group size on the dual-homed device is set to at least two, and wherein the dual-homed device associates the first and second downlink connections with the link aggregate group**;

an uplink interface on each of the network device and the standby device for establishing [[an]] a respective uplink connection with a network core to forward traffic received from the dual-homed device to the network core; and

logic for detecting a failure on the uplink connection of the network device with the network core and, in response, notifying the standby device of the failure, through a inter-chassis control channel and sending a message to the dual-homed device triggering the dual-homed device to begin forwarding traffic to the network core via the second downlink connection between the standby device and the dual-homed device, wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENAN CEHIC whose telephone number is (571)270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG BIN YAO can be reached on (571) 272-3182. 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.

/Kenan Cehic/
Examiner, Art Unit 2473

/KWANG B YAO/

Supervisory Patent Examiner, Art Unit 2473

Issue Classification

Application/Control No.	Applicant(s)/Patent Under Reexamination
12180934	SALAM ET AL.
Examiner	**Art Unit**
KENAN CEHIC	2473

ORIGINAL		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
370	220	G	0	1	R	31 / 08 (2006.01.01)					

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
370	217				

☐ 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	11	17												
	2	12	18												
2	3		19												
	4	13	20												
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	14														
10	15														
	16														

/KENAN CEHIC/ Examiner.Art Unit 2473 (Assistant Examiner) (Date)	**Total Claims Allowed:** 13	
/KWANG B YAO/ Supervisory Patent Examiner.Art Unit 2473 06/04/2012 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 3B

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

SEARCHED			
Class	Subclass	Date	Examiner
370	216-228	3/9/2010	kc

SEARCH NOTES		
Search Notes	Date	Examiner
Inventorship Search	3/9/2010	kc
East text search	3/9/2010	kc
Update Search	8/26/2010	kc
Update search	6/4/2011	kc
Update Search	6/3/2012	kc

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
	See Interference Search	6/4/2012	kc

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	29	((SAMER) near2 (SALAM)).INV.	US-PGPUB; USPAT	ADJ	ON	2012/06/04 10:46
L2	55	((ALI) near2 (SAJASSI)).INV.	US-PGPUB; USPAT	ADJ	ON	2012/06/04 10:46
L3	6164	370/216-228.ccls. and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2012/06/04 10:46
L4	31	link aggregate group and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2012/06/04 10:47
L5	5	link aggregate group and "29"	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2012/06/04 10:47
L6	1	(link aggregate group).clm. and "29"	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2012/06/04 10:47
L7	1	(link aggregate group).clm. and 1	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2012/06/04 10:48
L8	1	(link aggregate group).clm. and 2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2012/06/04 10:48
S3	4928	370/216-228.ccls. and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/14 15:33
S4	8	((SAMER) near2 (SALAM)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 15:36
S5	28	((ALI) near2 (SAJASSI)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S6	8	((SAMER) near2 (SALAM)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36

S7	23	S5 not S6	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S8	16150	(standby or backup) near3 switch$3 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 01:11
S9	3	(standby or backup) near3 switch$3 and (out of sync or "out_of_sync") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:12
S10	1	(standby or backup) near3 switch$3 and (inter chassis control channel or "interchassis control channel") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:15
S11	7332	(standby or backup) near3 switch$3 and (redundant or backup or failover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:16
S12	353	(standby or backup) and rdi and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:24
S13	257	(standby or backup or switchover) same ais and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 04:17
S14	26	(standby or backup or switchover) same ais and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and sonet[bsum]	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 04:20
S15	5	(standby or backup or switchover) same ais and (ais with downstream$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and sonet[bsum]	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 14:47
S16	537	activat$5 near6 (standby or backup or switchover) near2 (switch$2 or node$2 or router$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 15:08

		@rlpn<="20080728")				
S17	61	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 15:08
S18	1	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and ("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 16:38
S19	3	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and ("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 16:38
S20	33	(activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4) near6 (fault or failure or corrupt$3 or fail$3 or broken or disrupt$3 or error$4 or abnormal$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:12
S21	6	(activ$4 or primary) with ("p-ais" or ais) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:41
S22	10	(activ$4 or primary or working) with ("p-ais" or ais) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:41
S23	78	(decreas$5 or decrement$4 or low$5) near4 (priorit$5 or weight$5) with (failover$2 or "fail-over" or switch over or "switch-over") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:58

		@rlad<="20080728" or @rlpn<="20080728")				
S24	194	(activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:16
S25	14	(activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:16
S26	14	(activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:17
S27	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/02/17 14:19
S28	1	S27 and failure notification	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:27
S29	1	S27 and (failure notification or switching operation or switching point$2)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:31
S30	0	S27 and embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:42
S31	0	S27 and Embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:43
S32	0	S27 and Embodiment	US-PGPUB; USPAT; EPO; DERWENT;	ADJ	ON	2010/02/17 14:43

			IBM_TDB			
S33	0	S27 and "Embodiment"	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:44
S34	0	S27 and embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 15:32
S35	1	(inter chassis or inter-chassis) control channel$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 16:06
S36	229	control channel$2 with router$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:05
S37	15	(US-20090225661-$ or US-20060023630-$ or US-20050108401-$ or US-20070183347-$ or US-20050111350-$ or US-20030185225-$ or US-20030161260-$ or US-20030021226-$ or US-20040001449-$ or US-20020167895-$ or US-20070280103-$ or US-20060256712-$).did. or (US-7644317-$ or US-6442133-$ or US-5835696-$).did.	US-PGPUB; USPAT	ADJ	ON	2010/02/17 17:05
S38	2	S37 and chassis	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:05
S39	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/02/17 17:06
S40	1	S39 and switch	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:06
S41	10	control channel$2 with (router$2 or switch or switches) and chassis with (router$2 or switch or switches) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:13
S42	4361	control with (router$2 or switch or switches) and chassis with (router$2 or switch or switches) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:17

		@rlpn<="20080728")				
S43	3448	control with (router$2 or switch or switches) same chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:18
S44	1698	control with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:18
S45	346	control with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:51
S46	53	control with chassis and (router$2 or switch or switches) with chassis and core network$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:16
S47	3	control channel$2 with switch$2 and (switch or switches) with chassis and core network$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:19
S48	85	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:21
S49	203	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:22
S50	203	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:22
S51	223	control$4 near3 channel$2 with (chassis or multi-chassis or switch$2) and (switch or switches) with (chassis or multi-chassis) and (@ad<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT;	ADJ	ON	2010/02/17 18:24

		@pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	IBM_TDB			
S52	5	(brown near2 stephen).xa.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/22 18:07
S53	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/03/16 16:05
S54	1	S53 and failure$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:05
S55	1	S53 and backup	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:51
S56	1	S53 and activat$6	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:56
S57	1	S53 and activat$6 same failure notifi$8	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:03
S58	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:16
S59	1	(optical or sonet) with uplink same uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18
S60	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") \	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18
S61	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18
S62	5	(optical or sonet) with uplink same uplink with core network and (@ad<="20080728" or @pd<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT;	ADJ	ON	2010/03/16 17:25

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		@rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	IBM_TDB			
S63	250	uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:37
S64	0	backup with uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:01
S65	35	backup with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:01
S66	59	(backup or protect$5) near4 (edge$2 or gateway$2) and (edge$2 or gateway$2) with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:23
S67	45	(backup or back up) with (edge$2 or gateway$2) and (edge$2 or gateway$2) with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:30
S68	97	(optical or sonet) with access network same core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:35
S69	101	control$4 near3 channel$2 with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 19:17
S70	6	"l1 active state" and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 19:55
S71	15760	(physical or layer "1") near5 (active) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:17

		@rlpn<="20080728")				
S72	0	(physical or layer "1") near5 (active) with ("not") near3 (send$4 or transmi$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:17
S73	19	(physical or layer "1") near5 (active) with (no) near3 (send$4 or transmi$5 or data) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:18
S74	22	(physical or layer "1" or first layer) near5 (active or operational) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:20
S75	10	(physical layer$2 or layer$2 "1" or first layer) near5 (active or operational) with (no or "not") near5 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:22
S76	5	(physical layer$2 or layer$2 "1" or first layer) with (always) near3 (active or operational) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:24
S77	194	(physical or layer "1" or first layer) with (active or operational or power) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:26
S78	29	(physical layer$2 or layer "1" or first layer) with (active or operational or power) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:26
S79	27	link aggregate group and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT;	ADJ	ON	2010/03/17 08:49

		@rlad<="20080728" or @rlpn<="20080728")	IBM_TDB			
S80	985	(one or "1" or single) with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:40
S81	14	(max$4 or availabl$4) near3 (one or "1" or single) with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:40
S82	500	(one or "1" or single) near2 link with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:45
S83	37	(max$4 or availabl$4) near3 (one or "1" or single) same link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:46
S84	8	set$5 near5 (max$4 or availabl$4 or number$2) near3 link$4 near4 (one or "1" or single) and (link or port$2) (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:51
S85	5	(max$4) number$2 with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:00
S86	7	(max$4) number$2 with (link or port$3) (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:00
S87	34	(one or "1" or single) with link (aggregat$4 or trunk$2) same (standby or backup) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:06
S88	40	(one or "1" or single) with (link or	US-PGPUB;	ADJ	ON	2010/03/17

		port$2) (aggregat$4 or trunk$2) same (standby or backup) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	USPAT; EPO; DERWENT; IBM_TDB			10:07
S89	3853	(max$5 or allowabl$5) with (aggreation group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:07
S90	34	(max$5 or allowabl$5) with (aggregat$5 group) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:08
S91	0	set$4 near2 (number of link$2) with (aggregat$5 group) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S92	0	set$4 near2 (number of link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S93	0	(number of link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S94	40	(number near4 link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S95	137	(number near4 link$2) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S96	173	(number near4 (link$2 or port$2)) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:16
S97	77	(number near4 (link$2 or port$2)) with (one or "1" or single) with (aggregat$5	US-PGPUB; USPAT;	ADJ	ON	2010/03/17 11:16

		group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	EPO; DERWENT; IBM_TDB			
S98	0	(out of sync$5) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:43
S99	0	(out of sync$5) same (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:43
S100	39	(synchron$6) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:44
S101	48	(synchron$8) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:44
S102	19	(synchroniz$8 or sync) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:01
S103	0	(out of sync or "out_of_sync") with standby and (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:04
S104	0	(out of sync or "out_of_sync") and (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:05
S105	1	(US-20040133693-$).did.	US-PGPUB	ADJ	ON	2010/03/17 12:12
S106	1	S105 and sync$9	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:12
S107	1	S105 and (sync$12 or bit)	US-PGPUB; USPAT; EPO;	ADJ	ON	2010/03/17 12:16

			DERWENT; IBM_TDB			
S108	1	S105 and (key$4 or priorit$4)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:21
S109	0	(inter chassis or inter-chassis) channel$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 16:25
S110	2	(inter chassis or inter-chassis) near2 channel$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 16:25
S111	1	(US-20080181196-$).did.	US-PGPUB	ADJ	ON	2010/08/25 16:31
S112	28	control near2 (channel$2 or path$2) with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:16
S113	975	heartbeat$4 with (router$2 or switch$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:49
S114	38	heartbeat$4 with (router$2 or switch$2) with synch$7 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:51
S115	48	heartbeat$4 with (router$2 or switch$2) with synch$10 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:51
S116	2	"checkpoint sequence value"	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 18:59
S117	1	(US-20080181196-$).did.	US-PGPUB	ADJ	ON	2010/11/04 14:39
S118	1	(US-20080181196-$).did.	US-PGPUB	ADJ	ON	2010/11/04 14:40
S119	1	S118 and control$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/11/04 14:40

S120	1	S118 and control$2 and IP	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/11/04 14:41
S121	2	"US 20100020680"	US-PGPUB; USPAT; USOCR; DERWENT	ADJ	ON	2010/11/04 14:59
S122	1	(US-20100020680-$).did.	US-PGPUB	ADJ	ON	2010/11/04 14:59
S123	1	S122 and synchro$8	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/11/04 14:59
S124	2	"US 20100020680"	US-PGPUB; USPAT; USOCR; DERWENT	ADJ	ON	2010/12/17 15:30
S125	526	("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 15:36
S126	1	(activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (source or downlink$2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 15:48
S127	14	(activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (source or downlink$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 15:48
S128	4521	(router$2 or switch) near4 bus$4 and (@ad<="20080728" or	US-PGPUB; USPAT;	ADJ	ON	2010/12/17 16:45

Quicker Connections - Exhibit 2013
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		@pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	EPO; DERWENT; IBM_TDB			
S129	188	(router$2 or switch) near4 control bus$4 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:45
S130	0	(router$2 or switch$2) near4 physical control (path or bus$4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:48
S131	0	(router$2 or switch$2) with physical control (path or bus$4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:49
S132	5	(router$2 or switch$2) near3 between near4 control (bus$4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:50
S133	0	(router$2 or switch$2) near3 dedicated control (link) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:51
S134	1	(router$2 or switch$2) near3 between near4 control (link) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:52
S135	1	(router$2 or switch$2) near3 between near4 control (cable$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 17:01
S136	15	(router$2 or switch$2) near5 control (cable$3 or wire$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 17:02
S137	1	(US-20100020680-$).did.	US-PGPUB	ADJ	ON	2011/03/18 14:33

S138	1	S137 and sync$9	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/03/18 14:33
S139	0	out of sync same lacp and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:17
S140	0	out of sync and lacp and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:18
S141	0	out of sync and lacp and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:18
S142	0	out of sync and link aggregate control protocol and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:19
S143	7	link aggregate control protocol and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:19
S144	1	(US-20040133693-$).did.	US-PGPUB	ADJ	ON	2011/06/01 16:37
S145	1	S144 and ("802.3ad device" or end device$2)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:37
S146	1	S144 and ("802.3ad device" or end device$2 or "1C")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:37
S147	12	(synchroniz$8 or sync) with (lacp or link aggregat$5 control protocol) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:50
S148	178	(link) near2 fail$5 with (link aggregat$6 or "802.3ad" or LAG) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:37

		@rlpn<="20080728")				
S149	1	("6,058,116").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/06/04 14:41
S150	127	uplink near2 fail$5 with (notify$5 or inform$5 or signal$4 or message$4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:55
S151	2	uplink near2 fail$5 with (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:56
S152	8	uplink near2 fail$5 with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:56
S153	7	uplink near2 fail$5 same (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:01
S154	8	uplink near2 fail$5 same (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:02
S155	11	uplink near2 (fail$5 or fault$4 or unavailabl$4) same (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:03
S156	57	uplink near2 fail$5 and (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:13

		@rlpn<="20080728")				
S157	99	uplink near2 (fail$5 or fault$4 or unavailabl$4) and (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:13
S158	80	uplink near2 (fail$5 or fault$4 or unavailabl$4) and (notify$5 or inform$5 or signal$4 or message$4) near5 (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:13
S159	3	("2004/0133693").URPN.	USPAT	ADJ	ON	2011/06/04 16:06
S160	10	"US 6804721"	US-PGPUB; USPAT; USOCR; DERWENT	ADJ	ON	2011/06/04 16:13
S161	8	("6804721").URPN.	USPAT	ADJ	ON	2011/06/04 16:13
S162	6689	(fail$5 or fault$4 or unavailabl$4) with (notify$5 or inform$5 or signal$4 or message$4) near3 (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 16:18
S163	36	(fail$5 or fault$4 or unavailabl$4) with (notify$5 or inform$5 or signal$4 or message$4) near3 (standby or backup or switchover or switchover or secondary or redundant) with (control) near2 (channel$2 or link) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 16:20
S164	7	("20020184387" | "20050243713" | "20060092950" | "20060133264" | "20070008880" | "7197660" | "7209435").PN. OR ("7848226").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/06/04 17:08
S165	7	("20020184387" | "20050243713" | "20060092950" | "20060133264" | "20070008880" | "7197660" | "7209435").PN. OR ("7848226").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/06/04 18:04
S166	4	(notify$5 or inform$5 or signal$4 or message$4) near3 (standby or backup	US-PGPUB; USPAT;	ADJ	ON	2011/06/04 18:04

		or switchover or switchover or secondary or redundant) and S165	EPO; DERWENT; IBM_TDB			
S167	1	(US-7197660-$).did.	USPAT	ADJ	ON	2011/06/04 18:08
S168	1	S167 and (control or status)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:09
S169	1	S167 and (control or status or fail or unavailable or standby or backup or switchover or switchover or secondary or redundant)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:15
S170	1	S167 and (control or status or fail$4 or unavailable or standby or backup or switchover or switchover or secondary or redundant)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:16
S171	1	(US-20040133693-$).did.	US-PGPUB	ADJ	ON	2011/06/04 18:45
S172	0	S171 and (synchr$6 or hello or period$5)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:45
S173	1	S171 and (state or hello or period$5)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:46
S174	1	S171 and (synchroni$7 or hello or period$5)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:46

6/4/2012 11:08:31 AM
C:\Users\kcehic\Desktop\apps\12180934\934.wsp

Interference Search KC

EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L9	4	(link aggregate group).clm.	USPAT; UPAD	ADJ	ON	2012/06/04 11:06
L10	0	(inter chasis control channel$2).clm.	USPAT; UPAD	ADJ	ON	2012/06/04 11:06

6/4/2012 11:07:38 AM
C:\Users\kcehic\Desktop\apps\12180934\934.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12180934	SALAM ET AL.
	Examiner	**Art Unit**
	KENAN CEHIC	2473

✓	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	03/17/2010	08/28/2010	12/17/2010	06/04/2011	06/04/2012				
1	1	✓	✓	✓	✓	=				
	2	✓	-	-	-	-				
2	3	✓	✓	✓	✓	=				
	4	✓	✓	✓	✓	-				
3	5	✓	✓	✓	✓	=				
4	6	✓	✓	✓	✓	=				
5	7	✓	✓	✓	✓	=				
	8	✓	-	✓	-	-				
6	9	✓	✓	✓	✓	=				
	10	✓	✓	✓	✓	-				
7	11	✓	✓	✓	✓	=				
8	12	✓	✓	✓	✓	=				
9	13	✓	✓	✓	✓	=				
	14	✓	-	-	✓	-				
10	15	✓	✓	✓	✓	=				
	16	✓	✓	✓	✓	=				
11	17	✓	✓	✓	✓	=				
12	18	✓	✓	✓	✓	=				
	19	✓	-	-	-	-				
13	20	✓	✓	✓	✓	=				

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

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
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	12180934	Filing Date	2008-07-28	Docket Number (if applicable)	CPOL956171US	Art Unit	2473
First Named Inventor	Samer Salam			Examiner Name	K. Cehic		

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
One-month extension of time.

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 20-0782

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
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Signature of Registered U.S. Patent Practitioner			
Signature	/Gero G. McClellan/	Date (YYYY-MM-DD)	2012-04-23
Name	Gero G. McClellan	Registration Number	44227

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.

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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 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 Application of:
Samer M. SALAM et al.

Serial No.: 12/180,934

Confirmation No.: 1002

§

Filed: July 28, 2008

Group Art Unit: 2473

Examiner: Kenan Cehic

For: MULTI-CHASIS ETHERNET LINK AGGREGATION

MAIL STOP RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office to fax number 571-273-8300 to the attention of Examiner Kenan Cehic, or electronically transmitted via EFS-Web, on the date shown below:

April 23, 2012 /Robyne Orlando/
Date Name

REQUEST FOR CONTINUED EXAMINATION AND AMENDMENTS

Dear Sir:

In response to the Final Office Action dated December 22, 2011, having a shortened statutory period for response set to expire on March 22, 2012, extended one month to include April 22, 2012, Applicants are filing a Request for Continued Examination (RCE). Please enter this response and reconsider the claims pending in the application for reasons discussed below. A fee of $1080.00 is due in connection with this response $150.00 for a one month extension of time and a fee of $930.00 for the Request for Continued Examination (RCE) fee and is being paid by credit card. The Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782 / CPOL956171 for any fees, including extension of time fees or excess claim fees, required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks/Arguments** begin on page 8 of this paper.

Quicker Connections - Exhibit 2013
IPR2025-01088 - Page 48

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method comprising:

configuring a maximum number of links allowed in a link aggregate group (LAG) on each of a network device and a standby network device to one;

configuring a maximum number of links allowed in the link aggregate group (LAG) on a dual-homed device to at least two, wherein the network device provides a first downlink connection with the dual-homed device and the standby network device provides a second downlink connection to the dual-homed device, and wherein the dual-homed device associates the first and second downlinks links with the link aggregate group;

forwarding traffic received by [[a]] the network device on [[a]] the first downlink connection with [[a]] the dual-homed device to an uplink connection with a network core;

detecting a failure on the uplink connection with the network core; and

in response to detecting the failure, ~~only~~ notifying [[a]] the standby device of the failure, through an inter-chassis control channel between the network device and the standby device and sending a message to the dual-homed device triggering the dual-homed device to begin forwarding traffic to the network core via [[a]] the second downlink connection between the standby device and the dual-homed device, wherein the inter-chassis control channel is physically independent of the uplink connection and the first and second downlink connections, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

2. (Canceled)

3. (Previously Presented) The method of claim 1, further comprising, maintaining the first downlink connection in an active state, while preventing traffic

forwarding on the first downlink connection, after sending the message to the dual-homed device.

4. (Cancelled)

5. (Original) The method of claim 1, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

6. (Original) The method of claim 5, further comprising:

changing at least one of a port key and a port priority value for a port used for the first downlink connection; and

sending a message with the changed port key or port priority value to the dual-homed device.

7. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

a downlink interface on the network device for establishing a first downlink connection with a dual-homed device,

a downlink interface on the standby device for establishing a second downlink connection with the dual-homed device, wherein a maximum link aggregate group size on each of the network device and the standby device is set to one, wherein a maximum link aggregate group size on the dual-homed device is set to at least two, and wherein the dual-homed device associates the first and second downlink connections with the link aggregate group;

an uplink interface on each of the network device and the standby device for establishing an uplink connection with a network core to forward traffic received from the dual-homed device to the network core; and

logic for detecting a failure on the uplink connection with the network core and, in response, ~~only~~ notifying the standby device of the failure, through a inter-chassis control channel and sending a message to the dual-homed device triggering the dual-homed

device to begin forwarding traffic to the network core via [[a]] the second downlink connection between the standby device and the dual-homed device, wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

8. (Canceled)

9. (Previously Presented) The apparatus of claim 7, wherein the downlink connection remains in an active state, with traffic forwarding prevented, after sending the message to the dual-homed device.

10. (Canceled)

11. (Currently Amended) The apparatus of claim [[10]] 7, wherein the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

12. (Currently Amended) The apparatus of claim 11, further comprising logic for changing a port key or port priority value of a port used for the first downlink connection and sending the changed port key or port priority value to the dual-homed device, in an effort to trigger the ~~dual-homed~~ dual-homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

13. (Currently Amended) An apparatus, comprising:

a first switch connected to a second switch through an inter-chassis control channel, the first switch having a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core, and logic,

wherein the logic is configured to detect a failure on the uplink connection with the network core, only notify the second switch of the failure, through inter-chassis control channel, on the uplink connection, and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device,

wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to the network core, and logic, wherein the logic is configured to receive notification, through the inter-chassis control channel, of the uplink failure from the first switch and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network core if previously disabled,

wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection,

wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from the first switch to the second switch over the inter-chassis control channel, and

wherein the first and second switches are configured such that a maximum number of links in a link aggregate group (LAG) is one and the dual-homed device is configured such that a maximum number of links in the link aggregate group (LAG) is at least two.

14. (Canceled)

15. (Previously Presented) The apparatus of claim 13, wherein the downlink connection of the first switch remains in an active state, with traffic forwarding prevented, after the sending of the message to the dual-homed device.

16. (Canceled)

17. (Currently Amended) The apparatus of claim [[16]] 13, wherein the message sent to the dual-homed device by the first switch comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

18. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

means for establishing a downlink connection between the network device and ~~with~~ a dual-homed device;

means for establishing a downlink connection between the standby device and a dual-homed device, wherein a maximum link aggregate group size on each of the network device and the standby device is set to one, and wherein a maximum link aggregate group size on the dual-homed device is set to at least two, and wherein the dual-homed device associates the first and second downlink connections with the link aggregate group;

means for establishing an uplink connection on each of the network device and the standby device with a network core to forward traffic received from the dual-homed device to the network core; and

means for detecting a failure on the uplink connection with the network core and, in response, ~~only~~ notifying a standby device of the failure, through a inter-chassis control channel~~,~~ and sending a message to the dual-homed device triggering the dual-homed device to begin forwarding traffic to the network core via [[a]] the second downlink connection between the dual-homed device and the standby device, the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

19. (Canceled)

20. (Original) The apparatus of claim 18, wherein:

the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

REMARKS

This is intended as a full and complete response to the Final Office Action dated December 22, 2011, having a shortened statutory period for response set to expire on March 22, 2012. Applicants submit this response to place the application in condition for allowance or in better form for appeal. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 3-7, 9-13, 15-18, and 20 are pending in the application. Claims 1, 3, 5-7, 9, 11-13, 15, 17, 18, 20 remain pending following entry of this response. Claims 4, 10 and 16 have been cancelled. Claims 1, 7, 11-13, 17, and 18 have been amended. Applicants submit that the amendments do not introduce new matter.

Further, Applicants are not conceding in this application that those amended (or canceled) claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution of the claimed subject matter. Applicants respectfully reserve the right to pursue these (pre-amended or canceled claims) and other claims in one or more continuations and/or divisional patent applications.

Claim Rejections - 35 U.S.C. § 112

Claims 5, 6, 11, 12, 17, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In response, Applicants have amended claims 5, 6, 11, 12, 17 and 20 to address an antecedent basis noted by the Examiner. Accordingly, Applicants respectfully request this rejection be withdrawn.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 5-7, 11, 12, 18, 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Liu* (US 7,197,660 hereinafter *"Liu"*) in view of *Wils et al.* (US 2004/0133693 hereinafter *"Wils"*). Respectfully, Applicants traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

A. determining the scope and content of the prior art;
B. ascertaining the differences between the claimed invention and the prior art;
C. resolving the level of ordinary skill in the art; and
D. considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

For example, as amended, claim 1 recites:

- configuring a maximum number of links allowed in a link aggregate group (LAG) on each of a network device and a standby network device to one;
- configuring a maximum number of links allowed in the link aggregate group (LAG) on a dual-homed device to at least two, wherein the network device provides a first downlink connection with the dual-homed device and the standby network device provides a second downlink connection to the dual-homed device, and wherein the dual-homed device associates the first and second downlinks links with the link aggregate group.

Claims 7, 13, and 18 each recite a comparable limitation, where a LAG on a network device and a standby device is configured with a maximum of one, while simultaneously, a maximum number of links in a LAG on a dual-homed device is set to at least two. Accordingly, Applicants believe claims 1, 7, 13, 18, and the dependent claims, are allowable over the cited references, and allowance of the claims is respectfully requested.

Claims 3 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Liu* (US 7,197,660 hereinafter *"Liu"*) in view of *Wils et al.* (US 2004/0133693 hereinafter *"Wils"*) as applied to claims 1, 7, 13, above, and in further view of *Wu et al.* (US 2009/0096592 hereinafter *"Wu"*).

Claims 4 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Liu* (US 7,197,660 hereinafter *"Liu"*) in view of *Wils et al.* (US 2004/0133693 hereinafter *"Wils"*) as applied to claims 1, 7, 13, above, and in further view of *Vinayagam et al.* (US 2009/0109998 hereinafter *"Vinayagam"*).

Claims 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Liu* (US 7,197,660 hereinafter *"Liu"*) in view of *Imajuku et al.* (US 2006/0256712 hereinafter *"Imajuku"*), *Wils et al.* (US 2004/0133693 hereinafter *"Wils"*) as applied to claim 13 above, and further in view of *Wu et al.* (US 2009/0096592 hereinafter *"Wu"*).

Claims 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Liu* (US 7,197,660 hereinafter *"Liu"*) in view of *Imajuku et al.* (US 2006/0256712 hereinafter *"Imajuku"*), *Wils et al.* (US 2004/0133693 hereinafter *"Wils"*) as applied to claim 13 above, and further in view of *Vinayagam et al.* (US 2009/0109998 hereinafter *"Vinayagam"*).

Claims 3, 4, 9, 10, 15, 16, each depend from one of independent claims 1, 7, 13, and 18. As applicant believe the amendments to independent claims 1, 7, 13, and 18 put these claims in condition for allowance, Applicants believe the rejection of dependent claims 3, 4, 9, 10, 15, and 16 is overcome without the need for further comment

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

If the Examiner believes any issues remain that prevent this application from going to issue, the Examiner is strongly encouraged to contact Gero McClellan, attorney of record, at (336) 698-4286, to discuss strategies for moving prosecution forward toward allowance.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

/Gero G. McClellan, Reg. #44227/

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Quicker Connections - Exhibit 2013
IPR2025-01088 - Page 58

Electronic Patent Application Fee Transmittal

Application Number:	12180934
Filing Date:	28-Jul-2008
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Filer:	Gero G. McClellan/Robyne Orlando
Attorney Docket Number:	CPOL956171

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	150	150

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	930	930
		Total in USD ($)		**1080**

Electronic Acknowledgement Receipt	
EFS ID:	12611080
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Gero G. McClellan/Robyne Orlando
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL956171
Receipt Date:	23-APR-2012
Filing Date:	28-JUL-2008
Time Stamp:	21:55:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1080
RAM confirmation Number	7670
Deposit Account	200782
Authorized User	MCCLELLAN,GERO G.

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)	CPOL956171_RCE_EF.pdf	697377	no	3
Warnings:					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	CPOL956171_RCE_AMENDMENT_EF.pdf	109165	no	11
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32370	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	838912		

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
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/180,934	07/28/2008	

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), (l), 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 04/23/2012	(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))	* 13	Minus	** 20	= 0	X $ =		OR	X $60=	0
Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0	X $ =		OR	X $250=	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

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	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:
/VIKKI GRAY/

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.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

62147 7590 12/22/2011

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	
ART UNIT	PAPER NUMBER
2473	

NOTIFICATION DATE	DELIVERY MODE
12/22/2011	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):

PAIR_cofficeaction@pattersonsheridan.com
houston_mail@pattersonsheridan.com

Office Action Summary	Application No.	Applicant(s)	
	12/180,934	SALAM ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

-- 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 *09/30/2011*.

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) *1,3-7,9-13,15-18 and 20* 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) *1,3-7,9-13,15-18 and 20* 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

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 5, 6, 11, 12, 17, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For Claims 5, 11, 17, 20 the claims recite "wherein the message sent to the dual-homed device". There is no antecedent basis for this limitation. Dependent claims are rejected based on their dependency.

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, 5-7, 11, 12, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Wills et al. (US 2004/0133693)

For claim 1, Liu discloses A method comprising:

forwarding traffic received by a network device (see figure 3; NS1 or NS2) on a first downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both) connected to to an uplink connection with a network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet);

detecting a failure on the uplink connection with the network core; and in response to detecting the failure, notifying a standby device of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure) , through an inter-chassis control channel between the network device and the standby device (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60) and triggering the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding), the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60),

For claim 7, Liu discloses An apparatus having a network device and an standby device (see figure 3; NS1 or NS2), the

apparatus comprising:

a downlink interface for establishing a downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both);

an uplink interface for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet); and

logic (see figure 2) for detecting a failure on the uplink connection with the network core and, in response, only notifying the standby device of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), through a inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60), to triggerining the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding), the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60),

For claim 18, Liu discloses an apparatus having a network device and an standby device (see figure 3; NS1 or NS2), the apparatus comprising:

means for establishing a downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both);

means for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet); and

means for detecting a failure on the uplink connection with the network core and, in response, ~ notifying a standby device of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), through a inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60) and triggering the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the dual- homed device and the standby device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding), the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60),

Liu does not explicitly disclose the following:

For claim 1, and similarly 7, 18, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

For claim 5, and 11, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP)

For claim 6, 12, changing at least one of a port priority value for a port used for the first downlink connection; and sending a message with the changed port key or port priority value to the dual- homed device.

For claim 20, the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

Wils from the same or similar field of endeavor discloses the following:

For claim 1, and similarly 7, 18, Wils discloses, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel (see section 0045; synchronization means in nodes send periodically messages indicating their state / health / functioning over ICI).

For claim 5, and 11, Wils discloses wherein sending the message to the dual-homed device (see fig. 2) comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061).

For claim 6, 12, Wils discloses changing at least one of a port priority value for a port used for the first downlink connection (see section 0036-37; section 0051, 0058); and sending a message with the changed port priority value to the dual- homed device (see section 0036-37, section 0051, 0058; see fig. 2).

For claim 20, Wils discloses the message sent to the dual-homed device (see fig. 2) comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit.., synchronization bit in the LACPDU to keep it low,..out-of sync state"; section 0055, 0061); and

the apparatus further comprises means for changing port priority value of a port used for the downlink connection (see section 0036-37, section 0051, 0058; see fig. 2) and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP (see section 0036-37, section 0051, 0058; see fig. 2).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Wils, in order to provide a plurality of network devices as representing a single point device of the point-to-point
protocol, such as the IEEE 802.3ad standard, which would make it possible to have one or both of the points of the IEEE 802.3ad standard be multiple devices. Further the devices can be configured to behave as a single point in such a way that the multiple devices still adhere to the 802.3ad standard. Thus the multi device point can be seamlessly connected to a conventional single device that supports the 802.3ad specification (see Wils sections 0006-10). It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Wils, in order to provide a method of checking the health of redundant devices and switching over to a back up device based on this health thereby providing continued service for the end user (see Wils section 0045). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Wils to network layer devices (SW3, SW4,

NS1, NS2) of Liu where Liu suggest use of similar heartbeat / health messages (see Liu col 6 lines 25-32; Hello messages)

3. Claims 13 and 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Imajuku et al (US 2006/0256712) and Wills et al. (US 2004/0133693)

For claim 13, Liu discloses An apparatus, comprising:

a first switch connected to a second switch (see figure 3; NS1 or NS2) through an inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60), the first

switch having a downlink interface for establishing a downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both), an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet), and logic (see figure 2) ,

wherein the logic is configured to detect a failure on the uplink connection with the network core, only notify the second switch of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), through inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60),

, on the uplink connection (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), and trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding),

wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both), an uplink interface for forwarding traffic from the dual- homed device to the network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet), and logic, wherein the logic is configured to receive notification (see figure 2), through the inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60), of the uplink failure from the first switch and, in response to receiving notification of the uplink failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), forward to the core network,

wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7

lines 35-43; col 7 lines 55-60),

wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from the first switch to the second switch over the inter-chassis control channel.

Liu does not explicitly disclose the following:

For claim 13, enable an uplink connection between the second switch and the network core if previously disabled; wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

For claim 17, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP)

Imajuku from the same or similar field of endeavor discloses the following:
For claim 13, Imajuku enable an uplink connection between the second switch and the network core if previously disabled (see section 0226 "failure notification information detected…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Imajuku, in order to provide a method that prevents the requirement to reduce disconnection of a normal path set in the data plane and unnecessary switching operations as bad influences due to failure of the control plane. It would have been obvious to person of ordinary skill in the art to use an underlying physical optical infrastructure (Imajuku) to implement the router / switches of Liu in order to provide increased bandwidth which optical networks are capable of.

Wils from the same or similar field of endeavor discloses the following:

For claim 13, Wils discloses, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel (see section 0045; synchronization means in nodes send periodically messages indicating their state / health / functioning over ICI).

For claim 17, Wils discloses wherein sending the message to the dual-homed device (see fig. 2) comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu and Imajuku by using the above recited features, as taught by Wils, in order to provide a plurality of network devices as representing a single point device of the point-to-point protocol, such as the IEEE 802.3ad standard, which would make it possible to have one or both of the points of the IEEE 802.3ad standard be multiple devices. Further the devices can be configured to behave as a single point in such a way that the multiple devices still adhere to the 802.3ad standard. Thus the multi device point can be seamlessly connected to a conventional single device that supports the 802.3ad specification (see Wils sections 0006-10). It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Wils, in order to provide a method of checking the health of redundant devices and switching over to a back up device based on this health thereby providing continued service for the end user (see Wils section 0045). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Wils to network layer devices (SW3, SW4, NS1, NS2) of Liu where Liu suggest use of similar heartbeat / health messages (see Liu col 6 lines 25-32; Hello messages)

4. Claims 3 and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Wills et al. (US 2004/0133693) as applied to claims 1, 7, 13 above, and further in view of WU et al. (US 2009/0096592)

For claim 3 and similarly 9, Liu discloses while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding).

Liu and Wills do not explicitly discuss the following:

For claim 3 and similarly 9,maintaining the first connection in an active state.

WU from the same or similar field of endeavor discloses the following:

For claim 3 and similarly 9, WU discloses maintaining the first connection in an active state (see section 0006-7).

It would have been obvious to a person of ordinary skill in the art to combine the teaching of keeping the physical layer active, even though no data is being sent, by WU to the teachings of Liu and Wills since all the claimed elements were known in the prior art and one skilled in the art could have combined the method of keeping the physical layer active (power is supplied), where there would be no change to their respective functions. The combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Further, this would allow for the

communication system to be always ready to send / receive data, since the communication system is power on and thus would know if there is data being received or needs to be transmitted.

5. Claims 4 and 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Wills et al. (US 2004/0133693) as applied to claims 1, 7, 13 above, and further in view of Vinayagam et al. (US 2009/0109998)

For claim 4, and similarly 10, Liu and Wills disclose all the claimed features as shown above.

Liu and Wills do not explicitly discuss the following:

For claim 4, and similarly 10, setting a maximum number of links in a link aggregate group (LAG) to one.

Vinayagam from the same or similar field of endeavor discloses the following:

For claim 4, and similarly 10, setting a maximum number of links in a link aggregate group (LAG) to one (see section 0024 "link aggregation…specify a known limit to maximum number of ports"; claim 10; It would have been obvious to set a maximum number of ports (i.e. links) for a link aggregation to a arbitrary number such as 1 (i.e. design choice)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu and Wills by using the above recited features, as taught by Vinayagam, in order to provide a self-configuring manner using

IEEE 802.3ad Link Aggregation Control Protocol such that drawbacks and inefficiencies associated with the conventional manual configuration required when using IEEE 802.3ad Link Aggregation Control Protocol would be advantageous, desirable and useful (see Vinayagam section 0004-0007). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Vinayagam to the aggregated links of Wills.

6. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Imajuku et al (US 2006/0256712) , Wills et al. (US 2004/0133693) as applied to claims 13 above, and further in view of WU et al. (US 2009/0096592)

For claim 3 and similarly 9, 15, Liu discloses while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding).

Liu, Imajuku and Wills do not explicitly discuss the following:

For claim 3 and similarly 9, 15,maintaining the first connection in an active state.

WU from the same or similar field of endeavor discloses the following:

For claim 3 and similarly 9, 15, WU discloses maintaining the first connection in an active state (see section 0006-7).

It would have been obvious to a person of ordinary skill in the art to combine the teaching of keeping the physical layer active, even though no data is being sent, by WU to the teachings of Liu, Imajuku and Wills since all the claimed elements were known in the prior art and one skilled in the art could have combined the method of keeping the physical layer active (power is supplied), where there would be no change to their respective functions. The combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Further, this would allow for the communication system to be always ready to send / receive data, since the communication system is power on and thus would know if there is data being received or needs to be transmitted.

7. Claims 16 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Imajuku et al (US 2006/0256712) , Wills et al. (US 2004/0133693) as applied to claims 13 above, and further in view of Vinayagam et al. (US 2009/0109998)

For claim 4, 10, and 16, Liu, Imajuku and Wills disclose all the claimed features as shown above.

Liu, Imajuku and Wills do not explicitly discuss the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one.

Vinayagam from the same or similar field of endeavor discloses the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one (see section 0024 "link aggregation…specify a known limit to maximum

number of ports"; claim 10; It would have been obvious to set a maximum number of ports (i.e. links) for a link aggregation to a arbitrary number such as 1 (i.e. design choice)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu, Imajuku and Wills by using the above recited features, as taught by Vinayagam, in order to provide a self-configuring manner using IEEE 802.3ad Link Aggregation Control Protocol such that drawbacks and inefficiencies associated with the conventional manual configuration required when using IEEE 802.3ad Link Aggregation Control Protocol would be advantageous, desirable and useful (see Vinayagam section 0004-0007). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Vinayagam to the aggregated links of Wills.

Conclusion

8. 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,

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.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENAN CEHIC whose telephone number is (571)270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG BIN YAO can be reached on (571) 272-3182. 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.

/Kenan Cehic/
Examiner, Art Unit 2473

/KWANG B YAO/
Supervisory Patent Examiner, Art Unit 2473

Notice of References Cited	Application/Control No. 12/180,934	Applicant(s)/Patent Under Reexamination SALAM ET AL.	
	Examiner KENAN CEHIC	Art Unit 2473	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0133693	07-2004	Wils et al.	709/230
*	B	US-2006/0256712 A1	11-2006	Imajuku et al.	370/218
*	C	US-7,197,660	03-2007	Liu et al.	714/4.12
*	D	US-2009/0109998 A1	04-2009	Vinayagam et al.	370/465
*	E	US-2009/0096592 A1	04-2009	WU et al.	340/310.12
	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
	12180934	SALAM ET AL.
	Examiner	**Art Unit**
	KENAN CEHIC	2473

✓	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	03/17/2010	08/28/2010	12/17/2010	06/04/2011					
	1	✓	✓	✓	✓					
	2	✓	-	-	-					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	-	✓	-					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	-	-	✓					
	15	✓	✓	✓	✓					
	16	✓	✓	✓	✓					
	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	-	-	-					
	20	✓	✓	✓	✓					

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12180934
Filing Date	2008-07-28
First Named Inventor	Samer M. Salam
Art Unit	2473
Examiner Name	Kenan Cehic
Attorney Docket Number	CPOL956171

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	6032194		2000-02-29	Gai et al.	
	2	6330229	B1	2001-12-11	Jain et al.	
	3	6513129	B1	2003-01-28	Tentij et al.	
	4	6535491	B2	2003-03-18	Gai et al.	
	5	6542934	B1	2003-04-01	Bader et al.	
	6	6628661	B1	2003-09-30	Goldman et al.	
	7	6678241	B1	2004-01-13	Gai et al.	
	8	6697339	B1	2004-02-24	Jain	

EFS Web 2.1.17

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12180934
	Filing Date	2008-07-28
	First Named Inventor	Samer M. Salam
	Art Unit	2473
	Examiner Name	Kenan Cehic
	Attorney Docket Number	CPOL956171

	9	6721275	B1	2004-04-13	Rodeheffer et al.	
	10	6801506	B1	2004-10-05	Dey	
	11	6891808	B2	2005-05-10	Ishii	
	12	6956824	B2	2005-10-18	Mark et al.	
	13	6987740	B1	2006-01-17	Di Benedetto et al.	
	14	7016351	B1	2006-03-21	Farinacci et al.	
	15	7453900	B2	2008-11-18	Robinson et al.	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code1	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020112072	A1	2002-08-15	Jain	
	2	20020152320	A1	2002-10-17	Lau	

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12180934
	Filing Date	2008-07-28
	First Named Inventor	Samer M. Salam
	Art Unit	2473
	Examiner Name	Kenan Cehic
	Attorney Docket Number	CPOL956171

	3	20030179700	A1	2003-09-25	Saleh et al.	
	4	20040105390	A1	2004-06-03	Saksio	
	5	20060227704	A1	2006-10-12	Nakagawa et al.	
	6	20070047578	A1	2007-03-01	Abe et al.	
	7	20070237085	A1	2007-10-11	Tirumalai et al.	
	8	20080016402	A1	2008-01-17	Harel et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

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. /K.C./

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12180934
	Filing Date	2008-07-28
	First Named Inventor	Samer M. Salam
	Art Unit	2473
	Examiner Name	Kenan Cehic
	Attorney Docket Number	CPOL956171

	1	Office Action History for U.S. Patent Application Serial No.11/398,519 (CPOL778793) from October 29, 2008 to February 23, 2011	☐
	2	user. (2001). In Hargrave's Communications Dictionary, Wiley. Retrieved on August 2, 2010 from the Internet: <http://www.credoreference.com/entry/hargravecomms/user>.	☐
	3	user. (2006). In ATIS Telecom Glossary, Alliance for Telecommunications Industry Solutions, Retrieved on August 2, 2010 from the Internet: <http://www.is-works.com/glossary/definition.aspx?id=336>.	☐
	4	designate. (2007). In the American Heritage® Dictionary of the English Language. Retrieved on August 2, 2010 from the Internet: <http://www.credoreference.com/entry/hmdictenglang/designate>.	☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/Kenan Cehic/	Date Considered	12/12/2011

*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.

EFS Web 2.1.17

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

SEARCHED			
Class	Subclass	Date	Examiner
370	216-228	3/9/2010	kc

SEARCH NOTES		
Search Notes	Date	Examiner
Inventorship Search	3/9/2010	kc
East text search	3/9/2010	kc
Update Search	8/26/2010	kc
Update search	6/4/2011	kc

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Salam et al.	§	Filed: July 28, 2008
	§	
	§	Group Art Unit: 2473
Serial No.: 12/180,934	§	
	§	Examiner: Kenan Cehic
Confirmation No.: 1002	§	

For: MULTI-CHASIS ETHERNET LINK AGGREGATION

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

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being 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, or facsimile transmitted to the U.S. Patent and Trademark Office to fax number 571-273-8300 to the attention of Examiner Kenan Cehic, or electronically transmitted via EFS-Web, on the date shown below:

September 30, 2011 /Joseph Jong/
Date Joseph Jong

Dear Sir:

STATEMENT OF SUBSTANCE OF INTERVIEW

On August 14, 2011, a telephonic interview was held between Gero McClellan (an attorney of record for Applicants) and Examiner Kenan Cehic.

Applicants discussed the office action dated June 10, 2011, and an agreement was reached for the Examiner to send out a new office action as reflected in the Examiner's Interview Summary dated August 31, 2011, which is hereby incorporated by reference.

Respectfully submitted,

/Gero G. MCCLELLAN, Reg. #44227/

Gero G. McClellan
Registration No. 44,227
PATTERSON & SHERIDAN, L.L.P.
1150 Revolution Mill Drive, Studio 5
Greensboro, NC 27405
Telephone: (336) 698-4286
Facsimile: (713) 623-4846
Attorney for Applicant(s)

Electronic Acknowledgement Receipt	
EFS ID:	11091896
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Gero G. McClellan/Joseph Jong
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL956171
Receipt Date:	30-SEP-2011
Filing Date:	28-JUL-2008
Time Stamp:	17:36:15
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	Applicant summary of interview with examiner	956171_SSI.pdf	52019 299[illegible]	no	1

Warnings:
Information:

Total Files Size (in bytes):	52019

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
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

62147 7590 08/31/2011
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	

ART UNIT	PAPER NUMBER
2473	

NOTIFICATION DATE	DELIVERY MODE
08/31/2011	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):

PAIR_cofficeaction@pattersonsheridan.com
houston_mail@pattersonsheridan.com

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	12/180,934	SALAM ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

All participants (applicant, applicant's representative, PTO personnel):

(1) *KENAN CEHIC*. (3)_____.

(2) *Gero McClellan*. (4)_____.

Date of Interview: *14 August 2011*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: _____.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

he office action mailed 06/10/2011 cited a Wills et al reference with an incorrected publication number. A new office action with the correct publication number will be mailed out with a restarted time period.for response .

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

	/KWANG B YAO/ Supervisory Patent Examiner, Art Unit 2473

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2. Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
12/180,934	28 July 2008	SALAM ET AL.	CPOL956171

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
KENAN CEHIC	
ART UNIT	**PAPER**
2473	20110825-A

DATE MAILED:

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

Commissioner for Patents

The office action mailed 06/10/2011 cited a Wills et al reference with an incorrected publication number. A new office action with the correct publication number will be mailed out with a restarted time period for response.

/KWANG B YAO/
Supervisory Patent Examiner, Art Unit 2473

PTO-90C (Rev.04-03)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

62147 7590 06/10/2011

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	

ART UNIT	PAPER NUMBER
2473	

NOTIFICATION DATE	DELIVERY MODE
06/10/2011	ELECTRONIC

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PAIR_cofficeaction@pattersonsheridan.com
houston_mail@pattersonsheridan.com

Office Action Summary	Application No.	Applicant(s)	
	12/180,934	SALAM ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

-- 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 *25 April 2011*.

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) *1,3-7,9-13,15-18 and 20* 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) *1,3-7,9-13,15-18 and 20* 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

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 5, 6, 11, 12, 17, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For Claims 5, 11, 17, 20 the claims recite "wherein the message sent to the dual-homed device". There is no antecedent basis for this limitation. Dependent claims are rejected based on their dependency.

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, 5-7, 11, 12, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Wills et al. (US 2009/0109998)

For claim 1, Liu discloses A method comprising:

forwarding traffic received by a network device (see figure 3; NS1 or NS2) on a first downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both) connected to to an uplink connection with a network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet);

detecting a failure on the uplink connection with the network core; and in response to detecting the failure, notifying a standby device of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure) , through an inter-chassis control channel between the network device and the standby device (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60) and triggering the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding), the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60),

For claim 7, Liu discloses An apparatus having a network device and an standby device (see figure 3; NS1 or NS2), the

apparatus comprising:

a downlink interface for establishing a downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both);

an uplink interface for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet); and

logic (see figure 2) for detecting a failure on the uplink connection with the network core and, in response, only notifying the standby device of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), through a inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60), to triggerining the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding), the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60).

For claim 18, Liu discloses An apparatus having a network device and an standby device (see figure 3; NS1 or NS2), the apparatus comprising:

means for establishing a downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both);

means for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet); and

means for detecting a failure on the uplink connection with the network core and, in response, ~ notifying a standby device of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), through a inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60) and triggering the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the dual- homed device and the standby device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding), the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60),

Liu does not explicitly disclose the following:

For claim 1, and similarly 7, 18, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

For claim 5, and 11, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP)

For claim 6, 12, changing at least one of a port priority value for a port used for the first downlink connection; and sending a message with the changed port key or port priority value to the dual- homed device.

For claim 20, the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

Wils from the same or similar field of endeavor discloses the following:

For claim 1, and similarly 7, 18, Wils discloses, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel (see section 0045; synchronization means in nodes send periodically messages indicating their state / health / functioning over ICI).

For claim 5, and 11, Wils discloses wherein sending the message to the dual-homed device (see fig. 2) comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061).

For claim 6, 12, Wils discloses changing at least one of a port priority value for a port used for the first downlink connection (see section 0036-37; section 0051, 0058); and sending a message with the changed port priority value to the dual- homed device (see section 0036-37, section 0051, 0058; see fig. 2).

For claim 20, Wils discloses the message sent to the dual-homed device (see fig. 2) comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061); and

the apparatus further comprises means for changing port priority value of a port used for the downlink connection (see section 0036-37, section 0051, 0058; see fig. 2) and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP (see section 0036-37, section 0051, 0058; see fig. 2).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Wils, in order to provide a plurality of network devices as representing a single point device of the point-to-point
protocol, such as the IEEE 802.3ad standard, which would make it possible to have one or both of the points of the IEEE 802.3ad standard be multiple devices. Further the devices can be configured to behave as a single point in such a way that the multiple devices still adhere to the 802.3ad standard. Thus the multi device point can be seamlessly connected to a conventional single device that supports the 802.3ad specification (see Wils sections 0006-10). It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Wils, in order to provide a method of checking the health of redundant devices and switching over to a back up device based on this health thereby providing continued service for the end user (see Wils section 0045). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Wils to network layer devices (SW3, SW4,

NS1, NS2) of Liu where Liu suggest use of similar heartbeat / health messages (see Liu col 6 lines 25-32; Hello messages)

3. Claims 13 and 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Imajuku et al (US 2006/0256712) and Wills et al. (US 2009/0109998)

For claim 13, Liu discloses An apparatus, comprising:

a first switch connected to a second switch (see figure 3; NS1 or NS2) through an inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60), the first

switch having a downlink interface for establishing a downlink connection with a dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both), an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet), and logic (see figure 2) ,

wherein the logic is configured to detect a failure on the uplink connection with the network core, only notify the second switch of the failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), through inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60),

, on the uplink connection (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), and trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding),

wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device (see figure 3; devices SW3 or SW4 downstream of SN1 and SN2 connected to both), an uplink interface for forwarding traffic from the dual- homed device to the network core (see figure 3; network upstream of SW3, SW4, NS1 and NS1 towards internet), and logic, wherein the logic is configured to receive notification (see figure 2), through the inter-chassis control channel (see col 2 lines 61-67; col 7 lines 55-63; col 7 lines 35-43; col 7 lines 55-60), of the uplink failure from the first switch and, in response to receiving notification of the uplink failure (see col 3 lines 1-5, col 4 line 50 through col 5 line 3, col 5 line 10-55; col 8 lines 10-45; when a failure is detected on a link (such as in an uplink) notifies the backup device (i.e. NS2) for such failure), forward to the core network,

wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection (see col 2 lines 61-67; col 7 lines 55-63; col 7

lines 35-43; col 7 lines 55-60),

wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from the first switch to the second switch over the inter-chassis control channel.

Liu does not explicitly disclose the following:

For claim 13, enable an uplink connection between the second switch and the network core if previously disabled; wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

For claim 17, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP)

Imajuku from the same or similar field of endeavor discloses the following:
For claim 13, Imajuku enable an uplink connection between the second switch and the network core if previously disabled (see section 0226 "failure notification information detected…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Imajuku, in order to provide a method that prevents the requirement to reduce disconnection of a normal path set in the data plane and unnecessary switching operations as bad influences due to failure of the control plane. It would have been obvious to person of ordinary skill in the art to use an underlying physical optical infrastructure (Imajuku) to implement the router / switches of Liu in order to provide increased bandwidth which optical networks are capable of.

Wils from the same or similar field of endeavor discloses the following:

For claim 13, Wils discloses, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel (see section 0045; synchronization means in nodes send periodically messages indicating their state / health / functioning over ICI).

For claim 17, Wils discloses wherein sending the message to the dual-homed device (see fig. 2) comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit... synchronization bit in the LACPDU to keep it low...out-of sync state"; section 0055, 0061).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu and Imajuku by using the above recited features, as taught by Wils, in order to provide a plurality of network devices as representing a single point device of the point-to-point protocol, such as the IEEE 802.3ad standard, which would make it possible to have one or both of the points of the IEEE 802.3ad standard be multiple devices. Further the devices can be configured to behave as a single point in such a way that the multiple devices still adhere to the 802.3ad standard. Thus the multi device point can be seamlessly connected to a conventional single device that supports the 802.3ad specification (see Wils sections 0006-10). It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu by using the above recited features, as taught by Wils, in order to provide a method of checking the health of redundant devices and switching over to a back up device based on this health thereby providing continued service for the end user (see Wils section 0045). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Wils to network layer devices (SW3, SW4, NS1, NS2) of Liu where Liu suggest use of similar heartbeat / health messages (see Liu col 6 lines 25-32; Hello messages)

4. Claims 3 and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Wills et al. (US 2009/0109998) as applied to claims 1, 7, 13 above, and further in view of WU et al. (US 2009/0096592)

For claim 3 and similarly 9, Liu discloses while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding).

Liu and Wills do not explicitly discuss the following:

For claim 3 and similarly 9,maintaining the first connection in an active state.

WU from the same or similar field of endeavor discloses the following:

For claim 3 and similarly 9, WU discloses maintaining the first connection in an active state (see section 0006-7).

It would have been obvious to a person of ordinary skill in the art to combine the teaching of keeping the physical layer active, even though no data is being sent, by WU to the teachings of Liu and Wills since all the claimed elements were known in the prior art and one skilled in the art could have combined the method of keeping the physical layer active (power is supplied), where there would be no change to their respective functions. The combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Further, this would allow for the

communication system to be always ready to send / receive data, since the communication system is power on and thus would know if there is data being received or needs to be transmitted.

5. Claims 4 and 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Wills et al. (US 2009/0109998) as applied to claims 1, 7, 13 above, and further in view of Vinayagam et al. (US 2009/0109998)

For claim 4, and similarly 10, Liu and Wills disclose all the claimed features as shown above.

Liu and Wills do not explicitly discuss the following:

For claim 4, and similarly 10, setting a maximum number of links in a link aggregate group (LAG) to one.

Vinayagam from the same or similar field of endeavor discloses the following:

For claim 4, and similarly 10, setting a maximum number of links in a link aggregate group (LAG) to one (see section 0024 "link aggregation…specify a known limit to maximum number of ports"; claim 10; It would have been obvious to set a maximum number of ports (i.e. links) for a link aggregation to a arbitrary number such as 1 (i.e. design choice)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu and Wills by using the above recited features, as taught by Vinayagam, in order to provide a self-configuring manner using

IEEE 802.3ad Link Aggregation Control Protocol such that drawbacks and inefficiencies associated with the conventional manual configuration required when using IEEE 802.3ad Link Aggregation Control Protocol would be advantageous, desirable and useful (see Vinayagam section 0004-0007). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Vinayagam to the aggregated links of Wills.

6. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Imajuku et al (US 2006/0256712) , Wills et al. (US 2009/0109998) as applied to claims 13 above, and further in view of WU et al. (US 2009/0096592)

For claim 3 and similarly 9, 15, Liu discloses while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device (see col 3 lines 1-5, col 4 line 50 through col 5 line 3; col 8 lines 10-45; figure 9; surrounding devices (SW3 and SW4) are notified of switch to a new primary device where they make the corresponding updates and the new primary device takes over all forwarding).

Liu, Imajuku and Wills do not explicitly discuss the following:

For claim 3 and similarly 9, 15,maintaining the first connection in an active state.

WU from the same or similar field of endeavor discloses the following:

For claim 3 and similarly 9, 15, WU discloses maintaining the first connection in an active state (see section 0006-7).

It would have been obvious to a person of ordinary skill in the art to combine the teaching of keeping the physical layer active, even though no data is being sent, by WU to the teachings of Liu, Imajuku and Wills since all the claimed elements were known in the prior art and one skilled in the art could have combined the method of keeping the physical layer active (power is supplied), where there would be no change to their respective functions. The combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Further, this would allow for the communication system to be always ready to send / receive data, since the communication system is power on and thus would know if there is data being received or needs to be transmitted.

7. Claims 16 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 7,197,660) in view of Imajuku et al (US 2006/0256712) , Wills et al. (US 2009/0109998) as applied to claims 13 above, and further in view of Vinayagam et al. (US 2009/0109998)

For claim 4, 10, and 16, Liu, Imajuku and Wills disclose all the claimed features as shown above.

Liu, Imajuku and Wills do not explicitly discuss the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one.

Vinayagam from the same or similar field of endeavor discloses the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one (see section 0024 "link aggregation…specify a known limit to maximum

number of ports"; claim 10; It would have been obvious to set a maximum number of ports (i.e. links) for a link aggregation to a arbitrary number such as 1 (i.e. design choice)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Liu, Imajuku and Wills by using the above recited features, as taught by Vinayagam, in order to provide a self-configuring manner using IEEE 802.3ad Link Aggregation Control Protocol such that drawbacks and inefficiencies associated with the conventional manual configuration required when using IEEE 802.3ad Link Aggregation Control Protocol would be advantageous, desirable and useful (see Vinayagam section 0004-0007). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Vinayagam to the aggregated links of Wills.

Conclusion

8. 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

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.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENAN CEHIC whose telephone number is (571)270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG BIN YAO can be reached on (571) 272-3182. 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.

/Kenan Cehic/
Examiner, Art Unit 2473

/KWANG B YAO/
Supervisory Patent Examiner, Art Unit 2473

Notice of References Cited	Application/Control No. 12/180,934	Applicant(s)/Patent Under Reexamination SALAM ET AL.	
	Examiner KENAN CEHIC	Art Unit 2473	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,197,660	03-2007	Liu et al.	714/4.12
	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
	12180934	SALAM ET AL.
	Examiner	**Art Unit**
	KENAN CEHIC	2473

✓	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	03/17/2010	08/28/2010	12/17/2010	06/04/2011					
	1	✓	✓	✓	✓					
	2	✓	-	-	-					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	-	✓	-					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	-	-	✓					
	15	✓	✓	✓	✓					
	16	✓	✓	✓	✓					
	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	-	-	-					
	20	✓	✓	✓	✓					

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

SEARCHED			
Class	Subclass	Date	Examiner
370	216-228	3/9/2010	kc

SEARCH NOTES		
Search Notes	Date	Examiner
Inventorship Search	3/9/2010	kc
East text search	3/9/2010	kc
Update Search	8/26/2010	kc
Update search	6/4/2011	kc

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S138	1	S137 and sync$9	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/03/18 14:33
S137	1	(US-20100020680-$).did.	US-PGPUB	ADJ	ON	2011/03/18 14:33
S139	0	out of sync same lacp and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:17
S141	0	out of sync and lacp and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:18
S140	0	out of sync and lacp and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:18
S143	7	link aggregate control protocol and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:19
S142	0	out of sync and link aggregate control protocol and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:19
S146	1	S144 and ("802.3ad device" or end device$2 or "1C")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:37
S145	1	S144 and ("802.3ad device" or end device$2)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:37

S144	1	(US-20040133693-$).did.	US-PGPUB	ADJ	ON	2011/06/01 16:37
S147	12	(synchroniz$8 or sync) with (lacp or link aggregat$5 control protocol) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/01 16:50
S148	178	(link) near2 fail$5 with (link aggregat$6 or "802.3ad" or LAG) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:37
S149	1	("6,058,116").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/06/04 14:41
S150	127	uplink near2 fail$5 with (notify $5 or inform$5 or signal$4 or message$4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:55
S152	8	uplink near2 fail$5 with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:56
S151	2	uplink near2 fail$5 with (notify $5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 14:56
S153	7	uplink near2 fail$5 same (notify $5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:01

S154	8	uplink near2 fail$5 same (notify $5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:02
S155	11	uplink near2 (fail$5 or fault$4 or unavailabl$4) same (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:03
S158	80	uplink near2 (fail$5 or fault$4 or unavailabl$4) and (notify$5 or inform$5 or signal$4 or message$4) near5 (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:13
S157	99	uplink near2 (fail$5 or fault$4 or unavailabl$4) and (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:13
S156	57	uplink near2 fail$5 and (notify $5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover or secondary) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 15:13

S159	3	("2004/0133693").URPN.	USPAT	ADJ	ON	2011/06/04 16:06
S161	8	("6804721").URPN.	USPAT	ADJ	ON	2011/06/04 16:13
S160	10	"US 6804721"	US-PGPUB; USPAT; USOCR; DERWENT	ADJ	ON	2011/06/04 16:13
S162	6689	(fail$5 or fault$4 or unavailabl $4) with (notify$5 or inform$5 or signal$4 or message$4) near3 (standby or backup or switchover or switchover or secondary or redundant) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 16:18
S163	36	(fail$5 or fault$4 or unavailabl $4) with (notify$5 or inform$5 or signal$4 or message$4) near3 (standby or backup or switchover or switchover or secondary or redundant) with (control) near2 (channel$2 or link) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 16:20
S164	7	("20020184387" | "20050243713" | "20060092950" | "20060133264" | "20070008880" | "7197660" | "7209435").PN. OR ("7848226").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/06/04 17:08
S166	4	(notify$5 or inform$5 or signal $4 or message$4) near3 (standby or backup or switchover or switchover or secondary or redundant) and S165	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:04
S165	7	("20020184387" | "20050243713" | "20060092950" | "20060133264" | "20070008880" | "7197660" | "7209435").PN. OR ("7848226").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/06/04 18:04
S167	1	(US-7197660-$).did.	USPAT	ADJ	ON	2011/06/04 18:08

S168	1	S167 and (control or status)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:09
S169	1	S167 and (control or status or fail or unavailable or standby or backup or switchover or switchover or secondary or redundant)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:15
S170	1	S167 and (control or status or fail$4 or unavailable or standby or backup or switchover or switchover or secondary or redundant)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:16
S172	0	S171 and (synchr$6 or hello or period$5)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:45
S171	1	(US-20040133693-$).did.	US-PGPUB	ADJ	ON	2011/06/04 18:45
S174	1	S171 and (synchroni$7 or hello or period$5)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:46
S173	1	S171 and (state or hello or period$5)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2011/06/04 18:46

6/4/2011 9:36:59 PM
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12180934
Filing Date	2008-07-28
First Named Inventor	Samer M. Salam
Art Unit	2473
Examiner Name	Kenan Cehic
Attorney Docket Number	CPOL956171

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	6032194		2000-02-29	Gai et al.	
	2	6330229	B1	2001-12-11	Jain et al.	
	3	6513129	B1	2003-01-28	Tentij et al.	
	4	6535491	B2	2003-03-18	Gai et al.	
	5	6542934	B1	2003-04-01	Bader et al.	
	6	6628661	B1	2003-09-30	Goldman et al.	
	7	6678241	B1	2004-01-13	Gai et al.	
	8	6697339	B1	2004-02-24	Jain	

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	Examiner Name	Kenan Cehic
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	9	6721275	B1	2004-04-13	Rodeheffer et al.	
	10	6801506	B1	2004-10-05	Dey	
	11	6891808	B2	2005-05-10	Ishii	
	12	6956824	B2	2005-10-18	Mark et al.	
	13	6987740	B1	2006-01-17	Di Benedetto et al.	
	14	7016351	B1	2006-03-21	Farinacci et al.	
	15	7453900	B2	2008-11-18	Robinson et al.	

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	1	20020112072	A1	2002-08-15	Jain	
	2	20020152320	A1	2002-10-17	Lau	

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	3	20030179700	A1	2003-09-25	Saleh et al.	
	4	20040105390	A1	2004-06-03	Saksio	
	5	20060227704	A1	2006-10-12	Nakagawa et al.	
	6	20070047578	A1	2007-03-01	Abe et al.	
	7	20070237085	A1	2007-10-11	Tirumalai et al.	
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	1	Office Action History for U.S. Patent Application Serial No.11/398,519 (CPOL778793) from October 29, 2008 to February 23, 2011	☐
	2	user. (2001). In Hargrave's Communications Dictionary, Wiley. Retrieved on August 2, 2010 from the Internet: <http://www.credoreference.com/entry/hargravecomms/user>.	☐
	3	user. (2006). In ATIS Telecom Glossary, Alliance for Telecommunications Industry Solutions, Retrieved on August 2, 2010 from the Internet: <http://www.is-works.com/glossary/definition.aspx?id=336>.	☐
	4	designate. (2007). In the American Heritage® Dictionary of the English Language. Retrieved on August 2, 2010 from the Internet: <http://www.credoreference.com/entry/hmdictenglang/designate>.	☐

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	4	6535491	B2	2003-03-18	Gai et al.	
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	Art Unit	2473
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	10	6801506	B1	2004-10-05	Dey	
	11	6891808	B2	2005-05-10	Ishii	
	12	6956824	B2	2005-10-18	Mark et al.	
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	6	20070047578	A1	2007-03-01	Abe et al.	
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	Filing Date	2008-07-28
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	2	user. (2001). In Hargrave's Communications Dictionary, Wiley, Retrieved on August 2, 2010 from the Internet: <http://www.credoreference.com/entry/hargravecomms/user>.	☐
	3	user. (2006). In ATIS Telecom Glossary, Alliance for Telecommunications Industry Solutions, Retrieved on August 2, 2010 from the Internet: <http://www.is-works.com/glossary/definition.aspx?id=336>.	☐
	4	designate. (2007). In the American Heritage® Dictionary of the English Language, Retrieved on August 2, 2010 from the Internet: <http://www.credoreference.com/entry/hmdictenglang/designate>.	☐

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	First Named Inventor	Samer M. Salam
	Art Unit	2473
	Examiner Name	Kenan Cehic
	Attorney Docket Number	CPOL956171

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the 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 the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Gero G. MCCLELLAN/ Reg. #44227	Date (YYYY-MM-DD)	2011-04-25
Name/Print	Gero G. McClellan	Registration Number	44,227

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Application Number:	12180934
Filing Date:	28-Jul-2008
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Filer:	Gero G. McClellan/Esther Marques
Attorney Docket Number:	CPOL956171
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:	9944839
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Gero G. McClellan/Esther Marques
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL956171
Receipt Date:	25-APR-2011
Filing Date:	28-JUL-2008
Time Stamp:	11:39:44
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	6840
Deposit Account	200782
Authorized User	MCCLELLAN,GERO G.

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	Information Disclosure Statement (IDS) Filed (SB/08)	CPOL956171_IDS.PDF	613029	no	6
Warnings:					
Information:					
2	NPL Documents	NPL_OAH_11398519_CPOL778793.pdf	3987464	no	114
Warnings:					
Information:					
3	NPL Documents	NPL_HargraveDefinition.pdf	17049	no	1
Warnings:					
Information:					
4	NPL Documents	NPL_ATISTelecomDefinition.pdf	27414	no	1
Warnings:					
Information:					
5	NPL Documents	NPL_AmericanHeritageDefinition.pdf	23018	no	1
Warnings:					
Information:					
6	Fee Worksheet (PTO-875)	fee-info.pdf	30453	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	4698427		

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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.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Dated: March 23, 2011 Signature: /Joseph Jong/
Joseph Jong

Docket No.: 1654.034129 (CPOL956171)
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Samer M. Salam et al.

Serial No.: 12/180,934

Filed: July 28, 2008

For: MULTI-CHASIS ETHERNET LINK AGGREGATION

§ Confirmation No.: 1002

§ Group Art Unit: 2473

§ Examiner: Kenan Cehic

AMENDMENT

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

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated December 23, 2010, please amend the above-identified U.S. patent application as follows.

The Commissioner is hereby authorized to charge underpayments or credit overpayments to counsel's Deposit Account No. 20-0782/CPOL956171 (1654.034129)/GGM.

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

IN THE CLAIMS:

The following listing of claims replaces all prior versions and listings of claims in this application:

1. (Currently Amended) A method comprising:

forwarding traffic received by a network device on a first downlink connection with a dual-homed device to an uplink connection with a network core;

detecting a failure on the uplink connection with the network core; and

in response to detecting the failure, only notifying a standby device of the failure, through an inter-chassis control channel between the network device and the standby device~~, of the failure~~ and ~~sending a message to the dual-homed device to~~ triggering the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device, the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

2. (Canceled)

3. (Previously Presented) The method of claim 1, further comprising, maintaining the first downlink connection in an active state, while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device.

4. (Original) The method of claim 1, further comprising setting a maximum number of links in a link aggregate group (LAG) to one.

5. (Original) The method of claim 1, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

6. (Original) The method of claim 5, further comprising:

Quicker Connections - Exhibit 2013
IPR2025-01088 - Page 142

changing at least one of a port key and a port priority value for a port used for the first downlink connection; and

sending a message with the changed port key or port priority value to the dual-homed device.

7. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

a downlink interface for establishing a downlink connection with a dual-homed device;

an uplink interface for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

logic for detecting a failure on the uplink connection with the network core and, in response, only notifying the standby device of the failure, through a inter-chassis control channel~~, of the failure~~ and ~~sending a message to the dual-homed device to~~ triggering the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device, the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

8. (Canceled)

9. (Previously Presented) The apparatus of claim 7, wherein the downlink connection remains in an active state, with traffic forwarding prevented, after sending the message to the dual-homed device.

10. (Original) The apparatus of claim 7, configured such that a maximum number of links in a link aggregate group (LAG) is one.

11. (Original) The apparatus of claim 10, wherein the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

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12. (Original) The apparatus of claim 11, further comprising logic for changing a port key or port priority value of a port used for the first downlink connection and sending the changed port key or port priority value to the dual-homed device, in an effort to trigger the dual homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

13. (Currently Amended) An apparatus, comprising:

a first switch connected to a second switch through an inter-chassis control channel, the first switch having a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core, and logic, wherein the logic is configured to detect a failure on the uplink connection with the network core, only notify the second switch of the failure, through inter-chassis control channel, ~~of the failure~~ on the uplink connection, and ~~send a message to the dual-homed device to~~ trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device,

wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to the network core, and logic, wherein the logic is configured to receive notification, through the inter-chassis control channel, of the uplink failure from the first switch and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network core if previously disabled,

wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection,

wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from the first switch to the second switch over the inter-chassis control channel.

14. (Canceled)

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15. (Previously Presented) The apparatus of claim 13, wherein the downlink connection of the first switch remains in an active state, with traffic forwarding prevented, after the sending of the message to the dual-homed device.

16. (Original) The apparatus of claim 13, wherein the first and second switches are configured such that a maximum number of links in a link aggregate group (LAG) is one.

17. (Original) The apparatus of claim 16, wherein the message sent to the dual-homed device by the first switch comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

18. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

means for establishing a downlink connection with a dual-homed device;

means for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

means for detecting a failure on the uplink connection with the network core and, in response, only notifying a standby device of the failure, through a inter-chassis control channel~~, of the failure~~ and ~~sending a message to the dual-homed device to~~ triggering the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the dual-homed device and the standby device, the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

19. (Canceled)

20. (Original) The apparatus of claim 18, wherein:

the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

Quicker Connections - Exhibit 2013
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REMARKS

This is intended as a full and complete response to the Final Office Action dated December 23, 2010, having a shortened statutory period for response set to expire on March 23, 2011. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 3-7, 9-13, 15-18 and 20 were pending in the application. No new claim has been added. Claims 1, 7, 13 and 18 have been amended. No new matter has been added by the way of these amendments.

Statement of Substance of Interview

On March 18, 2011, a telephonic interview was held between Rajeev Madnawat (attorney) and Examiner Kenan Cehic. The parties discussed the cited references including *Imajuku, Regan, Shobtay* and *Dalal*. Claim 1 was discussed.

During the interview, Applicants' representative argued that *Imajuku* and *Regan* send failure notifications to multiple nodes. Applicants' representative also pointed out that *Dalal* does not teach state synchronization through heartbeat messages. The Examiner noted that *Imajuku* and *Regan* teaches sending failure notifications to multiples nodes and indicated that *Imajuku* and *Regan* references may not apply to the amended claims. With respect to the state synchronization through heartbeat messages, the Examiner indicated that the meaning of the term "State Synchronization" was not clearly described in the claims.

Claim Rejections - 35 U.S.C. § 103

Independent claims claims 1, 7, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Regan et al.* (US 2008/0181196) (hereinafter *Regan*) in view of *Imajuku et al.* (US 2006/0256712) (hereinafter *Imajuku*) and *Dalal et al.* (US2006/0159011)(hereinafter *Dalal*) and *Shabtay et al.* (US 2004/0047336)(hereinafter *Shabtay*). Applicants respectfully traverse this rejection.

Claims 3, 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Regan*, *Imajuku*, *Dalal*, and *Shabtay* as applied to claims 1, 7, 13 and 18 above, and further in view of WU et al. (US 2009/0096592)(hereinafter *Wu*).

Claims 4, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Regan*, *Imajuku*, *Dalal*, and *Shabtay* as applied to claims 1, 7, 13 and 18 above, and further in view of Vinayagam et al. (US 200910109998)(hereinafter *Vinayagam*).

Quicker Connections - Exhibit 2013
IPR2025-01088 - Page 147

Claims 5, 6, 11, 12, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Regan*, *Imajuku*, *Dalal*, and *Shabtay* as applied to claims 1, 7, 13 and 18 above, and further in view of Wills et al. (US 2009/0109998)(hereinafter *Wills*).

Applicants respectfully traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;

(B) ascertaining the differences between the claimed invention and the prior art;

(C) resolving the level of ordinary skill in the art; and

(D) considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

Claims 1, 7, 13 and 18 include a claim feature "in response to detecting the failure, only notifying a standby device of the failure, through an inter-chassis control channel between the network device and the standby device."

Regan discloses notifying the standby device (e.g., element 310, Figure 3) and CPE (Figure 3) when a failure occurs at Device 308.

Imajuku discloses a plurality of node connected together in a network in such a way that the network traffic from one particular node to another in the network can flow through more than one network paths going through different nodes. When a node or a link in a path fails, all nodes in the network are notified and the network traffic is routed on an alternative path, to avoid failed node or link.

Therefore, Applicants respectfully submits that neither *Regan* nor *Imajuku* teach the claim feature "in response to detecting the failure, only notifying a standby device of the failure, through an inter-chassis control channel between the network device and the standby device."

The Office notes that *Dalal* teaches sending heartbeat messages. *Dalal* uses the heartbeat to detect device failures. The Office notes that notifying the standby device of the failure of the active

device corresponds to synchronizing device states because the "availability" of an active device is a state. Applicants respectfully disagree because "availability" only means that the other device is up and running. Applicants respectfully submit that *Dalal* does not provide any teaching with respect to the state synchronization. As the name suggests and as it is well known, synchronization[1] means keeping two devices in the same state. For example, if certain variables are set in one device then via the state synchronization process, the same variables are set with the same values in the other device so that when the other device is toggled from standby to active, it can resume the work as an active device. Without both devices being kept in the same state, the standby device will not be able to continue operations of the failed device.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

The rejection to all dependent claims incorporates the rejection to independent claims 1, 7, 13 and 18, respectively, over *Imajuku* in view of *Regal* and in further view of *Dalal*. As stated above, the rejection to independent claims 1 7, 13 and 18 is believed to be overcome. Accordingly, the rejection to all dependent claims is also believed to be overcome. Therefore, the withdrawal of the rejection to these claims is respectfully requested.

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[1] Synchronization Definition from Computer & Internet Dictionaries & Glossaries

Vb Glossary 1.0
Automatic synchronization- a process of updating two replicas in which all updated records and objects are exchanged. The exchange of data between two replicas can be one-way or two-way and may be handled by a Synchronizer.

Synchronization that is accomplished automatically by SQL Server. A snapshot is taken of the table schema and data, and that snapshot is written to files for transfer. The job to copy the table schema and data is transferred like any other replication job, via the distribution database. No operator intervention is required.

DW and OLAP terms
In replication, the process of maintaining the same schema and data at a Publisher and at a Subscriber.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Dated: March 23, 2011

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4,

By: /Gero G. MCCLELLAN, Reg. #44227/
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Attorney For Applicant

Electronic Acknowledgement Receipt	
EFS ID:	9725986
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Gero G. McClellan/Joseph Jong
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL956171
Receipt Date:	23-MAR-2011
Filing Date:	28-JUL-2008
Time Stamp:	18:20:34
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		956171_ROA2.pdf	145808 [illegible]	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	10
Warnings:			
Information:			
	Total Files Size (in bytes):	145808	

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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
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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
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/180,934	Filing Date 07/28/2008	☐ 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), (l), 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 03/23/2011	(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))	* 16	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

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	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:
/YUVANNA CHAPHIV/

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.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

62147 7590 12/23/2010

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	

ART UNIT	PAPER NUMBER
2473	

NOTIFICATION DATE	DELIVERY MODE
12/23/2010	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):

PAIR_cofficeaction@pattersonsheridan.com
houston_mail@pattersonsheridan.com

Office Action Summary	Application No.	Applicant(s)	
	12/180,934	SALAM ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

-- 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 *01 December 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) *1,3-7,9-13,15-18 and 20* 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) *1,3-7,9-13,15-18 and 20* 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

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, 7, 13, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Regan et al. (US 2008/0181196) in view of Imajuku (US 2006/0256712) , Dalal et al. (US 2006/0159011) and Shabtay et al (US 2004/0047336)

For claim 1, Regan discloses an inter-chassis control channel (see section 0021 "inter-chassis control path"; fig. 3; 330), wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection (see figure 3; connection 330 is independent from connections to the CPE and to uplink to MAC C), notifying a standby device through an inter-chassis control channel between the network

device and the standby device (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP control path 330"; chassis notifications sent via control channel);

For claim 7, Regan discloses notifying a standby device through an inter-chassis control channel (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP control path 330"; chassis notifications sent via control channel), wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection (see figure 3, see section 0021 "inter-chassis control path"; connection 330 is independent from connections to the CPE and to uplink to MAC C)

For claim 13, Regan discloses a first switch connected to a second switch through an inter-chassis control channel (see figure 3, see section 0021 "inter-chassis control path"; switch 308 and standby switch 310 are connected through 330); notification through an inter-chassis control channel (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP control path 330"; chassis notifications sent via control channel), wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection (see figure 3, see section 0021 "inter-chassis control path"; connection 330 is independent from connections to the CPE and to uplink to MAC C).

For claim 18, Regan discloses notification through an inter-chassis control channel (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP control path 330"; chassis notifications sent via control channel), wherein the inter-chassis control

channel is independent of the uplink connection and the downlink connection (see figure 3, see section 0021 "inter-chassis control path"; connection 330 is independent from connections to the CPE and to uplink to MAC C)

Reagan does not explicitly discuss the following:

For claim 1, A method comprising

forwarding traffic received by a network device on a first downlink connection

with a dual-homed device

to an uplink connection with a network ;

detecting a failure on the uplink connection with the network

; and in response to detecting the failure, notifying a standby device, through a control channel between the network device and the standby device , of the failure

and sending a message to the dual-homed device to trigger the dual-homed device

to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device

are sent from node receiving the failure notification along the backup path)

For claim 7, a downlink interface for establishing a downlink connection with a dual-homed device

;

an uplink interface for establishing an uplink connection with a network

to forward traffic from the dual-homed device to the network

; and

logic for detecting a failure on the uplink connection with the network

and, in response, notifying a standby device, through a control channel , of the failure

, and sending a message to the dual-homed device to trigger the dual-homed device

to begin forwarding traffic to the network via a second downlink connection between the standby device and the dual-homed device

are sent from node receiving the failure notification along the backup path)

For claim 13, a first switch

connected to a second switch through a control channel , the first switch having a downlink interface for establishing a downlink connection

with a dual-homed device

, an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network

, and logic, wherein the logic is configured to detect a failure on the uplink connection with the network

, notify a second switch of the failure on the uplink connection

, and send a message to the dual-homed device to trigger the dual-homed device

to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device ; and

wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device , an uplink interface for forwarding traffic from the dual-homed device to the network

, and logic, wherein the logic is configured to receive notification, through a control channel

of the uplink failure from the first switch

and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network if previously disabled

.

For claim 18, means for establishing a downlink connection with a dual-homed device ; means for establishing an uplink connection with a network to forward traffic from the dual-homed device to the network

; and

means for detecting a failure on the uplink connection with the network

and, in response, notifying a standby device, through a control channel , of the failure

and sending a message to the dual-homed device

to trigger the dual-homed device to begin forwarding traffic to the network via a second downlink connection between the dual-homed device and the standby device switch

Imajaku from the same or similar field of endeavor discloses the following:

For claim 1, Imajuku discloses A method comprising

forwarding traffic received by a network device on a first downlink connection (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path) with a dual-homed device (see fig. 43a; left-most node connected to two nodes; see figures 14 ,24, 38-41 for switching apparatus) to an uplink connection with a network (see fig. 43a; top most nodes uplinks with right most node);

detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected; section 0305-0307); and in response to detecting the failure, notifying a standby device, through a control channel between the network device and the standby device (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) , of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 14 ,24, 38-41 for switching apparatus) and sending a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 14 ,24, 38-41 for switching apparatus) to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus ; also see section 0226 "failure notification information detected…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup

path) are sent from node receiving the failure notification along the backup path)

For claim 7, Imajuku discloses a downlink interface for establishing a downlink connection with a dual-homed device (see fig. 43a; top most node has a downlink connection to left most node on ; see figures 12, 24, 38-41 for switching apparatus);
an uplink interface for establishing an uplink connection with a network (see fig. 43a; top most nodes uplinks with right most node i.e. active path) to forward traffic from the dual-homed device to the network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path); and
logic for detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)) and, in response, notifying a standby device, through a control channel (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) , of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus), and sending a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) to begin forwarding traffic to the network via a second downlink connection between the standby device and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start

forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus; also see section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

For claim 13, Imajuku discloses a first switch (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus) connected to a second switch through a control channel (see figure 43a; left bottom most node which is the second node in the backup path is connected to the top most node via path; see figures 12, 24, 38-41 for switching apparatus), the first switch having a downlink interface for establishing a downlink connection (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus) with a dual-homed device (see fig. 43a; left-most node connected to two nodes; see figures 14 ,24, 38-41 for switching apparatus), an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path; see figures 12, 24, 38-41 for switching apparatus), and logic, wherein the logic is configured to detect a failure on the uplink connection with the network(see fig. 43a; Failure is detected in uplink with right most node; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)), notify a second switch of the failure on the uplink connection

(see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus), and send a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus; also see section 0226 "failure notification information detected…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path); and wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device (see fig. 43a; bottom most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus), an uplink interface for forwarding traffic from the dual-homed device to the network (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node and further into the network (right most node); see figures 14 ,24, 38-41 for switching apparatus), and logic, wherein the logic is configured to receive notification, through a control channel (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) of the uplink failure from the first switch (see fig. 43a; 0305-0307; failure notification is received from the top most node; see figures 14 ,24, 38-41 for

switching apparatus) and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network if previously disabled (see section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path).

For claim 18, Imajuku discloses means for establishing a downlink connection with a dual-homed device (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus);
means for establishing an uplink connection with a network to forward traffic from the dual-homed device to the network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path; see figures 12, 24, 38-41 for switching apparatus); and
means for detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected in uplink with right most node; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)) and, in response, notifying a standby device, through a control channel (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) , of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) and sending a message to the dual-homed device (see fig. 43a;

section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path) to trigger the dual-homed device to begin forwarding traffic to the network via a second downlink connection between the dual-homed device and the standby device switch (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Regan by using the above recited features, as taught by Imajaku, in order to in a large capacity communication network autonomously controlled in a distributed way, a backup path bandwidth keeping method and a path switching apparatus that can dynamically keep a number of channels necessary for a channel group that accommodates backup paths so as to realize reliable failure recovery for a single link failure, and that can also flexibly support multiple link failure.(see Imajaku sections 00021-23). It would have been obvious to a person of ordinary skill in the art to implement messaging when a failure in the network has happened where backup / source nodes are notified of such failure as taught by Imajaku into the protection network as taught by Regan.

Dalal from the same or similar field of endeavor discloses the following:

For claim 1, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110), wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from the network device to the standby device over the control channel (see figure 1; 128).

For claim 7, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110), wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from the network device to the standby device over the control channel (see figure 1; 128).

For claim 13, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110); wherein a state synchronization is performed between the first node and the second node through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from first node to

the second node over the control channel (see figure 1; 128).

For claim 18, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110), wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from the network device to the standby device over the control channel (see figure 1; 128).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku and Regan by using the above recited features, as taught by Dalal, in order to provide a method of determining if a primary device is unavailable, via heartbeat messages, so that standby device can take over responsibilities and services interruptions to the user are minimized or eliminated (see Dalal section 0052). It would have been obvious to implement availability determination function via heartbeat messages between a primary device and a standby device (Dalal) and implement it to the combination of the primary switch / node and standby switch / node of Imajuku and Regan. Dalal implies sending the heartbeat messages over an out of band channel (figure 1; 128), therefore it would have been obvious to implement such messages via the inter-chassis channel (Regan).

Regan, Imajaku and Dalal do not specifically discuss the following:

For claim 1 and similarly 7, 13,18, physically independent.

Shabtay from the same or similar field of endeavor discloses the following:
For claim 1 and similarly 7, 13,18, Shabtay discloses physically independent (see section 0015, 0031-32, 0046 control wire,).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Regain, Imajuku, and Dalal by using the above recited features, as taught by Shabtay, in order to provide a method provide a fast method for managing connectivity without formation of loops where redundant links exist. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have / implement a physical control wire (ie physically independent) which relays control signals (e.g. about failed links etc) (Shabtay) for the control path 330 as disclosed by Regan, which similarly relays control signals (failure etc). The result would have been obvious and predictable to a person of ordinary skill in the art.

2. Claims 3, 9, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Regan et al. (US 2008/0181196) , Imajuku (US 2006/0256712) , Dalal et al. (US 2006/0159011) , and Shabtay et al (US 2004/0047336) as applied to claims 1, 7, 13 and 18 above, and further in view of WU et al. (US 2009/0096592)

For claim 3 and similarly 9, 15, Imajuku discloses while preventing traffic forwarding on the first downlink connection (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus), after sending the message to the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path).
For claim 15, the downlink connection of the first switch (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus)

Imajuku, Regan ,Dalal, and Shabtay do not explicitly discuss the following:
For claim 3 and similarly 9, 15,maintaining the first connection in an active state.

WU from the same or similar field of endeavor discloses the following:
For claim 3 and similarly 9, 15, WU discloses maintaining the first connection in an active state (see section 0006-7).
It would have been obvious to a person of ordinary skill in the art to combine the teaching of keeping the physical layer active, even though no data is being sent, by WU to the teachings of Imajuku, Regan ,Dalal, and Shabtay since all the claimed elements

were known in the prior art and one skilled in the art could have combined the method of keeping the physical layer active (power is supplied), where there would be no change to their respective functions. The combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Further, this would allow for the communication system to be always ready to send / receive data, since the communication system is power on and thus would know if there is data being received or needs to be transmitted.

3. Claims 4, 10, 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Regan et al. (US 2008/0181196) , Imajuku (US 2006/0256712) , Dalal et al. (US 2006/0159011), Shabtay et al (US 2004/0047336) as applied to claims 1, 7, 13 and 18 above, and further in view of Vinayagam et al. (US 2009/0109998)

For claim 4, 10, and 16, Imajuku, Regan ,Dalal, and Shabtay disclose all the claimed features as shown above.

Imajuku, Regan ,Dalal, and Shabtay do not explicitly discuss the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one.

Vinayagam from the same or similar field of endeavor discloses the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one (see section 0024 "link aggregation…specify a known limit to maximum number of ports"; claim 10; It would have been obvious to set a maximum number of ports (i.e. links) for a link aggregation to a arbitrary number such as 1 (i.e. design

choice)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku, Regan ,Dalal, and Shabtay by using the above recited features, as taught by Vinayagam, in order to provide a self-configuring manner using IEEE 802.3ad Link Aggregation Control Protocol such that drawbacks and inefficiencies associated with the conventional manual configuration required when using IEEE 802.3ad Link Aggregation Control Protocol would be advantageous, desirable and useful (see Vinayagam section 0004-0007). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Vinayagam to the aggregated links of Regan which has been combined with Imajuku and Dalal.

4. Claims 5, 6,11,12, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Regan et al. (US 2008/0181196) ,Imajuku (US 2006/0256712) , Dalal et al. (US 2006/0159011), and Shabtay et al (US 2004/0047336) as applied to claims 1, 7, 13 and 18 above, and further in view of Wills et al. (US 2009/0109998)

For claims 5, 6,11,12, 17, and 20 Imajuku, Regan ,Dalal, and Shabtay discloses the claimed invention as described above.

Imajuku, Regan ,Dalal, and Shabtay do not explicitly discuss the following:

For claim 5, 11, and 17, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP)

For claim 6, 12, changing at least one of a port priority value for a port used for the first downlink connection; and sending a message with the changed port key or port priority value to the dual- homed device.

For claim 20, the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

Wils from the same or similar field of endeavor discloses the following:

For claim 5, 11, and 17, Wils discloses wherein sending the message to the dual-homed device (see fig. 2) comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061).

For claim 6, 12, Wils discloses changing at least one of a port priority value for a port used for the first downlink connection (see section 0036-37; section 0051, 0058); and sending a message with the changed port priority value to the dual- homed device (see section 0036-37, section 0051, 0058; see fig. 2).

For claim 20, the message sent to the dual-homed device (see fig. 2) comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it

low…out-of sync state"; section 0055, 0061); and

the apparatus further comprises means for changing port priority value of a port used for the downlink connection (see section 0036-37, section 0051, 0058; see fig. 2) and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP (see section 0036-37, section 0051, 0058; see fig. 2).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku, Regan ,Dalal, and Shabtay by using the above recited features, as taught by Wils, in order to rovide a plurality of network devices as representing a single point device of the point-to-point protocol, such as the IEEE 802.3ad standard, which would make it possible to have one or both of the points of the IEEE 802.3ad standard be multiple devices. Further the devices can be configured to behave as a single point in such a way that the multiple devices still adhere to the 802.3ad standard. Thus the multi device point can be seamlessly connected to a conventional single device that supports the 802.3ad specification (see Wils sections 0006-10). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Wils to the aggregated links of Regan which has been combined with Imajuku and Dalal.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENAN CEHIC whose telephone number is (571)270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG BIN YAO can be reached on (571) 272-3182. 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.

/Kenan Cehic/
Examiner, Art Unit 2473

/KWANG B. YAO/
Supervisory Patent Examiner, Art Unit 2473

Notice of References Cited	Application/Control No. 12/180,934	Applicant(s)/Patent Under Reexamination SALAM ET AL.	
	Examiner KENAN CEHIC	Art Unit 2473	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0047336	03-2004	Shabtay et al.	370/351
	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	
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	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.

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
12180934	12180934	SALAM ET AL.
	Examiner	**Art Unit**
	KENAN CEHIC	2473

✓	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	03/17/2010	08/28/2010	12/17/2010						
	1	✓	✓	✓						
	2	✓	-	-						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	-	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	-	-						
	15	✓	✓	✓						
	16	✓	✓	✓						
	17	✓	✓	✓						
	18	✓	✓	✓						
	19	✓	-	-						
	20	✓	✓	✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
12180934	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

SEARCHED			
Class	Subclass	Date	Examiner
370	216-228	3/9/2010	kc

SEARCH NOTES		
Search Notes	Date	Examiner
Inventorship Search	3/9/2010	kc
East text search	3/9/2010	kc
Update Search	8/26/2010	kc

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	"US 20100020680"	US-PGPUB; USPAT; USOCR; DERWENT	ADJ	ON	2010/12/17 15:30
L2	526	("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 15:36
L9	1	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify $5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (source or downlink$2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 15:48
L10	14	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (activ$4 or primary) near2 (switch$2 or node$2 or router$2) with (notify $5 or inform$5 or signal$4 or message$4 or exchang$5 or notification$2) with (source or downlink$2) and (@ad<="20080728" or	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 15:48

		@pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.				
L11	4521	(router$2 or switch) near4 bus $4 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:45
L12	188	(router$2 or switch) near4 control bus$4 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:45
L13	0	(router$2 or switch$2) near4 physical control (path or bus $4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:48
L14	0	(router$2 or switch$2) with physical control (path or bus $4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:49
L15	5	(router$2 or switch$2) near3 between near4 control (bus$4) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:50
L16	0	(router$2 or switch$2) near3 dedicated control (link) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:51

L17	1	(router$2 or switch$2) near3 between near4 control (link) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/12/17 16:52

12/17/2010 4:55:01 PM
C:\Documents and Settings\kcehic\Desktop\apps\12180934\934.wsp

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

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	12180934	Filing Date	2008-07-28	Docket Number (if applicable)	CPOL956171	Art Unit	2473
First Named Inventor	Samer M. Salam			Examiner Name	Kenan Cehic		

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 200782

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	/Gero G. MCCLELLAN/	Date (YYYY-MM-DD)	2010-12-01
Name	Gero G. McClellan	Registration Number	44227

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.

PATENT
Atty. Dkt. No. CPOL956171
PS Ref. No.: 1654.034129

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Salam et al.	§	Filed: July 28, 2008
Serial No.: 12/180,934	§	Group Art Unit: 2473
Confirmation No.: 1002	§	Examiner: Kenan Cehic

For: MULTI-CHASIS ETHERNET LINK AGGREGATION

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office to fax number 571-273-8300 to the attention of Examiner Kenan Cehic, or electronically transmitted via EFS-Web, on the date shown below:

December 1, 2010 /Joseph Jong/
Date Joseph Jong

MAIL STOP RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

AMENDMENT ACCOMPANYING REQUEST FOR CONTINUED EXAMINATION

Prior to continued examination, please amend the above-identified application as follows. Although no additional fees are believed to be due in connection with this amendment, the Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782 / CPOL956171, for any fees, including extension of time fees or excess claim fees, required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. Remarks/Arguments begin on page 7 of this paper.

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IN THE CLAIMS:

The following listing of claims replaces all prior versions and listings of claims in this application:

1. (Currently Amended) A method comprising:

forwarding traffic received by a network device on a first downlink connection with a dual-homed device to an uplink connection with a network core;

detecting a failure on the uplink connection with the network core; and

in response to detecting the failure, notifying a standby device through an inter-chassis control channel between the network device and the standby device, of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device, the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

2. (Canceled)

3. (Previously Presented) The method of claim 1, further comprising, maintaining the first downlink connection in an active state, while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device.

4. (Original) The method of claim 1, further comprising setting a maximum number of links in a link aggregate group (LAG) to one.

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5. (Original) The method of claim 1, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

6. (Original) The method of claim 5, further comprising:

changing at least one of a port key and a port priority value for a port used for the first downlink connection; and

sending a message with the changed port key or port priority value to the dual-homed device.

7. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

a downlink interface for establishing a downlink connection with a dual-homed device;

an uplink interface for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

logic for detecting a failure on the uplink connection with the network core and, in response, notifying the standby device, through a inter-chassis control channel, of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device, the inter-chassis control channel is physically independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

8. (Canceled)

9. (Previously Presented) The apparatus of claim 7, wherein the downlink connection remains in an active state, with traffic forwarding prevented, after sending the message to the dual-homed device.

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10. (Original) The apparatus of claim 7, configured such that a maximum number of links in a link aggregate group (LAG) is one.

11. (Original) The apparatus of claim 10, wherein the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

12. (Original) The apparatus of claim 11, further comprising logic for changing a port key or port priority value of a port used for the first downlink connection and sending the changed port key or port priority value to the dual-homed device, in an effort to trigger the dual homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

13. (Currently Amended) An apparatus, comprising:

a first switch connected to a second switch through an inter-chassis control channel, the first switch having a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core, and logic, wherein the logic is configured to detect a failure on the uplink connection with the network core, notify the second switch, through inter-chassis control channel, of the failure on the uplink connection, and send a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device,

wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to the network core, and logic, wherein the logic is configured to receive notification, through the inter-chassis control channel, of the uplink failure from the first switch and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network core if previously disabled,

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wherein the inter-chassis control channel is physically independent of the uplink connection and the downlink connection,

wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from the first switch to the second switch over the inter-chassis control channel.

14. (Canceled)

15. (Previously Presented) The apparatus of claim 13, wherein the downlink connection of the first switch remains in an active state, with traffic forwarding prevented, after the sending of the message to the dual-homed device.

16. (Original) The apparatus of claim 13, wherein the first and second switches are configured such that a maximum number of links in a link aggregate group (LAG) is one.

17. (Original) The apparatus of claim 16, wherein the message sent to the dual-homed device by the first switch comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

18. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

means for establishing a downlink connection with a dual-homed device;

means for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

means for detecting a failure on the uplink connection with the network core and, in response, notifying a standby device, through a inter-chassis control channel, of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the dual-homed device and the standby device, the inter-chassis control channel is physically independent of the uplink connection and the downlink connection,

wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

19. (Canceled)

20. (Original) The apparatus of claim 18, wherein:

the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

REMARKS

This is intended as a full and complete response to the Final Office Action dated September, 2010, having a shortened statutory period for response set to expire on December 01, 2010. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 3-7, 9-13, 15-18 and 20 were pending in the application. Claims 1, 7, 13 and 18 have been amended. No new claim has been added. Claims 1, 3-7, 9-13, 15-18 and 20 remain pending following entry of this response. Applicants submit that the amendments do not introduce new matter. Specifically, the amendments to claims 1, 7, 13 and 18 are supported by various drawing figures and their descriptions in Applicants' Specification (see Figure 1, 3B, 3C and 3D where element ICC 124 is shown as physically independent from uplink and downlink connections).

Further, Applicants are not conceding in this application that those amended (or canceled) claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution of the claimed subject matter. Applicants respectfully reserve the right to pursue these (pre-amended or canceled claims) and other claims in one or more continuations and/or divisional patent applications.

Statement of Substance of Interview

On November 4, 2010, a telephonic interview was held between Rajeev Madnawat (attorney) and Examiner Cehic. The parties discussed the cited references including *Imajuku, Regan*, and *Dalal*. Claim 1 was discussed.

During the interview, Applicants' representative argued that a person skilled in the art would not be motivated to combine the teachings of *Imajuku* and *Regan*. Applicants' representative also pointed out that *Dalal* does not teach state synchronization through heartbeat messages. Examiner noted that under a broad construction of claim 1, the communication channel between two devices in *Imajuku* may have two "logically" independent communication channels. No agreement could be reached at the time of the interview.

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Claim Rejections - 35 U.S.C. § 103

Independent claims claims 1, 7, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku et al.* (US 2006/0256712) (hereinafter *Imajuku*) in view of *Regan et al.* (US 2008/0181196) (hereinafter *Regan*) and *Dalal et al.* (US2006/0159011)(hereinafter *Dalal*).

Claims 3, 9, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku* in view of *Regan* and *Dalal* as applied to claims 1, 7, 13 and 18 above, and further in view of *WU et al.* (US 2009/0096592) (hereinafter *Wu*).

Claims 4, 10, 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku* in view of *Regan* and *Dalal* as applied to claims 1, 7, 13 and 18 above, and further in view of *Vinayagam et al.* (US 2009/0109998) (hereinafter *Vinayagam*).

Claims 5, 6, 11, 12, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku* in view of *Regan* and *Dalal* as applied to claims 1, 7, 13 and 18 above, and further in view of *Wills et al.* (US 2004/0133693) (hereinafter *Wills*).

Applicants respectfully traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;

(B) ascertaining the differences between the claimed invention and the prior art;

(C) resolving the level of ordinary skill in the art; and

(D) considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

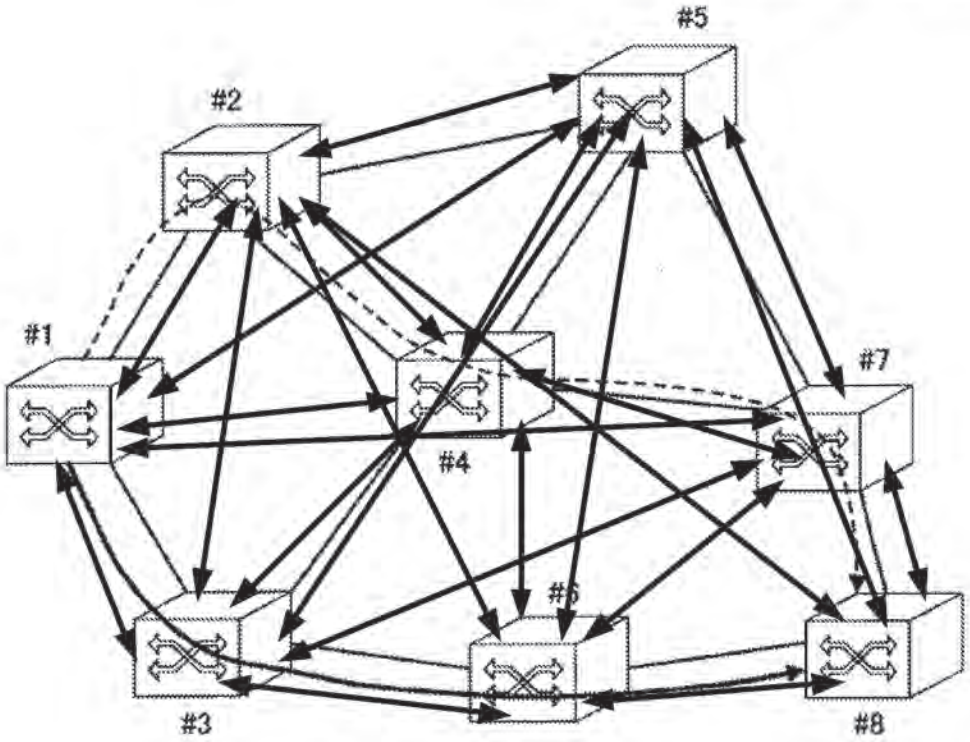
Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

The independent claims recite a network device connected to a standby network device connected through an inter-chassis control channel. Claims define the inter-chassis control channel as a communication link between a network device and a

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standby device and this communication link is physically independent of both the downlink connection and the uplink connection. When the uplink connection from the network device to a network core fails, a notification is sent to only a standby network device through the inter-chassis control channel between the network device and the standby device.

Imajuku discloses a plurality of node connected together in a network in such a way that the network traffic from one particular node to another in the network can flow through more than one network paths going through different nodes. When a node or a link in a path fails, all nodes in the network are notified and the network traffic is routed on an alternative path, to avoid failed node or link. *Imajuku* does not disclose an uplink to a network core. Further, *Imajuku* does not teach active-standby device pairs and also does not disclose an inter-chassis control path between an active and its corresponding standby device. In fact, in *Imajuku*, any device could be a standby device for any other device in the network. The Office notes that *Regan* teaches an inter-chassis control path and the Office reasons that a person skilled in the art would be motivated to combine the teachings of *Regan* with *Imajuku*. The Applicants respectfully disagree and submit that a person skilled in the art would be highly discouraged from combining the two teachings because doing so would require connecting each device in *Imajuku* network with every other device in *Imajuku* network. This is what *Imajuku* network would look like after incorporating *Regan's* teachings.



(Arrow pointers depict inter-chassis control path)

Further, adding a device would require running independent control path lines to all other devices in the network. As apparent, connecting all devices in this manner, just so a failure message can be communicated to a standby device, would be highly impractical. Applicants respectfully submit that a person skilled in the art would not expect to achieve expected results by combining the teachings *Imajuku* and *Regan*.

Note that *Imajuku* describes a network, which may span in a large geographical area and some devices may be miles away from each other. Hence, building a parallel network (as depicted in the above diagram) of inter-chassis control lines would be high impractical and would not provide any benefits as claimed by the Office because *Imajuku* already teaches sending failure messages and hence there is no need for incorporating a parallel network of inter-chassis control paths. Therefore, Applicants respectfully submit that a person skilled in the art would not be motivated to combine

the two teachings. Even if *Imajuku* network is installed in a same building, it will still be a big effort without any apparent benefits and a complete waste of resources to run a parallel network of inter-chassis control paths among all network devices so that each device is connected to all other devices in the network through inter-chassis control paths. It appears that the Office has used a hindsight analysis to find the inter-chassis control path in Regan because as noted above, a person skilled in the art would not consider combing the two teachings through a foresight analysis. Applicants respectfully submit that under US law, the obviousness must be found as a matter of foresight and not hindsight. In order for a person skilled in the art to be motivated to even to attempt combing another art, there must be a need in the art and the resulting combination must be practical enough to provide motivation to combine. None of these conditions seem to apply here. *Imajuku* already handles failure notification using the existing network, which is the most practical way of handling such notification to avoid network complexities, as depicted in the above figure.

Still further, *Regan* discloses two chassis connected through an IP control path (element 330). However, this IP control path is being used by switches to coordinating aggregation of their respective links (*Regan* paragraph [0016]) and not for sending failure messages and heartbeat messages for state synchronization, as recited in claims. Regan, in paragraph [0018] clarifies the role of the IP control path further by disclosing "*The switches/routers 308 and 310 coordinate, using communications exchanged via control path 330, to ensure that the CPE 306 sends only to the active one of switches/routers 308 and 310 traffic associated with the service with respect to which the active one is active.*" As apparent, the IP control path is being used to establish active and standby relationships among chassis to ensure data flow only through an active device. *Regan* is silent as to synchronizing state of a network device and a standby device through a heartbeat message.

The Office notes that *Dalal* teaches sending heartbeat messages. However, *Dalal* does not teach sending these messages via inter-chassis control path. The Office reasons that even though *Dalal* does not disclose an inter-chassis control path, a person skilled in the art would still employ an inter-chassis control path because "*Dalal* implies sending the heartbeat messages over an out of band channel." Applicants

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respectfully submit that there is simply no motivation to use an inter-chassis control path based on the above implied teaching. If the active device fails, it will no longer be able to send any heartbeat regardless of how this device is connected to the standby device. Hence, a person skilled in the art would not even consider adding more complexity in the network by employing the inter-chassis control path between the two devices. It appears that the Office has looked at the claims and then attempted to collect prior art through a hindsight analysis.

Further, the claims recite using the heartbeats for state synchronization. *Dalal* uses the heartbeat to detect device failures. The Office notes that notifying the standby device of the failure of the active device corresponds to synchronizing device states because the "availability" of an active device is a state. Applicants respectfully submit that *Dalal* does not provide any teaching with respect to the state synchronization. As the name suggests and as it is well known, synchronization means keeping two devices in the same state. For example, if certain variables are set in one device, then via the state synchronization, the same variables are set with the same values in the other device so that when the other device is placed to be an active device, it can resume the work as an active device without any time delay. The Office's logic falls short of any definition of the term "synchronization." For example, accordingly to the Office's logic, if one device goes into the "failure mode," the other device should also go into the "failure mode" because this is what the term "state synchronization" means.

MPEP 2141.02 (I) states "*In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.*" In view of the above discussion, Applicant respectfully submits that, in rejecting the claims under 35 U.S.C. 103, the Office has not considered the claimed invention as a whole because the Office has simply located discrete components in the cited prior arts based on a hindsight analysis. As discussed above, a person skilled in the art would not expect to achieve expected results by combining the teachings of *Imajuku, Regan* and *Dalal*. With all due respect, this is not sufficient to show that the teachings of the cited references, when combined, would disclose all features of the claimed invention.

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Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

The rejection to all dependent claims incorporates the rejection to independent claims 1, 7, 13 and 18, respectively, over *Imajuku* in view of *Regal* and in further view of *Dalal*. As stated above, the rejection to independent claims 1 7, 13 and 18 is believed to be overcome. Accordingly, the rejection to all dependent claims is also believed to be overcome. Therefore, the withdrawal of the rejection to these claims is respectfully requested.

Conclusion

Applicants believe that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

/Gero G. MCCLELLAN, Reg. #44227/

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Electronic Patent Application Fee Transmittal

Application Number:	12180934
Filing Date:	28-Jul-2008
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Filer:	Gero G. McClellan/Joseph Jong
Attorney Docket Number:	CPOL956171

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($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Electronic Acknowledgement Receipt	
EFS ID:	8948099
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Gero G. McClellan/Joseph Jong
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL956171
Receipt Date:	01-DEC-2010
Filing Date:	28-JUL-2008
Time Stamp:	19:01:46
Application Type:	Utility under 35 USC 111(a)

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Payment Type	Credit Card
Payment was successfully received in RAM	$810
RAM confirmation Number	7920
Deposit Account	
Authorized User	

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)	956171_RCE.pdf	639576 db523f0fa1a4e411f81e62df22e15b6e2fe91da2c	no	3
Warnings:					
Information:					
2		956171_RCE_Amendment.pdf	132252 da88aaac457a15e822c3ba9756c433bc1769f89	yes	13

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment Submitted/Entered with Filing of CPA/RCE	1	1
Claims	2	6
Applicant Arguments/Remarks Made in an Amendment	7	13

Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	30435 2b8dd75acd02b72aced72fbe907f000b0171c8c16	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	802263		

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
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/180,934	07/28/2008	

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), (l), 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	12/01/2010	(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))	* 16	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

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	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:
/VIKKI SHORT/

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.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

62147 7590 09/01/2010

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	

ART UNIT	PAPER NUMBER
2473	

MAIL DATE	DELIVERY MODE
09/01/2010	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)	
	12/180,934	SALAM ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

-- 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 *06/22/2010*.

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) *1,3-7,9-13,15-18 and 20* 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) *1,3-7,9-13,15-18 and 20* 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

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, 7, 13, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712) in view of Regan et al. (US 2008/0181196) and Dalal et al. (US 2006/0159011)

For claim 1, Imajuku discloses A method comprising

forwarding traffic received by a network device on a first downlink connection (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path) with a dual-homed

device (see fig. 43a; left-most node connected to two nodes; see figures 14 ,24, 38-41 for

switching apparatus) to an uplink connection with a network (see fig. 43a; top most nodes uplinks with right most node);

detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected; section 0305-0307); and in response to detecting the failure, notifying a standby device, through a control channel between the network device and the standby device (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) , of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 14 ,24, 38-41 for switching apparatus) and sending a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 14 ,24, 38-41 for switching apparatus) to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus ; also see section 0226 "failure notification information detected…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

For claim 7, Imajuku discloses a downlink interface for establishing a downlink connection with a dual-homed device (see fig. 43a; top most node has a downlink

connection to left most node on ; see figures 12, 24, 38-41 for switching apparatus);

an uplink interface for establishing an uplink connection with a network (see fig. 43a; top most nodes uplinks with right most node i.e. active path) to forward traffic from the dual-homed device to the network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path); and

logic for detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)) and, in response, notifying a standby device, through a control channel (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) , of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus), and sending a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) to begin forwarding traffic to the network via a second downlink connection between the standby device and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus; also see section 0226 "failure notification information detected….backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving

the failure notification along the backup path)

For claim 13, Imajuku discloses a first switch (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus) connected to a second switch through a control channel (see figure 43a; left bottom most node which is the second node in the backup path is connected to the top most node via path; see figures 12, 24, 38-41 for switching apparatus), the first switch having a downlink interface for establishing a downlink connection (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus) with a dual-homed device (see fig. 43a; left-most node connected to two nodes; see figures 14 ,24, 38-41 for switching apparatus), an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path; see figures 12, 24, 38-41 for switching apparatus), and logic, wherein the logic is configured to detect a failure on the uplink connection with the network(see fig. 43a; Failure is detected in uplink with right most node; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)), notify a second switch of the failure on the uplink connection (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus), and send a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) to begin forwarding

traffic to the network core via a downlink connection between the second switch and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus; also see section 0226 "failure notification information detected.…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path); and wherein the second switch having a downlink interface for establishing a downlink connection with the dual-homed device (see fig. 43a; bottom most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus), an uplink interface for forwarding traffic from the dual-homed device to the network (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node and further into the network (right most node); see figures 14 ,24, 38-41 for switching apparatus), and logic, wherein the logic is configured to receive notification, through a control channel (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) of the uplink failure from the first switch (see fig. 43a; 0305-0307; failure notification is received from the top most node; see figures 14 ,24, 38-41 for switching apparatus) and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network if previously disabled (see section 0226 "failure notification information detected.…backup optical path activation instruction is communicated…along a backup path route"; section 0218,

266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path).

For claim 18, Imajuku discloses means for establishing a downlink connection with a dual-homed device (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus);
means for establishing an uplink connection with a network to forward traffic from the dual-homed device to the network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path; see figures 12, 24, 38-41 for switching apparatus); and
means for detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected in uplink with right most node; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)) and, in response, notifying a standby device, through a control channel (see figure 43a ; upper most node notifies two middle nodes in the back up bath through a channel connecting those nodes (ie vertical paths)) , of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) and sending a message to the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node

receiving the failure notification along the backup path) to trigger the dual-homed device to begin forwarding traffic to the network via a second downlink connection between the dual-homed device and the standby device switch (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus).

Imajuku does not explicitly discuss the following:

For claim 1, an uplink with a network core; notifying a standby device through an inter-chassis control channel between the network device and the standby device ; the inter-chassis control channel is independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

For claim 7, an uplink with a network core; notifying a standby device through an inter-chassis control channel; the inter-chassis control channel is independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

For claim 13, an uplink with a network core, a first switch connected to a second switch through an inter-chassis control channel; notification through an inter-chassis control channel, wherein the inter-chassis control channel is independent of the uplink

connection and the downlink connection; wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from first switch to the second switch over the inter-chassis control channel.

For claim 18, an uplink with a network core ; notification through an inter-chassis control channel, wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection; wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

Regan from the same of similar field of endeavor discloses the following:
For claim 1, Regan discloses an inter-chassis control channel (see section 0021 "inter-chassis control path"; fig. 3; 330), wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection (see figure 3; connection 330 is independent from connections to the CPE and to uplink to MAC C), notifying a standby device through an inter-chassis control channel between the network device and the standby device (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP control path 330"; chassis notifications sent via control channel);

For claim 7, Regan discloses notifying a standby device through an inter-chassis control channel (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP

control path 330"; chassis notifications sent via control channel), wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection (see figure 3, see section 0021 "inter-chassis control path"; connection 330 is independent from connections to the CPE and to uplink to MAC C)

For claim 13, Regan discloses a first switch connected to a second switch through an inter-chassis control channel (see figure 3, see section 0021 "inter-chassis control path"; switch 308 and standby switch 310 are connected through 330); notification through an inter-chassis control channel (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP control path 330"; chassis notifications sent via control channel), wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection (see figure 3, see section 0021 "inter-chassis control path"; connection 330 is independent from connections to the CPE and to uplink to MAC C).

For claim 18, Regan discloses notification through an inter-chassis control channel (see section 0018 lines 17-19 "chassis coordinate via a control path, such as IP control path 330"; chassis notifications sent via control channel), wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection (see figure 3, see section 0021 "inter-chassis control path"; connection 330 is independent from connections to the CPE and to uplink to MAC C)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku by using the above recited features, as taught by Regan, in order to redundancy (via extra redundant links) in the event where link aggregation groups are used and there is a failure of an entire chassis / all link aggregation group links on a chassis.(see Regan sections 0002-10). It would have been obvious to a person of ordinary skill in the art to implement redundant links on each path between each individual networks nodes (such as the nodes in Imajuku in figure 43a) including a control channel and its associated functions. Imajuku suggest having a channel between a primary node (in active path) and a standby node (in backup path) through which control messages (such as failure messages) are sent as shown in figure 43a of Imajuku. Therefore, having a channel, used for control (such as a control channel between chassis as taught by Regan), between a primary and a standby node is suggested and implied by Imajuku.

Dalal from the same or similar field of endeavor discloses the following:
For claim 1, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110), wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from the network

device to the standby device over the control channel (see figure 1; 128).

For claim 7, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110), wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from the network device to the standby device over the control channel (see figure 1; 128).

For claim 13, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110); wherein a state synchronization is performed between the first node and the second node through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from first node to the second node over the control channel (see figure 1; 128).

For claim 18, Dalal discloses an uplink with a network core (see figure 1; uplink connection of nodes 102 and 114 to network core 110), wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message (see section 0052; heartbeat messages are sent from active node to standby in order to synchronize the availability state of the active node) from the network

device to the standby device over the control channel (see figure 1; 128).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku and Regan by using the above recited features, as taught by Dalal, in order to provide a method of determining if a primary device is unavailable, via heartbeat messages, so that standby device can take over responsibilities and services interruptions to the user are minimized or eliminated (see Dalal section 0052). It would have been obvious to implement availability determination function via heartbeat messages between a primary device and a standby device (Dalal) and implement it to the combination of the primary switch / node and standby switch / node of Imajuku and Regan. Dalal implies sending the heartbeat messages over an out of band channel (figure 1; 128), therefore it would have been obvious to implement such messages via the inter-chassis channel (Regan).

2. Claims 3, 9, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712), Regan et al. (US 2008/0181196) and Dalal et al. (US 2006/0159011) as applied to claims 1, 7, 13 and 18 above, and further in view of WU et al. (US 2009/0096592)

For claim 3 and similarly 9, 15, Imajuku discloses while preventing traffic forwarding on the first downlink connection (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus), after sending the message to the dual-homed device (see fig.

43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected.…backup optical path activation instruction is communicated…along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path).
For claim 15, the downlink connection of the first switch (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus)

Imajuku, Regan and Dalal do not explicitly discuss the following:
For claim 3 and similarly 9, 15,maintaining the first connection in an active state.

WU from the same or similar field of endeavor discloses the following:
For claim 3 and similarly 9, 15, WU discloses maintaining the first connection in an active state (see section 0006-7).
It would have been obvious to a person of ordinary skill in the art to combine the teaching of keeping the physical layer active, even though no data is being sent, by WU to the teachings of Imajuku, Regan and Dalal since all the claimed elements were known in the prior art and one skilled in the art could have combined the method of keeping the physical layer active (power is supplied), where there would be no change to their respective functions. The combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Further, this would allow for the

communication system to be always ready to send / receive data, since the communication system is power on and thus would know if there is data being received or needs to be transmitted.

3. Claims 4, 10, 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712), Regan et al. (US 2008/0181196) and Dalal et al. (US 2006/0159011) as applied to claims 1, 7, 13 and 18 above, and further in view of Vinayagam et al. (US 2009/0109998)

For claim 4, 10, and 16, Imajuku, Regan and Dalal disclose all the claimed features as shown above.

Imajuku, Regan and Dalal do not explicitly discuss the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one.

Vinayagam from the same or similar field of endeavor discloses the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one (see section 0024 "link aggregation…specify a known limit to maximum number of ports"; claim 10; It would have been obvious to set a maximum number of ports (i.e. links) for a link aggregation to a arbitrary number such as 1 (i.e. design choice)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku, Regan and Dalal by using the above recited features, as taught by Vinayagam, in order to provide a self-configuring

manner using IEEE 802.3ad Link Aggregation Control Protocol such that drawbacks and inefficiencies associated with the conventional manual configuration required when using IEEE 802.3ad Link Aggregation Control Protocol would be advantageous, desirable and useful (see Vinayagam section 0004-0007). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Vinayagam to the aggregated links of Regan which has been combined with Imajuku and Dalal.

Claims 5, 6,11,12, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712), Regan et al. (US 2008/0181196) and Dalal et al. (US 2006/0159011) as applied to claims 1, 7, 13 and 18 above, and further in view of Wills et al. (US 2009/0109998)

For claims 5, 6,11,12, 17, and 20 Imajuku, Regan and Dalal discloses the claimed invention as described above.

Imajuku, Regan and Dalal do not explicitly discuss the following:

For claim 5, 11, and 17, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP)

For claim 6, 12, changing at least one of a port priority value for a port used for the first downlink connection; and sending a message with the changed port key or port priority value to the dual- homed device.

For claim 20, the message sent to the dual-homed device comprises an OUT_OF_SYNC

message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

Wils from the same or similar field of endeavor discloses the following:

For claim 5, 11, and 17, Wils discloses wherein sending the message to the dual-homed device (see fig. 2) comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061).

For claim 6, 12, Wils discloses changing at least one of a port priority value for a port used for the first downlink connection (see section 0036-37; section 0051, 0058); and sending a message with the changed port priority value to the dual- homed device (see section 0036-37, section 0051, 0058; see fig. 2).

For claim 20, the message sent to the dual-homed device (see fig. 2) comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061); and

the apparatus further comprises means for changing port priority value of a port used for the downlink connection (see section 0036-37, section 0051, 0058; see fig. 2) and for

sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP (see section 0036-37, section 0051, 0058; see fig. 2).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku, Regan and Dalal by using the above recited features, as taught by Wils, in order to rovide a plurality of network devices as representing a single point device of the point-to-point protocol, such as the IEEE 802.3ad standard, which would make it possible to have one or both of the points of the IEEE 802.3ad standard be multiple devices. Further the devices can be configured to behave as a single point in such a way that the multiple devices still adhere to the 802.3ad standard. Thus the multi device point can be seamlessly connected to a conventional single device that supports the 802.3ad specification (see Wis sections 0006-10). It would have been obvious to implement the teachings of link aggregation and its associated teachings as described above by Wils to the aggregated links of Regan which has been combined with Imajuku and Dalal.

Conclusion

5. 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.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENAN CEHIC whose telephone number is (571)270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG BIN YAO can be reached on (571) 272-3182. 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.

/Kenan Cehic/
Examiner, Art Unit 2473

/KWANG B. YAO/
Supervisory Patent Examiner, Art Unit 2473

Notice of References Cited	Application/Control No. 12/180,934	Applicant(s)/Patent Under Reexamination SALAM ET AL.	
	Examiner KENAN CEHIC	Art Unit 2473	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2006/0159011 A1	07-2006	Dalal et al.	370/220
	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
	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

✓	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	03/17/2010	08/28/2010							
	1	✓	✓							
	2	✓	-							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	-							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	-							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	-							
	20	✓	✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

SEARCHED			
Class	Subclass	Date	Examiner
370	216-228	3/9/2010	kc

SEARCH NOTES		
Search Notes	Date	Examiner
Inventorship Search	3/9/2010	kc
East text search	3/9/2010	kc
Update Search	8/26/2010	kc

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S3	4928	370/216-228.ccls. and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/14 15:33
S4	8	((SAMER) near2 (SALAM)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 15:36
S5	28	((ALI) near2 (SAJASSI)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S6	8	((SAMER) near2 (SALAM)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S7	23	S5 not S6	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S8	16150	(standby or backup) near3 switch$3 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 01:11
S9	3	(standby or backup) near3 switch$3 and (out of sync or "out_of_sync") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:12
S10	1	(standby or backup) near3 switch$3 and (inter chassis control channel or "interchassis control channel") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:15
S11	7332	(standby or backup) near3 switch$3 and (redundant or backup or failover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:16

S12	353	(standby or backup) and rdi and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:24
S13	257	(standby or backup or switchover) same ais and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 04:17
S14	26	(standby or backup or switchover) same ais and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and sonet [bsum]	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 04:20
S15	5	(standby or backup or switchover) same ais and (ais with downstream$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and sonet [bsum]	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 14:47
S16	537	activat$5 near6 (standby or backup or switchover) near2 (switch$2 or node$2 or router $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 15:08
S17	61	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 15:08

S18	1	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and ("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 16:38
S19	3	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and ("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 16:38
S20	33	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4) near6 (fault or failure or corrupt $3 or fail$3 or broken or disrupt $3 or error$4 or abnormal$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:12
S21	6	(activ$4 or primary) with ("p-ais" or ais) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:41

S22	10	(activ$4 or primary or working) with ("p-ais" or ais) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:41
S23	78	(decreas$5 or decrement$4 or low$5) near4 (priorit$5 or weight$5) with (failover$2 or "fail-over" or switch over or "switch-over") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:58
S24	194	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:16
S25	14	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router $2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:16

S26	14	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:17
S27	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/02/17 14:19
S28	1	S27 and failure notification	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:27
S29	1	S27 and (failure notification or switching operation or switching point$2)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:31
S30	0	S27 and embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:42
S31	0	S27 and Embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:43
S32	0	S27 and Embodiment	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:43
S33	0	S27 and "Embodiment"	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:44
S34	0	S27 and embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 15:32
S35	1	(inter chassis or inter-chassis) control channel$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 16:06

S36	229	control channel$2 with router$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:05
S37	15	(US-20090225661-$ or US-20060023630-$ or US-20050108401-$ or US-20070183347-$ or US-20050111350-$ or US-20030185225-$ or US-20030161260-$ or US-20030021226-$ or US-20040001449-$ or US-20020167895-$ or US-20070280103-$ or US-20060256712-$).did. or (US-7644317-$ or US-6442133-$ or US-5835696-$).did.	US-PGPUB; USPAT	ADJ	ON	2010/02/17 17:05
S38	2	S37 and chassis	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:05
S39	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/02/17 17:06
S40	1	S39 and switch	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:06
S41	10	control channel$2 with (router $2 or switch or switches) and chassis with (router$2 or switch or switches) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:13
S42	4361	control with (router$2 or switch or switches) and chassis with (router$2 or switch or switches) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:17
S43	3448	control with (router$2 or switch or switches) same chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:18

S44	1698	control with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:18
S45	346	control with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:51
S46	53	control with chassis and (router $2 or switch or switches) with chassis and core network$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:16
S47	3	control channel$2 with switch$2 and (switch or switches) with chassis and core network$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:19
S48	85	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:21
S49	203	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:22
S50	203	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:22

S51	223	control$4 near3 channel$2 with (chassis or multi-chassis or switch$2) and (switch or switches) with (chassis or multi-chassis) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:24
S52	5	(brown near2 stephen).xa.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/22 18:07
S53	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/03/16 16:05
S54	1	S53 and failure$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:05
S55	1	S53 and backup	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:51
S56	1	S53 and activat$6	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:56
S57	1	S53 and activat$6 same failure notifi$8	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:03
S58	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:16
S59	1	(optical or sonet) with uplink same uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18
S60	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") \	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18

S61	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18
S62	5	(optical or sonet) with uplink same uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:25
S63	250	uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:37
S64	0	backup with uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:01
S65	35	backup with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:01
S66	59	(backup or protect$5) near4 (edge$2 or gateway$2) and (edge$2 or gateway$2) with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:23
S67	45	(backup or back up) with (edge $2 or gateway$2) and (edge$2 or gateway$2) with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:30

S68	97	(optical or sonet) with access network same core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:35
S69	101	control$4 near3 channel$2 with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 19:17
S70	6	"l1 active state" and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 19:55
S71	15760	(physical or layer "1") near5 (active) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:17
S72	0	(physical or layer "1") near5 (active) with ("not") near3 (send $4 or transmi$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:17
S73	19	(physical or layer "1") near5 (active) with (no) near3 (send $4 or transmi$5 or data) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:18
S74	22	(physical or layer "1" or first layer) near5 (active or operational) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:20

S75	10	(physical layer$2 or layer$2 "1" or first layer) near5 (active or operational) with (no or "not") near5 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:22
S76	5	(physical layer$2 or layer$2 "1" or first layer) with (always) near3 (active or operational) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:24
S77	194	(physical or layer "1" or first layer) with (active or operational or power) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:26
S78	29	(physical layer$2 or layer "1" or first layer) with (active or operational or power) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:26
S79	27	link aggregate group and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:49
S80	985	(one or "1" or single) with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:40

S81	14	(max$4 or availabl$4) near3 (one or "1" or single) with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:40
S82	500	(one or "1" or single) near2 link with link (aggregat$4 or trunk $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:45
S83	37	(max$4 or availabl$4) near3 (one or "1" or single) same link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:46
S84	8	set$5 near5 (max$4 or availabl $4 or number$2) near3 link$4 near4 (one or "1" or single) and (link or port$2) (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:51
S85	5	(max$4) number$2 with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:00
S86	7	(max$4) number$2 with (link or port$3) (aggregat$4 or trunk $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:00
S87	34	(one or "1" or single) with link (aggregat$4 or trunk$2) same (standby or backup) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:06

S88	40	(one or "1" or single) with (link or port$2) (aggregat$4 or trunk $2) same (standby or backup) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:07
S89	3853	(max$5 or allowabl$5) with (aggreation group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:07
S90	34	(max$5 or allowabl$5) with (aggregat$5 group) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:08
S91	0	set$4 near2 (number of link$2) with (aggregat$5 group) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S92	0	set$4 near2 (number of link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S93	0	(number of link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S94	40	(number near4 link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11

S95	137	(number near4 link$2) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S96	173	(number near4 (link$2 or port $2)) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:16
S97	77	(number near4 (link$2 or port $2)) with (one or "1" or single) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:16
S98	0	(out of sync$5) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:43
S99	0	(out of sync$5) same (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:43
S100	39	(synchron$6) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:44
S101	48	(synchron$8) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:44

S102	19	(synchroniz$8 or sync) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:01
S103	0	(out of sync or "out_of_sync") with standby and (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:04
S104	0	(out of sync or "out_of_sync") and (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:05
S105	1	(US-20040133693-$).did.	US-PGPUB	ADJ	ON	2010/03/17 12:12
S106	1	S105 and sync$9	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:12
S107	1	S105 and (sync$12 or bit)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:16
S108	1	S105 and (key$4 or priorit$4)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:21
S109	0	(inter chassis or inter-chassis) channel$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 16:25
S110	2	(inter chassis or inter-chassis) near2 channel$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 16:25
S111	1	(US-20080181196-$).did.	US-PGPUB	ADJ	ON	2010/08/25 16:31

S112	28	control near2 (channel$2 or path $2) with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:16
S113	975	heartbeat$4 with (router$2 or switch$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:49
S114	38	heartbeat$4 with (router$2 or switch$2) with synch$7 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:51
S115	48	heartbeat$4 with (router$2 or switch$2) with synch$10 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 17:51
S116	2	"checkpoint sequence value"	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/08/25 18:59

8/28/2010 11:07:08 PM
C:\Documents and Settings\kcehic\Desktop\apps\12180934\934.wsp

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Dated: June 22, 2010 Signature: /Joseph Jong/
Joseph Jong

Docket No.: 1654.034129 (CPOL956171)
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Samer M. Salam et al.

Serial No.: 12/180,934

Filed: July 28, 2008

For: MULTI-CHASIS ETHERNET LINK AGGREGATION

§ Confirmation No.: 1002

§ Group Art Unit: 2473

§ Examiner: Kenan Cehic

RESPONSE TO OFFICE ACTION DATED MARCH 22, 2010

MS AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated March 22, 2010, please amend the above-identified U.S. patent application as follows.

The Commissioner is hereby authorized to charge underpayments or credit overpayments to counsel's Deposit Account No. 20-0782/CPOL956171 (1654.034129)/GGM.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

1483951_2

IN THE CLAIMS:

The following listing of claims replaces all prior versions and listings of claims in this application:

1. (Currently Amended) A method comprising:

forwarding traffic received by a network device on a first downlink connection with a dual-homed device to an uplink connection with a network core;

detecting a failure on the uplink connection with the network core; and

in response to detecting the failure, notifying a standby device through an inter-chassis control channel between the network device and the standby device, of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device, the inter-chassis control channel is independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

2. (Canceled)

3. (Currently Amended) The method of claim 1, further comprising, maintaining the first downlink connection in an ~~L1~~ active state, while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device.

4. (Original) The method of claim 1, further comprising setting a maximum number of links in a link aggregate group (LAG) to one.

5. (Original) The method of claim 1, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

6. (Original) The method of claim 5, further comprising:

changing at least one of a port key and a port priority value for a port used for the first downlink connection; and

sending a message with the changed port key or port priority value to the dual-homed device.

7. (Currently Amended) An apparatus having a network device and an standby device, the apparatus comprising:

a downlink interface for establishing a downlink connection with a dual-homed device;

an uplink interface for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

logic for detecting a failure on the uplink connection with the network core and, in response, notifying [[a]] the standby device, through a inter-chassis control channel, of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device, the inter-chassis control channel is independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

8. (Canceled)

9. (Currently Amended) The apparatus of claim 7, wherein the downlink connection remains in an ~~LI~~ active state, with traffic forwarding prevented, after sending the message to the dual-homed device.

10. (Original) The apparatus of claim 7, configured such that a maximum number of links in a link aggregate group (LAG) is one.

11. (Original) The apparatus of claim 10, wherein the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

12. (Original) The apparatus of claim 11, further comprising logic for changing a port key or port priority value of a port used for the first downlink connection and sending the changed port key or port priority value to the dual-homed device, in an effort to trigger the dual homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

13. (Currently Amended) An apparatus, comprising:

a first switch connected to a second switch through an inter-chassis control channel, the first switch having a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core, and logic, wherein the logic is configured to detect a failure on the uplink connection with the network core, notify [[a]]]] the second switch, through inter-chassis control channel, of the failure on the uplink connection, and send a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device,~~; and~~

wherein [[a]] the second switch having a downlink interface for establishing a downlink connection with the dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to the network core, and logic, wherein the logic is configured to receive notification, through the inter-chassis control channel, of the uplink failure from the first switch and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network core if previously disabled~~, and communicate with the dual-homed device to prompt the dual-homed device to begin forwarding traffic from the dual-homed device to the network core via the second switch~~

wherein the inter-chassis control channel is independent of the uplink connection and the downlink connection.

wherein a state synchronization is performed between the first switch and the second switch through sending a periodic heartbeat message from the first switch to the second switch over the inter-chassis control channel.

14. (Canceled)

15. (Currently Amended) The apparatus of claim 13, wherein the downlink connection of the first switch remains in an ~~L1~~ active state, with traffic forwarding prevented, after the sending of the message to the dual-homed device.

16. (Original) The apparatus of claim 13, wherein the first and second switches are configured such that a maximum number of links in a link aggregate group (LAG) is one.

17. (Original) The apparatus of claim 16, wherein the message sent to the dual-homed device by the first switch comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

18. (Original) An apparatus having a network device and an standby device, the apparatus comprising:

means for establishing a downlink connection with a dual-homed device;

means for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

means for detecting a failure on the uplink connection with the network core and, in response, notifying a standby device, through a inter-chassis control channel, of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the dual-homed device and the standby device, the inter-chassis control channel is independent of the uplink connection and the downlink connection, wherein a state synchronization is performed between the network device and the standby device through sending a periodic heartbeat message from the network device to the standby device over the inter-chassis control channel.

19. (Canceled)

20. (Original) The apparatus of claim 18, wherein:

the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

REMARKS

This is intended as a full and complete response to the Office Action dated March 22, 2010, having a shortened statutory period for response set to expire on June 22, 2010. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-20 were pending in the application. Claims 1, 3, 7, 9, 13, 15 and 18 have been amended. Claims 2, 8, 14, and 19 have been cancelled. No new claim has been added. Claims 1, 3-7, 9-13, 15-18 and 20 remain pending following entry of this response. Applicants submit that the amendments do not introduce new matter.

Further, Applicants are not conceding in this application that those amended (or canceled) claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution of the claimed subject matter. Applicants respectfully reserve the right to pursue these (pre-amended or canceled claims) and other claims in one or more continuations and/or divisional patent applications.

Statement of Substance of Interview

On June 15, 2010, a telephonic interview was held between Gero G. McClellan (attorney of record), Rajeev Madnawat (attorney) and Examiner Cehic. The parties discussed the cited references including *Regan*. Claim 1 was discussed. The parties also discussed proposed amendments to claim 1. The proposed amendments are reflected in this response.

During the interview, Applicants argued that 1 is patentable over the cited prior art. No agreement could be reached at the time of the interview, but the Examiners agreed that the proposed amendments discussed would clarify the claimed subject matter.

Claim Rejections - 35 U.S.C. § 112

Claim 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims have been amended to rectify language errors and also to bring the claims in conformity with 35 USC 112. The Office is respectfully requested to withdraw this rejection.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 7, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku et al.* (US 2006/0256712) (hereinafter *Imajuku*) in view of *Wang et al.* (US 7,580,349) (hereinafter *Wang*).

Claims 2, 8, 14, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku* in view of *Wang* as applied to claims 1, 7, 13 and 18 above, and further in view of *Regan et al.* (US 2008/0181196) (hereinafter *Regan*).

Claims 3, 9, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku* in view of *Wang* as applied to claims 1, 7, 13 and 18 above, and further in view of *WU et al.* (US 2009/0096592) (hereinafter *Wu*).

Claims 4, 10, 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku* in view of *Wang* as applied to claims 1, 7, 13 and 18 above, and further in view of *Vinayagam et al.* (US 2009/0109998) (hereinafter *Vinayagam*).

Claims 5, 6, 11, 12, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Imajuku* in view of *Wang* as applied to claims 1, 7, 13 and 18 above, and further in view of *Wils et al.* (US 2004/0133693) (hereinafter *Wils*).

Applicants respectfully traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;

(B) ascertaining the differences between the claimed invention and the prior art;

(C) resolving the level of ordinary skill in the art; and

(D) considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

Imajuku discloses a plurality of node connected together in a network in such a way that the network traffic from one particular node to another in the network can flow through more than one network paths going through different nodes. When a node or a link in a path fails, all nodes in the network are notified and the network traffic is routed on an alternative path, to avoid failed node or link. *Imajuku* does not disclose an uplink to a network core. However, the Office asserts that *Wang* discloses an uplink to a network core.

The claims recite a network device connected to a standby network device connected through an inter-chassis control channel. Claims define the inter-chassis control channel as a communication link between a network device and a standby device and this communication link is independent of both the downlink connection and the uplink connection. When the uplink connection from the network device to a network core fails, a notification is sent to the standby network device through the inter-chassis control channel between the network device and the standby device. The Applicants respectfully submit that the network nodes in *Imajuku* are not connected through an inter-chassis control channel. Further, *Imajuku* discloses sending out notification to all nodes, none of them are standby nodes. That is, all nodes in the *Imajuku* network are active nodes (apparent from the fact that a node in *Imajuku* may lie in an active path between two nodes as well as in a backup path between two different nodes; see node #4 in Figure 4 of *Imajuku*). Further, all nodes in *Imajuku* are connected through active downlink connections and failure notifications to all nodes are sent via these downlink connections and not through an inter-chassis control channel, as recited in claims.

The Applicants respectfully submit that because *Imajuku* does not disclose a standby device, an inter-chassis control channel and the particular manner in which a standby device and an inter-chassis control channel is being recited to be used, *Imajuku* fails to disclose all claim limitations in the claimed arrangement. *Wang* disclosure regarding a network core fails to rectify the deficiencies of *Imajuku* disclosure because Wang also does not disclose the above recited claim limitations in the claimed arrangement.

Regan discloses two chassis connected through an IP control path (element 330). However, this IP control path is being used by switches to coordinating aggregation of their respective links (*Regan* paragraph [0016]) and not for sending failure messages and heartbeat messages for state synchronization, as recited in claims. Regan, in paragraph [0018] clarifies the role of the IP control

path further by disclosing "*The switches/routers 308 and 310 coordinate, using communications exchanged via control path 330, to ensure that the CPE 306 sends only to the active one of switches/routers 308 and 310 traffic associated with the service with respect to which the active one is active.*" As apparent, the IP control path is being used to establish active and standby relationships among chassis to ensure data flow only through an active device. *Regan* is silent as to synchronizing state of a network device and a standby device through a heartbeat message.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

The rejection to all dependent claims incorporates the rejection to independent claims 1, 7, 13 and 18, respectively, over *Imajuku* in view of *Wang* and in further view of *Regan*. As stated above, the rejection to independent claims 1 7, 13 and 18 is believed to be overcome. Accordingly, the rejection to all dependent claims is also believed to be overcome. Therefore, the withdrawal of the rejection to these claims is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Dated: June 22, 2010

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4,

By: /Gero G. MCCLELLAN, Reg. #44227/
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Electronic Acknowledgement Receipt	
EFS ID:	7869707
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASSIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Gero G. McClellan/Joseph Jong
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL956171
Receipt Date:	22-JUN-2010
Filing Date:	28-JUL-2008
Time Stamp:	17:59:30
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		956171_ROA.pdf	137338 [illegible]	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	10
Warnings:			
Information:			
	Total Files Size (in bytes):	137338	

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
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/180,934	07/28/2008	

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), (l), 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 06/22/2010

	(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 ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 16	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

AMENDMENT

	(Column 1)		(Column 2)	(Column 3)					
	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:
/MARQUITA D. JONES/

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.
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171	1002

62147 7590 03/22/2010

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER	
CEHIC, KENAN	
ART UNIT	PAPER NUMBER
2473	
MAIL DATE	DELIVERY MODE
03/22/2010	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)	
	12/180,934	SALAM ET AL.	
	Examiner	Art Unit	
	KENAN CEHIC	2473	

-- 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 *08/18/2008*.

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) *1-20* 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) *1-20* 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

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 3, 9, and 15, it is not clear what or what a "L1 active state " entails. Further the examiner fails to see a definition or explanation what a "L1 active state" is.

For claim 13, in the first paragraph it states " send a message to the dual-homed device to trigger the dual-homed device to **begin forwarding traffic** to the network core via a downlink connection between the second switch and the dual-homed device" (i.e. the dual homed device begins forwarding), while the second paragraph states the following: "communicate with the dual-homed device **to prompt the dual-homed device to begin forwarding traffic** from the dual-homed device to the network core via the second switch.". Therefore, the claims states that the dual home device begins forwarding to the second switch when a notification from the first switch is received, while it is also stated that the second switch prompts the dual homed device in order to start forwarding to it. Thus it is not clear when the dual homed device starts forwarding to the second switch. It is not clear if the forwarding starts when the notification from the first switch is received, when the second switch prompts the dual homed device or if both condition need to present to start forwarding.

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, 7, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712) in view of Wang et al (US 7,580,349).

For claim 1, Imajuku discloses A method comprising

forwarding traffic received on a first downlink connection (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path) with a dual-homed

device (see fig. 43a; left-most node connected to two nodes; see figures 14 ,24, 38-41 for switching apparatus) to an uplink connection with a network (see fig.

43a; top most nodes uplinks with right most node);

detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected; section 0305-0307); and in response to detecting the failure, notifying a standby device of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 14 ,24, 38-41 for switching apparatus) and sending a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 14 ,24, 38-41 for switching apparatus) to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus ; also see section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

For claim 7, Imajuku discloses a downlink interface for establishing a downlink connection with a dual-homed device (see fig. 43a; top most node has a downlink connection to left most node on ; see figures 12, 24, 38-41 for switching apparatus);

an uplink interface for establishing an uplink connection with a network (see fig. 43a; top most nodes uplinks with right most node i.e. active path) to forward traffic from the dual-homed device to the network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path); and logic for detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)) and, in response, notifying a standby device of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) and sending a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) to begin forwarding traffic to the network via a second downlink connection between the standby device and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus; also see section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

For claim 13, Imajuku discloses a first switch having a downlink interface for

establishing a downlink connection (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus) with a dual-homed device (see fig. 43a; left-most node connected to two nodes; see figures 14 ,24, 38-41 for switching apparatus), an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network (see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path; see figures 12, 24, 38-41 for switching apparatus), and logic, wherein the logic is configured to detect a failure on the uplink connection with the network(see fig. 43a; Failure is detected in uplink with right most node; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)), notify a second switch of the failure on the uplink connection (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus), and send a message to the dual-homed device to trigger the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus; also see section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a

backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path); and

a second switch having a downlink interface for establishing a downlink connection with the dual-homed device (see fig. 43a; bottom most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus), an uplink interface for forwarding traffic from the dual-homed device to the network (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node and further into the network (right most node); see figures 14 ,24, 38-41 for switching apparatus), and logic, wherein the logic is configured to receive notification of the uplink failure from the first switch (see fig. 43a; 0305-0307; failure notification is received from the top most node; see figures 14 ,24, 38-41 for switching apparatus) and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network if previously disabled (see section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path), and communicate with the dual-homed device to prompt (see section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292;

activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path) the dual-homed device to begin forwarding traffic from the dual-homed device to the network via the second switch (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus).

For claim 18, Imajuku discloses means for establishing a downlink connection with a dual-homed device (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus); means for establishing an uplink connection with a network to forward traffic from the dual-homed device to the network see fig. 43a; top most node receives and forwards traffic from left most node i.e. active path; see figures 12, 24, 38-41 for switching apparatus); and
means for detecting a failure on the uplink connection with the network (see fig. 43a; Failure is detected in uplink with right most node; section 0305-0307; see figures 12, 24, 38-41 for switching apparatus and their descriptions of failure monitoring (see section 0294-298 for example)) and, in response, notifying a standby device of the failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus) and sending a message to the dual-homed device (see fig. 43a; section 0305-0307;

failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path) to trigger the dual-homed device to begin forwarding traffic to the network via a second downlink connection between the dual-homed device and the standby device switch (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus).

Imajuku does not explicitly discuss the following:
For claim 1, and similarly 7, 13, 18, uplink with a network core.
Wang from the same or similar field of endeavor discloses the following:
For claim 1, and similarly 7, 13, 18, uplink with a network core (see fig. 9. networks / conection leading to metro or long-haul core).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Wang by using the above recited features, as taught by Imajuku, in order to provide a method of having a backup path so that if failure occurs in the primary communication can still be done via a backup path where

enough bandwidth / channels are kept so that multiple failures can be accommodated (see Imajuku sections 0017-26)

3. Claims 2, 8, 14, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712) in view of Wang et al (US 7,580,349) as applied to claims 1, 7, 13 and 18 above, and further in view of Regan et al. (US 2008/0181196)

For claim 2, and similarly 8 and 19, Imajuku disclose wherein notifying the standby device comprises sending a failure message to the standby device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

For claim 14, Imajuku discloses a first and second switches (see fig. 43a; see figures 12, 24, 38-41 for switching apparatus) notifying the second switch of the uplink connection failure (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267,

0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path)

. Imajuku and Wang do not explicitly discuss the following:

For claim 2,8 and 19, an inter-chassis control channel

For claim 14, a control channel between a first and second nodes

Regan from the same of similar field of endeavor discloses the following:

For claim 2,8 and 19, Regan discloses an inter-chassis control channel (see section 0021 "inter-chassis control path"; fig. 3; 330);

For claim 14, Regan discloses a control channel between a first and second nodes (see section 0021 "inter-chassis control path"; fig. 3; 330)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku and Wang by using the above recited features, as taught by Regan, in order to provide redundancy in the event where link aggregation groups are used and there is a failure of an entire chassis / all link aggregation group links on a chassis.(see Regan sections 0002-10)

4. Claims 3, 9, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712) in view of Wang et al (US 7,580,349) as applied to claims 1, 7, 13 and 18 above, and further in view of WU et al. (US 2009/0096592)

For claim 3 and similarly 9, 15, Imajuku discloses while preventing traffic forwarding on the first downlink connection (see fig. 43a; 0305-0307; switching operation to the back up path i.e. left most node start forwarding to bottom most node; see figures 14 ,24, 38-41 for switching apparatus), after sending the message to the dual-homed device (see fig. 43a; section 0305-0307; failure notification is sent to all the nodes; see figures 12, 24, 38-41 for switching apparatus; section 0226 "failure notification information detected....backup optical path activation instruction is communicated...along a backup path route"; section 0218, 266-267, 0291-292; activation signals (to activate backup path) are sent from node receiving the failure notification along the backup path).
For claim 15, the downlink connection of the first switch (see fig. 43a; top most node has a downlink connection to left most node; see figures 12, 24, 38-41 for switching apparatus)

Imajuku and Wang do not explicitly discuss the following:
For claim 3 and similarly 9, 15,maintaining the first connection in an L1 active state.

WU from the same or similar field of endeavor discloses the following:
For claim 3 and similarly 9, 15, WU discloses maintaining the first connection in an L1 active state (see section 0006-7).

It would have been obvious to a person of ordinary skill in the art to combine the teaching of keeping the physical layer active, even though no data is being sent, by WU to the teachings of Imajuku and Wang since all the claimed elements were known in the prior art and one skilled in the art could have combined the method of keeping the physical layer active (power is supplied), where there would be no change to their respective functions. The combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Further, this would allow for the communication system to be always ready to send / receive data, since the communication system is power on and thus would know if there is data being received or needs to be transmitted.

5. Claims 4, 10, 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712) in view of Wang et al (US 7,580,349) as applied to claims 1, 7, 13 and 18 above, and further in view of Vinayagam et al. (US 2009/0109998)

For claim 4, 10, and 16, Imajuku and Wang disclose all the claimed features as shown above.

Imajuku and Wang do not explicitly discuss the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one.

Vinayagam from the same or similar field of endeavor discloses the following:

For claim 4, 10, and 16, setting a maximum number of links in a link aggregate group (LAG) to one (see section 0024 "link aggregation…specify a known limit to maximum number of ports"; claim 10; It would have been obvious to set a maximum number of ports (i.e. links) for a link aggregation to a arbitrary number such as 1 (i.e. design choice)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku and Wang by using the above recited features, as taught by Vinayagam, in order to provide a self-configuring manner using IEEE 802.3ad Link Aggregation Control Protocol such that drawbacks and inefficiencies associated with the conventional manual configuration required when using IEEE 802.3ad Link Aggregation Control Protocol would be advantageous, desirable and useful (see Vinayagam section 0004-0007).

Claims 5, 6,11,12, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imajuku (US 2006/0256712) in view of Wang et al (US 7,580,349) as applied to claims 1, 7, 13 and 18 above, and further in view of Wills et al. (US 2009/0109998)

For claims 5, 6,11,12, 17, and 20 Imajuku and Wang discloses the claimed invention as described above.

Imajuku and Wang do not explicitly discuss the following:

For claim 5, 11, and 17, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP)

For claim 6, 12, changing at least one of a port priority value for a port used for the first downlink connection; and sending a message with the changed port key or port priority value to the dual- homed device.

For claim 20, the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

Wils from the same or similar field of endeavor discloses the following:

For claim 5, 11, and 17, Wils discloses wherein sending the message to the dual-homed device (see fig. 2) comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit… synchronization bit in the LACPDU to keep it low…out-of sync state"; section 0055, 0061).

For claim 6, 12, Wils discloses changing at least one of a port priority value for a port used for the first downlink connection (see section 0036-37; section 0051,

0058); and sending a message with the changed port priority value to the dual-homed device (see section 0036-37, section 0051, 0058; see fig. 2).
For claim 20, the message sent to the dual-homed device (see fig. 2) comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP) (see section 0043-47 "synchronization bit... synchronization bit in the LACPDU to keep it low...out-of sync state"; section 0055, 0061); and
the apparatus further comprises means for changing port priority value of a port used for the downlink connection (see section 0036-37, section 0051, 0058; see fig. 2) and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP (see section 0036-37, section 0051, 0058; see fig. 2).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify / combine the features of Imajuku and Wang by using the above recited features, as taught by Wils, in order to rovide a plurality of network devices as representing a single point device of the point-to-point protocol, such as the IEEE 802.3ad standard. The present invention makes it possible to have one or both of the points of the IEEE 802.3ad standard be multiple devices. The multiple devices of the present invention are configured to behave as a single point in such a way that the multiple devices still adhere to the 802.3ad standard. Thus the multi device point can be seamlessly connected to a conventional single device that supports the 802.3ad

specification (see Wis sections 0006-10)

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
US-5,835,696 A	11-1998	Hess, Gary C.	714/10
US-6,442,133 B2	08-2002	Owada, Junichi	370/219
US-2002/0167895 A1	11-2002	Zhu et al.	370/216
US-2003/0021226 A1	01-2003	Mor, Gal	370/223
US-2003/0161260 A1	08-2003	Murugan, Sundara	370/217
US-2003/0185225 A1	10-2003	Wirth et al.	370/419
US-2004/0001449 A1	01-2004	Rostron et al.	370/282
US-2005/0063395 A1	03-2005	Smith et al.	370/399
US-2005/0111350 A1	05-2005	Kano, Shinya	370/216
US-2005/0108401 A1	05-2005	Gonda, Rumi Sheryar	709/227
US-2006/0023630 A1	02-2006	Akiyama et al.	370/235
US-2007/0183347 A1	08-2007	Gu et al.	370/258
US-2007/0280103 A1	12-2007	Savage et al.	370/228
US-7,480,283 B1	01-2009	Sylvain, Dany D.	370/352
US-7,518,986 B1	04-2009	Chadalavada et al.	370/218

The references above show method of backup paths and link aggregation.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenan Cehic whose telephone number is (571) 270-3120. The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. 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.

/Kenan Cehic/
Examiner, Art Unit 2473

/Hanh Nguyen/

Primary Examiner, Art Unit 2473

Notice of References Cited	Application/Control No. 12/180,934	Applicant(s)/Patent Under Reexamination SALAM ET AL.	
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U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,835,696 A	11-1998	Hess, Gary C.	714/10
*	B	US-6,442,133 B2	08-2002	Owada, Junichi	370/219
*	C	US-2002/0167895 A1	11-2002	Zhu et al.	370/216
*	D	US-2003/0021226 A1	01-2003	Mor, Gal	370/223
*	E	US-2003/0161260 A1	08-2003	Murugan, Sundara	370/217
*	F	US-2003/0185225 A1	10-2003	Wirth et al.	370/419
*	G	US-2004/0001449 A1	01-2004	Rostron et al.	370/282
*	H	US-2004/0133693 A1	07-2004	Wils et al.	709/230
*	I	US-2005/0063395 A1	03-2005	Smith et al.	370/399
*	J	US-2005/0111350 A1	05-2005	Kano, Shinya	370/216
*	K	US-2005/0108401 A1	05-2005	Gonda, Rumi Sheryar	709/227
*	L	US-2006/0023630 A1	02-2006	Akiyama et al.	370/235
*	M	US-2006/0256712 A1	11-2006	Imajuku et al.	370/218

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
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NON-PATENT DOCUMENTS

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

Notice of References Cited	Application/Control No. 12/180,934	Applicant(s)/Patent Under Reexamination SALAM ET AL.	
	Examiner KENAN CEHIC	Art Unit 2473	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2007/0183347 A1	08-2007	Gu et al.	370/258
*	B	US-2007/0280103 A1	12-2007	Savage et al.	370/228
*	C	US-2008/0181196 A1	07-2008	Regan et al.	370/351
*	D	US-7,480,283 B1	01-2009	Sylvain, Dany D.	370/352
*	E	US-2009/0096592 A1	04-2009	WU et al.	340/310.12
*	F	US-2009/0109998 A1	04-2009	Vinayagam et al.	370/465
*	G	US-7,518,986 B1	04-2009	Chadalavada et al.	370/218
*	H	US-7,580,349 B1	08-2009	Wang et al.	370/230
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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	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
S3	4928	370/216-228.ccls. and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/14 15:33
S4	8	((SAMER) near2 (SALAM)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 15:36
S5	28	((ALI) near2 (SAJASSI)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S6	8	((SAMER) near2 (SALAM)).INV.	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S7	23	S5 not S6	US-PGPUB; USPAT	ADJ	ON	2010/02/14 19:36
S8	16150	(standby or backup) near3 switch$3 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 01:11
S9	3	(standby or backup) near3 switch$3 and (out of sync or "out_of_sync") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:12
S10	1	(standby or backup) near3 switch$3 and (inter chassis control channel or "interchassis control channel") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:15
S11	7332	(standby or backup) near3 switch$3 and (redundant or backup or failover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:16

S12	353	(standby or backup) and rdi and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 03:24
S13	257	(standby or backup or switchover) same ais and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 04:17
S14	26	(standby or backup or switchover) same ais and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and sonet [bsum]	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 04:20
S15	5	(standby or backup or switchover) same ais and (ais with downstream$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and sonet [bsum]	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 14:47
S16	537	activat$5 near6 (standby or backup or switchover) near2 (switch$2 or node$2 or router $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 15:08
S17	61	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/15 15:08

S18	1	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and ("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 16:38
S19	3	activat$5 near6 (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and ("dual-home" or "dual-homing" or dual hom$3) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 16:38
S20	33	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4) near6 (fault or failure or corrupt $3 or fail$3 or broken or disrupt $3 or error$4 or abnormal$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:12
S21	6	(activ$4 or primary) with ("p-ais" or ais) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:41

S22	10	(activ$4 or primary or working) with ("p-ais" or ais) with (standby or backup or switchover or switchover) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:41
S23	78	(decreas$5 or decrement$4 or low$5) near4 (priorit$5 or weight$5) with (failover$2 or "fail-over" or switch over or "switch-over") and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 19:58
S24	194	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:16
S25	14	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router $2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:16

S26	14	(activ$4 or primary) near2 (switch$2 or node$2 or router $2) with (notify$5 or inform$5 or signal$4 or message$4 or exchang$5) with (standby or backup or switchover or switchover) near2 (switch$2 or node$2 or router$2) and aps and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/16 20:17
S27	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/02/17 14:19
S28	1	S27 and failure notification	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:27
S29	1	S27 and (failure notification or switching operation or switching point$2)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:31
S30	0	S27 and embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:42
S31	0	S27 and Embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:43
S32	0	S27 and Embodiment	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:43
S33	0	S27 and "Embodiment"	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 14:44
S34	0	S27 and embodiment$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 15:32
S35	1	(inter chassis or inter-chassis) control channel$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 16:06

S36	229	control channel$2 with router$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:05
S37	15	(US-20090225661-$ or US-20060023630-$ or US-20050108401-$ or US-20070183347-$ or US-20050111350-$ or US-20030185225-$ or US-20030161260-$ or US-20030021226-$ or US-20040001449-$ or US-20020167895-$ or US-20070280103-$ or US-20060256712-$).did. or (US-7644317-$ or US-6442133-$ or US-5835696-$).did.	US-PGPUB; USPAT	ADJ	ON	2010/02/17 17:05
S38	2	S37 and chassis	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:05
S39	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/02/17 17:06
S40	1	S39 and switch	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:06
S41	10	control channel$2 with (router $2 or switch or switches) and chassis with (router$2 or switch or switches) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:13
S42	4361	control with (router$2 or switch or switches) and chassis with (router$2 or switch or switches) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:17
S43	3448	control with (router$2 or switch or switches) same chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:18

S44	1698	control with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:18
S45	346	control with (router$2 or switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 17:51
S46	53	control with chassis and (router $2 or switch or switches) with chassis and core network$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:16
S47	3	control channel$2 with switch$2 and (switch or switches) with chassis and core network$2 and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:19
S48	85	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and core	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:21
S49	203	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:22
S50	203	control$4 near3 channel$2 with switch$2 and (switch or switches) with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:22

S51	223	control$4 near3 channel$2 with (chassis or multi-chassis or switch$2) and (switch or switches) with (chassis or multi-chassis) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/17 18:24
S52	5	(brown near2 stephen).xa.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/02/22 18:07
S53	1	(US-20060256712-$).did.	US-PGPUB	ADJ	ON	2010/03/16 16:05
S54	1	S53 and failure$2	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:05
S55	1	S53 and backup	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:51
S56	1	S53 and activat$6	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 16:56
S57	1	S53 and activat$6 same failure notifi$8	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:03
S58	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:16
S59	1	(optical or sonet) with uplink same uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") and "370".clas.	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18
S60	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728") \	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18

S61	0	(optical or sonet) near2 uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:18
S62	5	(optical or sonet) with uplink same uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:25
S63	250	uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 17:37
S64	0	backup with uplink with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:01
S65	35	backup with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:01
S66	59	(backup or protect$5) near4 (edge$2 or gateway$2) and (edge$2 or gateway$2) with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:23
S67	45	(backup or back up) with (edge $2 or gateway$2) and (edge$2 or gateway$2) with core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:30

S68	97	(optical or sonet) with access network same core network and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 18:35
S69	101	control$4 near3 channel$2 with chassis and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 19:17
S70	6	"l1 active state" and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/16 19:55
S71	15760	(physical or layer "1") near5 (active) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:17
S72	0	(physical or layer "1") near5 (active) with ("not") near3 (send $4 or transmi$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:17
S73	19	(physical or layer "1") near5 (active) with (no) near3 (send $4 or transmi$5 or data) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:18
S74	22	(physical or layer "1" or first layer) near5 (active or operational) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:20

S75	10	(physical layer$2 or layer$2 "1" or first layer) near5 (active or operational) with (no or "not") near5 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:22
S76	5	(physical layer$2 or layer$2 "1" or first layer) with (always) near3 (active or operational) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:24
S77	194	(physical or layer "1" or first layer) with (active or operational or power) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:26
S78	29	(physical layer$2 or layer "1" or first layer) with (active or operational or power) with (no or "not") near3 (send$4 or transmi$5 or data or activity) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:26
S79	27	link aggregate group and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 08:49
S80	985	(one or "1" or single) with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:40

S81	14	(max$4 or availabl$4) near3 (one or "1" or single) with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:40
S82	500	(one or "1" or single) near2 link with link (aggregat$4 or trunk $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:45
S83	37	(max$4 or availabl$4) near3 (one or "1" or single) same link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:46
S84	8	set$5 near5 (max$4 or availabl $4 or number$2) near3 link$4 near4 (one or "1" or single) and (link or port$2) (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 09:51
S85	5	(max$4) number$2 with link (aggregat$4 or trunk$2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:00
S86	7	(max$4) number$2 with (link or port$3) (aggregat$4 or trunk $2) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:00
S87	34	(one or "1" or single) with link (aggregat$4 or trunk$2) same (standby or backup) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:06

S88	40	(one or "1" or single) with (link or port$2) (aggregat$4 or trunk $2) same (standby or backup) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 10:07
S89	3853	(max$5 or allowabl$5) with (aggreation group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:07
S90	34	(max$5 or allowabl$5) with (aggregat$5 group) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:08
S91	0	set$4 near2 (number of link$2) with (aggregat$5 group) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S92	0	set$4 near2 (number of link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S93	0	(number of link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S94	40	(number near4 link$2) with (aggregat$5 group or lag) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11

S95	137	(number near4 link$2) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:11
S96	173	(number near4 (link$2 or port $2)) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:16
S97	77	(number near4 (link$2 or port $2)) with (one or "1" or single) with (aggregat$5 group or lag or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:16
S98	0	(out of sync$5) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:43
S99	0	(out of sync$5) same (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:43
S100	39	(synchron$6) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:44
S101	48	(synchron$8) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 11:44

S102	19	(synchroniz$8 or sync) with (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:01
S103	0	(out of sync or "out_of_sync") with standby and (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:04
S104	0	(out of sync or "out_of_sync") and (lacp or link aggregat$5) and (@ad<="20080728" or @pd<="20080728" or @rlan<="20080728" or @rlad<="20080728" or @rlpn<="20080728")	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:05
S105	1	(US-20040133693-$).did.	US-PGPUB	ADJ	ON	2010/03/17 12:12
S106	1	S105 and sync$9	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:12
S107	1	S105 and (sync$12 or bit)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:16
S108	1	S105 and (key$4 or priorit$4)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	ADJ	ON	2010/03/17 12:21

3/17/2010 12:57:03 PM
C:\Documents and Settings\kcehic\Desktop\apps\12180934\934.wsp

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BIB DATA SHEET

CONFIRMATION NO. 1002

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/180,934	07/28/2008 RULE	455	2473	CPOL956171

APPLICANTS
SAMER M. SALAM, Vancouver, CANADA;
Ali Sajassi, San Ramon, CA;

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

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
08/05/2008

Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ Yes ☑ No	☐ Yes ☑ No	/KENAN CEHIC/ Examiner's Signature	☐ Initials	CANADA	6	20	4

ADDRESS
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582
UNITED STATES

TITLE
MULTI-CHASSIS ETHERNET LINK AGGREGATION

FILING FEE RECEIVED		
1240	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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

✓	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	03/17/2010									
	1	✓									
	2	✓									
	3	✓									
	4	✓									
	5	✓									
	6	✓									
	7	✓									
	8	✓									
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	14	✓									
	15	✓									
	16	✓									
	17	✓									
	18	✓									
	19	✓									
	20	✓									

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12180934	SALAM ET AL.
	Examiner	Art Unit
	KENAN CEHIC	2473

SEARCHED			
Class	Subclass	Date	Examiner
370	216-228	3/9/2010	kc

SEARCH NOTES		
Search Notes	Date	Examiner
Inventorship Search	3/9/2010	kc
East text search	3/9/2010	kc

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/180,934	07/28/2008	SAMER M. SALAM	CPOL956171

CONFIRMATION NO. 1002

62147
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

PUBLICATION NOTICE

OC000000039900842

Title:MULTI-CHASSIS ETHERNET LINK AGGREGATION

Publication No.US-2010-0020680-A1
Publication Date:01/28/2010

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.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

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Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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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
12/180,934	07/28/2008	2616	1240	CPOL956171	20	4

CONFIRMATION NO. 1002

CORRECTED FILING RECEIPT

62147
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

OC000000031699374

Date Mailed: 08/22/2008

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 submit a written request for a Filing Receipt Correction. 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)

SAMER M. SALAM, Vancouver, CANADA;
Ali Sajassi, San Ramon, CA;

Power of Attorney: The patent practitioners associated with Customer Number 62147

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 08/05/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/180,934**

Projected Publication Date: 01/28/2010

Non-Publication Request: No

Early Publication Request: No

Title

MULTI-CHASSIS ETHERNET LINK AGGREGATION

Preliminary Class

370

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.

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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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Salam et al.	§	Filed: July 28, 2008
	§	
	§	Group Art Unit: 2617
Serial No.: 12/180,934	§	
	§	Examiner: Unknown
Confirmation No.: 1002	§	

For: MULTI-CHASSIS ETHERNET LINK AGGREGATION

Office of Initial Patent Examination
Filing Receipts Corrections
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence and the documents referred to as attached therein are being facsimile transmitted to the Office of Initial Patent Examination, Filing Receipts Corrections, Commissioner for Patents, at 571-273-8300, or electronically transmitted via EFS-Web, on the date below.

August 18, 2008 /Randol W. Read, Reg. No. 43,876/
Date Randol W. Read

Dear Sir:

REQUEST FOR CORRECTION OF ERRORS ON FILING RECEIPT

The Filing Receipt for the above-referenced application contains an error regarding the Title. The Filing Receipt recites the Title as MULTI-CHASIS ETHERNET LINK AGGREGATION. It should read MULTI-CHASSIS ETHERNET LINK AGGREGATION.

Attached is a copy of the Filing Receipt with the above change noted thereon. Please correct this error or notify the Applicants of the reasons for denying the request.

Respectfully submitted,

/Randol W. Read, Reg. No. 43,876/

Randol W. Read
Registration No. 43,876
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicants

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UNITED STATES DEPARTMENT OF COMMERCE
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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
12/180,934	07/28/2008	2617	1240	CPOL956171	20	4

CONFIRMATION NO. 1002

62147
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

FILING RECEIPT

OC000000031385203

Date Mailed: 08/06/2008

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Applicant(s)

SAMER M. SALAM, Vancouver, CANADA;
Ali Sajassi, San Ramon, CA;

Power of Attorney: The patent practitioners associated with Customer Number 62147

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 08/05/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/180,934**

Projected Publication Date: 01/28/2010

Non-Publication Request: No

Early Publication Request: No

Title CHASSIS

MULTI-~~CHASIS~~ ETHERNET LINK AGGREGATION

Preliminary Class

455

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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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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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.

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NOT GRANTED

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Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Randol Read/Esther Marques
Filer Authorized By:	Randol Read
Attorney Docket Number:	CPOL956171
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1	Request for Corrected Filing Receipt	CPOL956171_ReqCorrFR.pdf	57981 80681026101010c217c8064259816b627263...a8a1f8	no	1

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2	Request for Corrected Filing Receipt	CPOL956171_MarkedupCopyFR.pdf	148656 5fab3883dc62a185a8fd0a0d646f192d84bad1be3	no	3

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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
12/180,934	07/28/2008	2617	1240	CPOL956171	20	4

CONFIRMATION NO. 1002

62147
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

FILING RECEIPT

OC000000031385203

Date Mailed: 08/06/2008

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 submit a written request for a Filing Receipt Correction. 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)

SAMER M. SALAM, Vancouver, CANADA;
Ali Sajassi, San Ramon, CA;

Power of Attorney: The patent practitioners associated with Customer Number 62147

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 08/05/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/180,934**

Projected Publication Date: 01/28/2010

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Early Publication Request: No

Title

MULTI-CHASIS ETHERNET LINK AGGREGATION

Preliminary Class

455

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As a below named inventor, I hereby declare that:

This declaration is of the following type:

- ☒ original
- ☐ divisional
- ☐ continuation
- ☐ continuation-in-part

INVENTORSHIP IDENTIFICATION

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:

MULTI-CHASIS ETHERNET LINK AGGREGATION

SPECIFICATION IDENTIFICATION

The specification of which:

- ☒ is attached hereto
- ☐ was filed on ____, under Serial No. _____ , executed on even date herewith; or
- ☐ Express Mail No.(as Serial No. not yet known) and was amended on _____ (if applicable)
- ☐ was described and claimed in PCT International Application No._____ filed on _____ and as amended under PCT Article 19 on _____.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

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, and which is material to the examination of this application; namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and

- ☐ In compliance with this duty there is attached an Information Disclosure Statement in accordance with 37 CFR §1.98.

PRIORITY CLAIM (35 U.S.C. §119)

I hereby claim foreign priority benefits under Title 35, United States Code, §119, of any provisional or foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below, and have also identified below any provisional or foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

☒ No such applications have been filed.

☐ Such applications have been filed as follows:

A. Prior foreign/PCT application(s) filed within 12 mos. (6 mos. for design) prior to this application, and any priority claims under 35 U.S.C. §119

Country/PCT	Application No	Date Filed	Priority Claimed
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

B. All foreign application(s), if any, filed more than 12 mos. (6 mos for design) prior to this U.S. application

Country:
Application No:
Filing date:

C. U.S. Provisional Application filed within 12 months prior to this application

Serial No.	Filing Date

PRIORITY CLAIM (35 U.S.C. §120)

I hereby claim the benefit under Title 35, United States Code, §120, of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information that is material to the examination of this application (namely, information where there is substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

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Serial No.	Filing Date	Status: Patented	Pending	Abandoned

Quicker Connections - Exhibit 2013
IPR2025-01088 - Page 309

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☒ Practitioners associated with the Customer Number: **62147**

☐ I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Randol W. Read Registration No. 43,876

Send correspondence to and direct telephone calls to:

☒ **Customer No.: 62147**

☒ Randol W. Read
Patterson & Sheridan, L.L.P.
713.623.4844

DECLARATION

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 Sec. 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.

Full name of **sole or first** inventor: **SAMER M. SALAM**

Inventor's signature: _____ Date: 21 July 2008

Residence: 1238 Melville St., #1501
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Country of Citizenship: Lebanon

Full name of **second** inventor: **ALI SAJASSI**

Inventor's signature: _____ Date: _____

Residence: 950 Winsford Court
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Post Office Address: Same as above.

Country of Citizenship: U.S.A.

(DECLARATION ENDS WITH THIS PAGE)

Atty. Dkt. No.: 1654.034129 (CPOL956171)

POWER OF ATTORNEY

☒ Practitioners associated with the Customer Number: **62147**

☐ I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

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Full name of **sole or first** inventor: **SAMER M. SALAM**

Inventor's signature:_____ Date:_____
Residence: 1238 Melville St., #1501
Vancouver, BC V6E 4N2, Canada

Post Office Address: Same as above.
Country of Citizenship: Lebanon

Full name of **second** inventor: **ALI SAJASSI**

Inventor's signature: _____ Date: 7/25/08
Residence: 950 Winsford Court
San Ramon, CA 94583

Post Office Address: Same as above.
Country of Citizenship: U.S.A.

(DECLARATION ENDS WITH THIS PAGE)

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	MULTI-CHASIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Filer:	Randol Read/Esther Marques
Attorney Docket Number:	CPOL956171
Filed as Large Entity	

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	310	310
Utility Search Fee	1111	1	510	510
Utility Examination Fee	1311	1	210	210
Pages:				
Claims:				
Independent claims in excess of 3	1201	1	210	210
Miscellaneous-Filing:				
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Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	1240

Electronic Acknowledgement Receipt	
EFS ID:	3687459
Application Number:	12180934
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Confirmation Number:	1002
Title of Invention:	MULTI-CHASIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Randol Read/Esther Marques
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Attorney Docket Number:	CPOL956171
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Payment was successfully received in RAM	$1240
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Deposit Account	200782
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		CPOL956171_PatApp.pdf	97658 d939b28f75f89f19d2d0e5921e653671c67900dd	yes	16
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	11	
	Claims		12	15	
	Abstract		16	16	
Warnings:					
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2	Drawings-only black and white line drawings	CPOL956171_Drawings.pdf	430962 6483b51637446204f5b9cc6cb7e288fdf5f00d83	no	6
Warnings:					
Information:					
3	Oath or Declaration filed	CPOL956171_Declaration.pdf	142772 323daac34b16a61550da05ed348a8fdf08131ce6	no	4
Warnings:					
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4	Power of Attorney	CPOL956171_PowerofAttorney.pdf	142772 323daac34b16a61550da05ed348a8fdf08131ce6	no	4
Warnings:					
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5	Fee Worksheet (PTO-06)	fee-info.pdf	8479 0f9ee7c9f33150d661bb7fb889104d68c032cf	no	2
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MULTI-CHASIS ETHERNET LINK AGGREGATION

TECHNICAL FIELD

[0001] Embodiments of the present disclosure generally relate to network traffic management.

BACKGROUND

[0002] Service providers often seek to maximize their network up-time and service availability by employing link and node redundancy schemes. In the context of carrier Ethernet, a typical topology is to have an access node (for example Digital Subscriber Line Access Multiplexer (DSLAM)) or a customer edge (CE) device "dual-homed" meaning it is attached to two aggregation switches. This topology provides port, link and node level redundancy for the dual-homed device (DHD).

[0003] It is often desirable to prevent Layer 2 forwarding loops in a network using some type of mechanism, such as the Spanning-Tree Protocol (STP). However, in some situations, a DHD is either not capable of running STP or the use of STP does not efficiently scale. For example, if a large number of DHDs are connected to the same provider edge (PE) device pair, the use of STP may not scale efficiently. For these situations, it is desirable to implement a redundancy/resiliency mechanism that is not based on STP. Ethernet Link Aggregation (LAG) schemes using a Link Aggregation Control Protocol (LACP) defined in IEEE Standard 802.3-2005 is one such mechanism.

[0004] Unfortunately, link aggregation using LACP as defined in IEEE standard 802.3-2005 only works between two back-to-back nodes and is not an option for DHDs connected to a pair of aggregation switches.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] So that the manner in which the above recited features of the present disclosure can be understood in detail, a more particular description of the disclosure, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate only typical embodiments of this disclosure and are therefore not to be considered limiting of its scope, for the disclosure may admit to other equally effective embodiments.

[0006] FIG. 1 illustrates an example network topology in accordance with some embodiments of the present disclosure.

[0007] FIG. 2 illustrates a flow diagram of example operations in accordance with some embodiments of the present disclosure.

[0008] FIGs. 3A-3D illustrate a block diagram of example operations in accordance with some embodiments of the present disclosure.

DESCRIPTION OF EXAMPLE EMBODIMENTS

OVERVIEW

[0009] In one embodiment a method is provided for forwarding traffic through a standby device in the event of an uplink connection failure. The method generally includes forwarding traffic received on a first downlink connection with a dual-homed device to an uplink connection with a network core, detecting a failure on the uplink connection with the network core, and in response to detecting the failure, notifying a standby device of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

[0010] One embodiment provides a network apparatus. The network apparatus generally includes a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core, and logic for detecting a failure on the uplink connection with the network core and, in response, notifying a standby device of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

[0011] One embodiment provides a point of attachment complex. The point of attachment complex generally includes a first switch having a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to a network core, and logic for detecting a failure on the uplink connection with the network core and, in response, notifying a second switch of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection with the second switch and a second switch having a downlink interface for establishing a downlink connection with the dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to the network core, and logic configured to receive notification of the uplink failure from the first switch and, in response, optionally enable the second switch's uplink connection to the core if previously disabled, as well as communicate with the dual-homed device to enable forwarding traffic from the dual-homed device to the network core through the second switch.

[0012] One embodiment provides a network apparatus. The network apparatus generally includes means for establishing a downlink connection with a dual-homed device, means for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core, and means for detecting a failure on the uplink connection with the network core and, in response, notifying a standby device of the failure and sending a message to the dual-homed device to

trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

[0013] The present disclosure generally provides techniques for link aggregation that provide for efficient failover to a redundant device in the event of an uplink failure. The techniques may be utilized, for example, in applications where a device is dual homed to a pair of aggregation switches with uplink connections to a network core to provide redundancy.

[0014] As used herein, the terms uplink and downlink are relative terms that describe connections between devices, but do not imply any particular physical location of the devices. In particular example embodiments described herein, the term downlink refers to a connection between a dual-homed device and a point of access (POA) device to a network core, such as the Internet. The term uplink, on the other hand, generally refers to a connection between the POA and the network core. The dual-homed device is so named as it may maintain two (dual) downlink connections with two different POA devices (each having an uplink connection to the network core) for redundancy.

[0015] By running a modified version of a link aggregation control protocol (LACP) on the aggregation switches, the multi-chassis "complex" of aggregation switches may appear as a single device to the dual-homed device. An inter-chassis control channel (ICC) between the aggregation switches allows for state synchronization between an active aggregation switch and a standby and failover notification if an uplink or downlink failure is detected for the active aggregation switch, while preserving bandwidth.

[0016] In some embodiments, the aggregation switches may be housed in a single chassis. Accordingly, the ICC between the aggregation switches may be an intra-chassis control channel allowing for state synchronization between the active aggregation switch and the standby switch and failover notification if an uplink or downlink failure is detected for the active aggregation switch.

[0017] As a result of running a modified version of a link aggregation control protocol on the aggregation switches, a link between the DHD and the standby aggregation switch may be kept in a "hot standby" state, allowing for an efficient failover with reduced latency when compared with conventional failover processes that require a redundant link to be brought up. The aggregation switch experiencing the failure may utilize dynamic management of link priority or membership in a link aggregation group (LAG) in a unique manner by decreasing the link priority or removing a link from a LAG member set to trigger a failover process at the DHD.

[0018] For example, when two LACP enabled devices negotiate a link, they may exchange LACP data units (LACPDU) containing device setting information. During this negotiation, the DHD may receive LACPDUs from POA1 and POA2 on ports with the same port key and create a link aggregation group (LAG). By setting a POA complex maximum allowable links per group to one, however, a port for a standby POA device may be kept in standby mode (*e.g.*, by assigning a lower port priority value to that port than a port on an active POA device). If an uplink failure is detected on the active device, however, the active device may change its port key or port priority value, causing that port to be removed from the group or go into standby mode, making room in the group for the port on the standby POA. When the DHD becomes aware of this port priority value or port key change, it may automatically failover and establishes communication with the standby device.

[0019] In the following, reference is made to embodiments of the disclosure. However, it should be understood that the present disclosure is not limited to specific described embodiments. Instead, any combination of the following features and elements, whether related to different embodiments or not, is contemplated to implement and practice the techniques presented herein. Furthermore, in various embodiments, the disclosure provides numerous advantages over the prior art. However, although particular embodiments may achieve advantages over other possible solutions and/or over the prior art, whether or not a particular advantage is achieved by a given embodiment is not limiting of the present disclosure. Thus, the

following aspects, features, embodiments and advantages are merely illustrative and are not considered elements or limitations of the appended claims except where explicitly recited in a claim(s).

AN EXEMPLARY NETWORK ARCHITECTURE

[0020] Figure 1 is a block diagram depicting a network 100, in which embodiments of the present disclosure may be utilized. As illustrated, the network 100 may contain a DHD 110 (for example a DSLAM, CE device, or such device) for sending data traffic to a network (*e.g.*, service provider) core 130 via a point of attachment (POA) complex 120.

[0021] For some embodiments, the service provider core 130 may be a Multiprotocol Label Switching (MPLS) network that forwards internet protocol (IP) traffic using labels. These labels may instruct the routers and the switches in the service provider core 130 where to forward packets as they are routed between PE routers en route to DHDs 110 based on pre-established IP routing information. The core network may also employ MPLS pseudowires to transfer Layer 2 frames en route to DHDs.

[0022] The POA complex 120 may provide multiple links of a link aggregation group (LAG) terminate on two different PE nodes (*i.e.*, PE1 and PE2). These PE nodes are commonly referred to as Aggregation Switches. Having multiple links of a LAG terminate on different PE nodes provides redundancy, not only across port and link failures, but also across a single PE node failure.

[0023] As illustrated, PE1 and PE2 may be connected, via an inter-chassis control channel (ICC) 124. The ICC 124 may be implemented as a data bus or as a logical connection over a packet switched network used to transfer commands between the PE devices, for example, allowing the synchronization of state information, notification of link (uplink and downlink) failures, and the like. The ICC 124 may consume much less bandwidth than an inter-chassis data channel which forwards not

only control but also data traffic and is used to provide redundant paths in conventional multi-chassis complexes.

EXAMPLE LINK AGGREGATION OPERATIONS

[0024] For some embodiments, the ICC 124 may be utilized to perform operations that allow the PE devices within the complex to implement a modified (enhanced) version of a link aggregation control protocol. For example, while the DHD may implement a standard link aggregation protocol (such as LACP), the PE devices may implement an enhanced version of such a protocol that allows the pair of PE devices to appear as a single device, while still providing redundancy and efficient failover, as described herein.

[0025] FIG. 2 illustrates example operations 200 that may be performed to configure and enable efficient failover from an active PE device to a standby PE device, according to one embodiment, for example, in the event that the active PE device becomes isolated from the network core due to an uplink failure. The example operations 200 include configuration operations 202-204 as well as operations 206-216 that may be performed by an active PE device to cause a failover to the standby PE device.

[0026] For the following example embodiments, the operations 200 assume that the DHD device implements a standard link aggregation control protocol, such as IEEE standard 802.3-2005 LACP, while the PE devices on the POA complex may be extended such that it runs on two chassis (*i.e.,* PE1 and PE2) while giving the DHD the illusion that it is connected to a single device.

[0027] The configuration operations may be performed in a manner that results in one of the PE devices (PE1 in this example) initially serving as an active device used to forward traffic from the DHD to the core, while the other PE device (PE2 in this example) initially acts as a standby device. Such a configuration in which the DHD allows a LAG to have two or more links while the PE nodes limit a LAG to a single

link may force one or more of the links from the DHD to the POA complex to enter and maintain a hot/standby operational state, allowing a faster failover than if the redundant link needed to be brought up.

[0028] The operations begin, at 202, with the first and second PE nodes being configured such that the maximum number of links in a link aggregation group (LAG) is 1. At 204, the POA complex is configured so that PE1 is in active mode and PE2 is in a standby mode. For example, assuming a higher priority is given to PE1 downlink L1 than PE2 downlink L2, a maximum number of one link per LAG forces PE1 to be used as an active device and PE2 to become a standby device.

[0029] For some embodiments, during configuration, the DHD may receive LACPDUs from both POA1 and POA2 over links L1 and L2, respectively, with the same port key identified. In response, the DHD may form a logical link by aggregating these links into a link aggregation group (LAG). From the POA complex, however, by setting the maximum number of links in a group to one, only one of the POA ports may be allowed to join the group. In this manner, the techniques provided herein may utilize LACP dynamic key management or port priority in a unique manner that is different than its conventional use. For example, if an uplink failure is detected on the active device, the active device may change its port key or port priority value on the downlink to the DHD, causing that port to be removed from the group or causing it to go into standby mode, making room in the group (that was limited to one member) for the port on the standby device. In order to prompt a failover to the standby link by changing the port priority value of the active device, the new port priority value assumed by the active device should be lower than the port priority value configured on the standby device. When the DHD becomes aware of this port key or port priority change, it may automatically remove that port from the LAG and establish communication with the standby device as will be described in greater detail below.

[0030] At 206, DHD and PE1 synchronize link state information in preparation of forwarding traffic. For example, the DHD and PE1 may exchange a type of control message (generally referred to as IN_SYNC LACP messages), effectively synchronizing the DHD and PE1. Once synchronized, at 208, the DHD begins to forward DHD traffic to the core through link L1 and PE1 uplinks UL1.

[0031] The following description makes use of various operating states of links that may be defined by a standard. For example, the IEEE standard 802.3-2005 LACP standard defines COLLECTING-DISTRIBUTING, WAITING, DETACHED, and ATTACHED states that indicate certain types of communication may or may not be possible on a corresponding link.

[0032] FIG. 3A illustrates this initial "steady state" operation, with PE1 active and PE2 in standby. As illustrated in state table 300A, from the DHD perspective, link L1 may be in a COLLECTING-DISTRIBUTING state, while L2 is in an ATTACHED State. From the PE device perspective, L1 is also in a COLLECTING-DISTRIBUTING state, however, L2 is in a WAITING state. As illustrated, traffic from the DHD is forwarded through PE1 to the core.

[0033] During operation, at 210, a periodic "heartbeat" message may be sent on the ICC from PE1 to PE2. This heartbeat may allow synchronization of state information between PE1 and PE2 and allow for notification of a link failure or detection of PE node failure. State synchronization may also be achieved via an asynchronous event-triggered notification, in addition to or in lieu of a periodic message. As long as no failures are detected (at 212), these "steady-state" operations may be repeated.

[0034] However, if PE1 detects an uplink failure, as illustrated in FIG. 3B, PE1 informs PE2 of the uplink failure, at 214. The notification may take the form of a trigger failover message 328 sent along the ICC. Further, PE1 may dynamically change its actor port key or port priority value in response to an uplink failure. At

216, PE1 may send out a LACP message 314 over L1, transmitting its OUT_OF_SYNC status as well as its new actor port key or port priority value.

[0035] In response to receiving the trigger failover message 328, PE2 may activate its uplink to the core, UL2. While shown as sequential steps in the flow diagram of FIG. 2, for some embodiments, the transmission of ICC message 328 and LACP message 314 may happen essentially simultaneously. The dynamic implementation and transmission of a new actor port key or port priority value by PE1 excludes the PE node and corresponding link (*i.e.*, L1) from the LAG or forces L1 into a standby mode. As a result, the DHD discontinues forwarding traffic to the core through L1 and PE1.

[0036] Instead, the DHD may default to using the initially lower priority PE node (*i.e.*, PE2) and corresponding link L2, as it is the highest priority node with the correct actor port key. Then, the DHD and PE2 may exchange IN_SYNC LACP messages 316, effectively synchronizing the DHD and PE2, as illustrated in FIG. 3C. After synchronizing with the DHD, PE2 becomes the active PE node and the DHD begin forwarding DHD traffic to the core through L2, PE2 and UL2.

[0037] FIG 3D illustrates the system after a failover, in a second steady state with PE2 as the active node. As illustrated in state table 300D, the DHD, looking at the POA complex 120, may see link L1 in a DETACHED state in which L1 is not selected and OUT_OF_SYNC. While, the DHD may see link L2 in a COLLECTING-DISTRIBUTING state in which L2 is selected and IN_SYNC. From the POA complex 120, looking at the DHD, PE1 may see link L1 in a DETACHED state in which L1 is not selected and OUT_OF_SYNC and PE2 may see link L2 in a COLLECTING-DISTRIBUTING state in which L2 is selected and IN_SYNC.

[0038] It should be noted that after the DHD receives LACP message indicating PE1 is OUT_OF_SYNC and has a new actor port key or port priority value, it discontinues forwarding traffic to the core through L1. However, link L1 remains operational at layer 1, connecting the DHD to PE1. Maintaining link L1 operational at

layer 1 despite the failure of UL1 may allow a quicker transition from PE2 to PE1, for example, if the failure of UL1 is corrected.

[0039] Additionally, if the active device changes the port priority value on L1 such that it is lower than L2, then the DHD, looking at the POA complex 120, may see link L1 in an ATTACHED state in which L1 is selected and IN_SYNC. While, the DHD may see link L2 in a COLLECTING-DISTRIBUTING state in which L2 is selected and IN_SYNC. From the POA complex 120, looking at the DHD, PE1 may see link L1 in a WAITING state in which L1 is in standby mode and OUT_OF_SYNC and PE2 may see link L2 in a COLLECTING-DISTRIBUTING state in which L2 is selected and IN_SYNC.

[0040] While a relatively simple example is described above, with a single DHD linked to a single POA complex, the techniques described herein may be utilized in more complex applications. For some embodiments, more than one DHD device may be linked to both multiple PE nodes of a single POA complex. The additional DHD devices may be configured such that during normal steady state operation, one PE node is in an active state, while another is in a standby state.

[0041] For various reasons, such as load balancing, one PE node may be in an active mode with respect to one of the attached DHDs and in a standby mode with respect to a different DHD. Further, the techniques provided herein may be utilized for a variety of different network services. For example, the failover techniques may be applied for native Ethernet, Virtual private LAN service (VPLS), and Virtual private wire service VPWS, and combinations of different services.

[0042] While the foregoing is directed to embodiments of the present disclosure, other and further embodiments of the disclosure may be devised without departing from the basic scope thereof, and the scope thereof is determined by the claims that follow.

What is claimed is:

1. A method comprising:

forwarding traffic received on a first downlink connection with a dual-homed device to an uplink connection with a network core;

detecting a failure on the uplink connection with the network core; and

in response to detecting the failure, notifying a standby device of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device.

2. The method of claim 1, wherein notifying the standby device comprises sending a failure message to the standby device via an inter-chassis control channel.

3. The method of claim 1, further comprising, maintaining the first downlink connection in an L1 active state, while preventing traffic forwarding on the first downlink connection, after sending the message to the dual-homed device.

4. The method of claim 1, further comprising setting a maximum number of links in a link aggregate group (LAG) to one.

5. The method of claim 1, wherein sending the message to the dual-homed device comprises sending an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

6. The method of claim 5, further comprising:

changing at least one of a port key and a port priority value for a port used for the first downlink connection; and

sending a message with the changed port key or port priority value to the dual-homed device.

7. An apparatus, comprising:

a downlink interface for establishing a downlink connection with a dual-homed device;

an uplink interface for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

logic for detecting a failure on the uplink connection with the network core and, in response, notifying a standby device of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device.

8. The apparatus of claim 7, wherein the logic is configured to notify the standby device of the uplink connection failure via an inter-chassis control channel.

9. The apparatus of claim 7, wherein the downlink connection remains in an L1 active state, with traffic forwarding prevented, after sending the message to the dual-homed device.

10. The apparatus of claim 7, configured such that a maximum number of links in a link aggregate group (LAG) is one.

11. The apparatus of claim 10, wherein the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

12. The apparatus of claim 11, further comprising logic for changing a port key or port priority value of a port used for the first downlink connection and sending the changed port key or port priority value to the dual-homed device, in an effort to trigger the dual homed device to begin forwarding traffic to the network core via a second downlink connection with the standby device.

13. An apparatus, comprising:

a first switch having a downlink interface for establishing a downlink connection with a dual-homed device, an uplink interface for forwarding traffic received from the dual-homed device on the downlink interface to a network core, and logic, wherein the logic is configured to detect a failure on the uplink connection with the network core, notify a second switch of the failure on the uplink connection, and send a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a downlink connection between the second switch and the dual-homed device; and

a second switch having a downlink interface for establishing a downlink connection with the dual-homed device, an uplink interface for forwarding traffic from the dual-homed device to the network core, and logic, wherein the logic is configured to receive notification of the uplink failure from the first switch and, in response to receiving notification of the uplink failure, enable an uplink connection between the second switch and the network core if previously disabled, and communicate with the dual-homed device to prompt the dual-homed device to begin forwarding traffic from the dual-homed device to the network core via the second switch.

14. The apparatus of claim 13, further comprising: a control channel between the first and second switches for notifying the second switch of the uplink connection failure.

15. The apparatus of claim 13, wherein the downlink connection of the first switch remains in an L1 active state, with traffic forwarding prevented, after the sending of the message to the dual-homed device.

16. The apparatus of claim 13, wherein the first and second switches are configured such that a maximum number of links in a link aggregate group (LAG) is one.

17. The apparatus of claim 16, wherein the message sent to the dual-homed device by the first switch comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP).

18. An apparatus, comprising:

means for establishing a downlink connection with a dual-homed device;

means for establishing an uplink connection with a network core to forward traffic from the dual-homed device to the network core; and

means for detecting a failure on the uplink connection with the network core and, in response, notifying a standby device of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the dual-homed device and the standby device.

19. The apparatus of claim 18, further comprising: means for notifying the standby device of the uplink connection failure via a chassis control channel.

20. The apparatus of claim 18, wherein:

the message sent to the dual-homed device comprises an OUT_OF_SYNC message compliant with a link aggregate control protocol (LACP); and

the apparatus further comprises means for changing a port key or port priority value of a port used for the downlink connection and for sending the changed port key or port priority value to the dual-homed device in a message compliant with the LACP.

ABSTRACT

In one embodiment a method is provided for forwarding traffic through a standby device in the event of an uplink connection failure. The method generally includes forwarding traffic received on a first downlink connection with a dual-homed device to an uplink connection with a network core, detecting a failure on the uplink connection with the network core, and in response to detecting the failure, notifying a standby device of the failure and sending a message to the dual-homed device to trigger the dual-homed device to begin forwarding traffic to the network core via a second downlink connection between the standby device and the dual-homed device.

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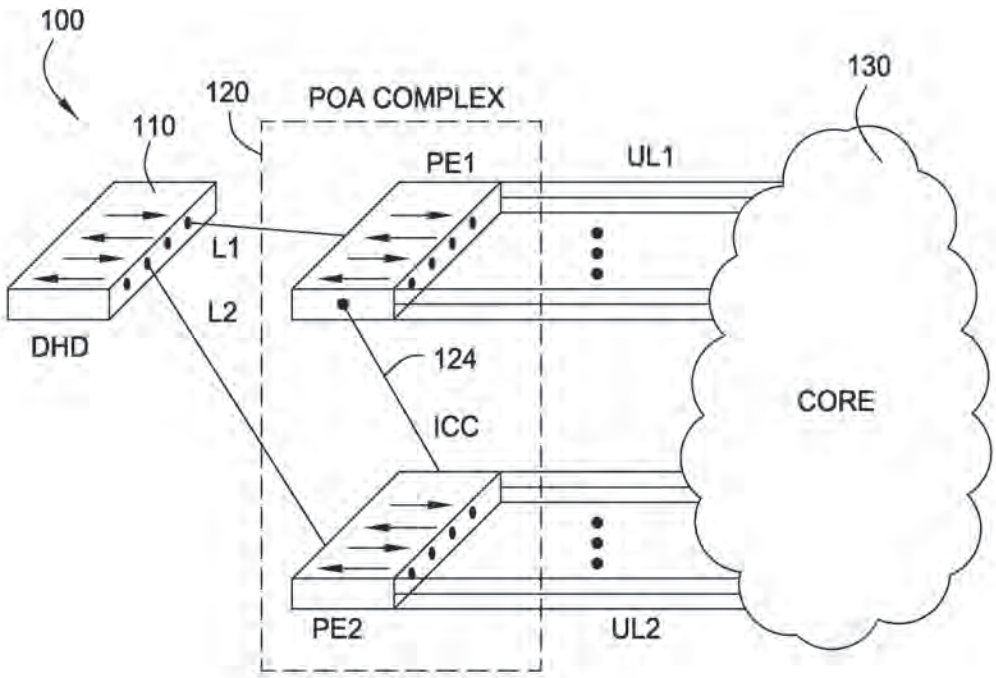

100
120
POA COMPLEX
130
110
PE1
UL1
L1
L2
DHD
124
ICC
CORE
PE2
UL2

FIG. 1

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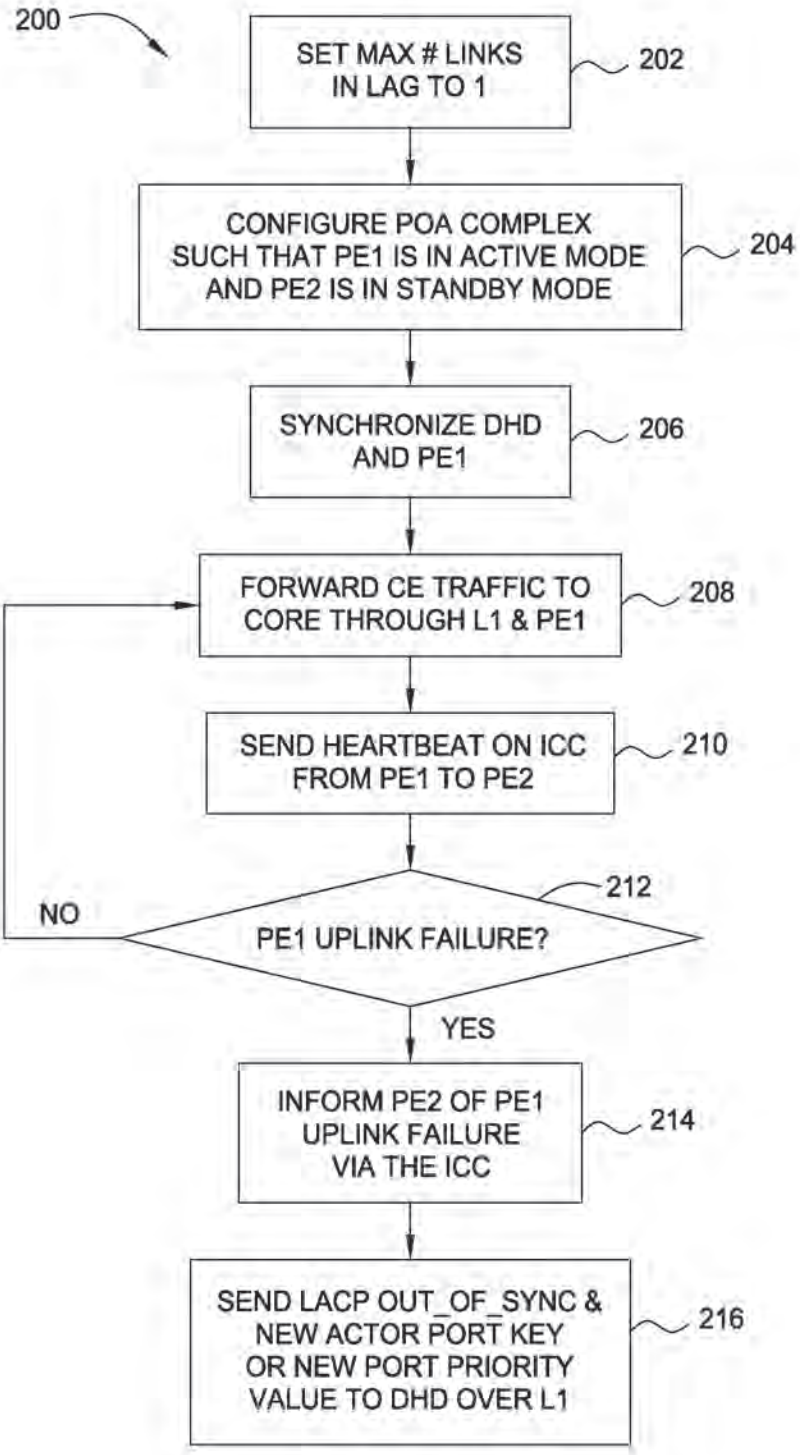
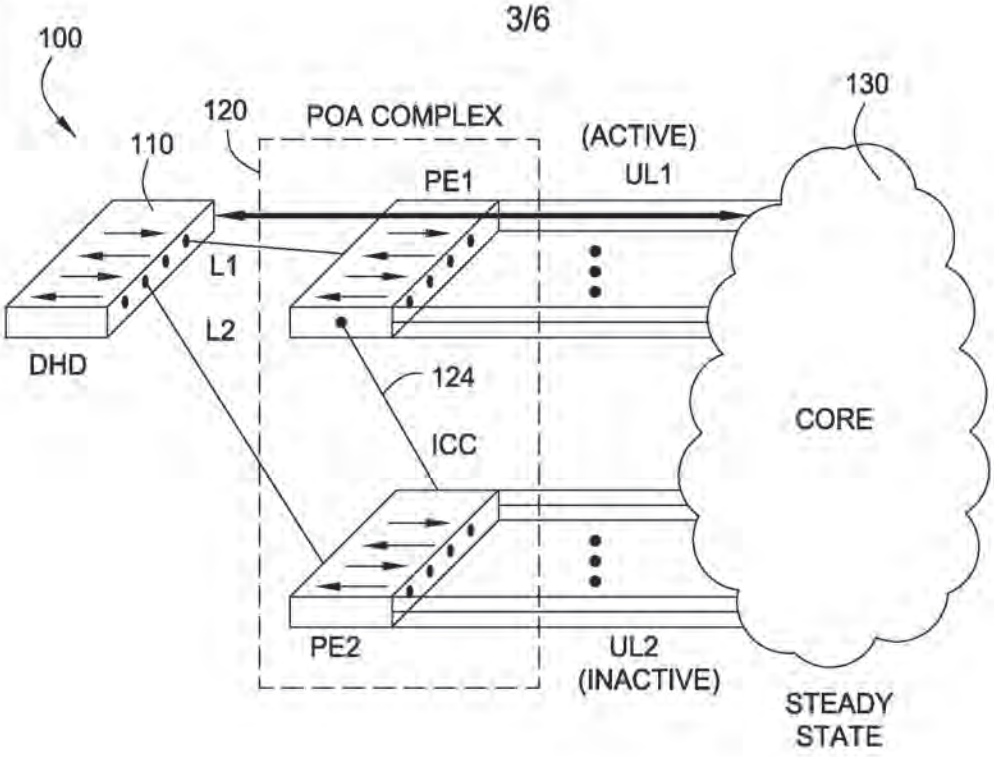

200
SET MAX # LINKS IN LAG TO 1
202
CONFIGURE POA COMPLEX SUCH THAT PE1 IS IN ACTIVE MODE AND PE2 IS IN STANDBY MODE
204
SYNCHRONIZE DHD AND PE1
206
FORWARD CE TRAFFIC TO CORE THROUGH L1 & PE1
208
SEND HEARTBEAT ON ICC FROM PE1 TO PE2
210
212
NO
PE1 UPLINK FAILURE?
YES
INFORM PE2 OF PE1 UPLINK FAILURE VIA THE ICC
214
SEND LACP OUT_OF_SYNC & NEW ACTOR PORT KEY OR NEW PORT PRIORITY VALUE TO DHD OVER L1
216

FIG. 2

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300A

LINK	LACP STATE
DHD: L1	COLLECTING - DISTRIBUTING (SELECTED, IN_SYNC)
L2	ATTACHED (SELECTED, IN_SYNC)
PE: L1	COLLECTING - DISTRIBUTING (SELECTED, IN_SYNC)
L2	WAITING (STANDBY, OUT_OF_SYNC)

FIG. 3A

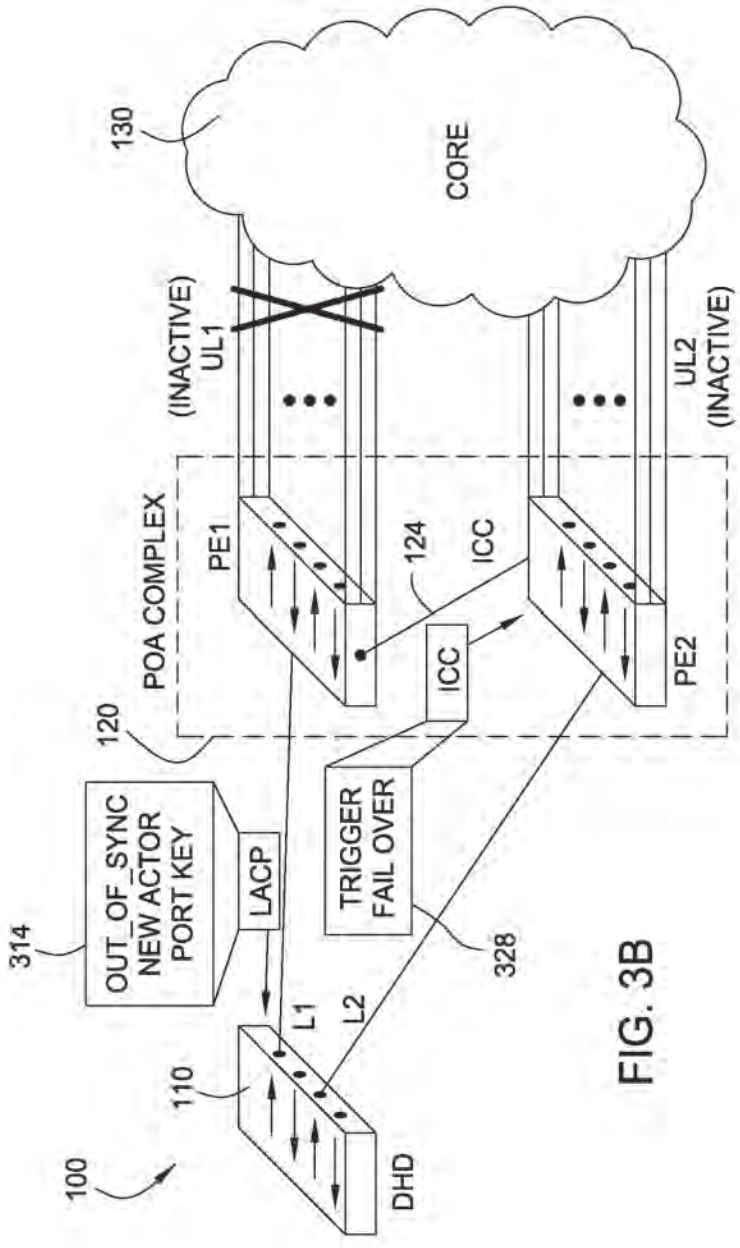

130
CORE
(INACTIVE)
UL1
UL2
(INACTIVE)
POA COMPLEX
PE1
PE2
124
ICC
ICC
120
OUT_OF_SYNC
NEW ACTOR
PORT KEY
LACP
TRIGGER
FAIL OVER
314
328
L1
L2
110
100
DHD

FIG. 3B

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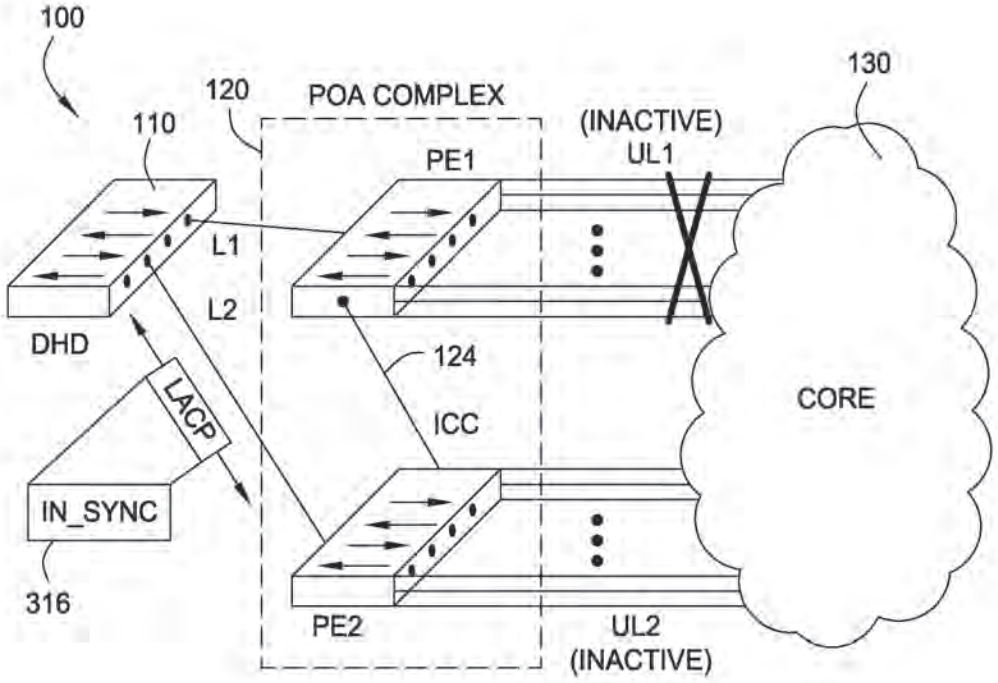
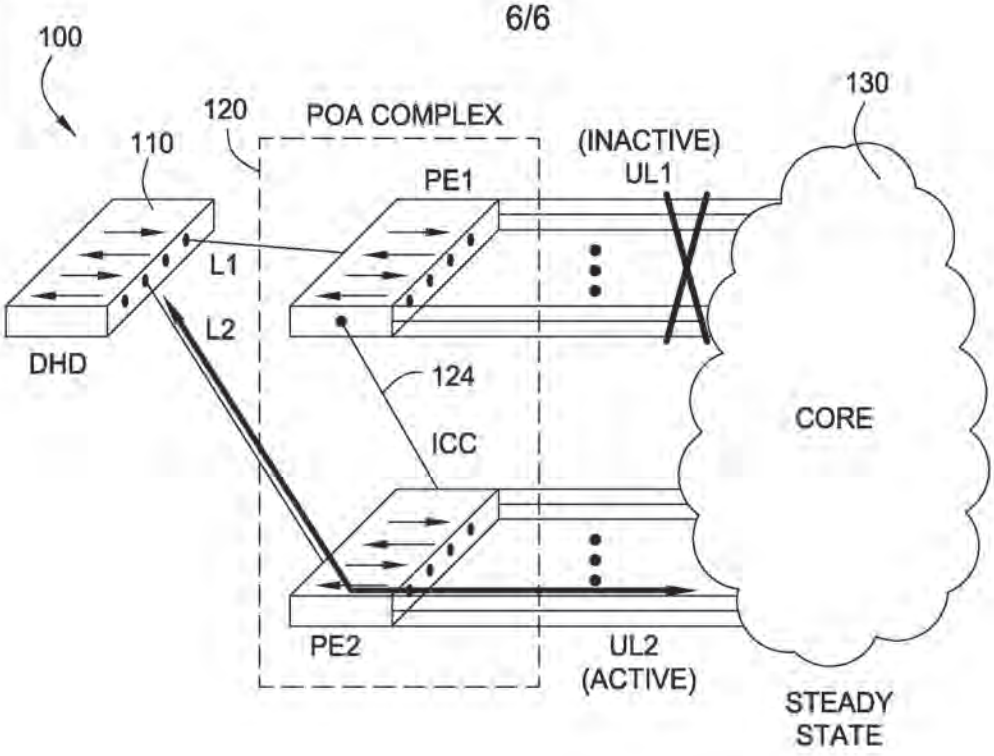

100
120
POA COMPLEX
110
130
(INACTIVE)
UL1
PE1
L1
L2
DHD
124
ICC
CORE
LACP
IN_SYNC
316
PE2
UL2
(INACTIVE)

FIG. 3C

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LINK	LACP STATE
DHD: L1	DETACHED (NOT SELECTED, OUT_OF_SYNC)
L2	COLLECTING - DISTRIBUTING (SELECTED, IN_SYNC)
PE: L1	DETACHED (NOT SELECTED, OUT_OF_SYNC)
L2	COLLECTING - DISTRIBUTING (SELECTED, IN_SYNC)

FIG. 3D

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

This declaration is of the following type:

- ☒ original
- ☐ divisional
- ☐ continuation
- ☐ continuation-in-part

INVENTORSHIP IDENTIFICATION

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:

MULTI-CHASIS ETHERNET LINK AGGREGATION

SPECIFICATION IDENTIFICATION

The specification of which:

- ☒ is attached hereto
- ☐ was filed on ____, under Serial No. _____ , executed on even date herewith; or
- ☐ Express Mail No.(as Serial No. not yet known) and was amended on _____ (if applicable)
- ☐ was described and claimed in PCT International Application No._____ filed on _____ and as amended under PCT Article 19 on _____.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

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, and which is material to the examination of this application; namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and

- ☐ In compliance with this duty there is attached an Information Disclosure Statement in accordance with 37 CFR §1.98.

PRIORITY CLAIM (35 U.S.C. §119)

I hereby claim foreign priority benefits under Title 35, United States Code, §119, of any provisional or foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below, and have also identified below any provisional or foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

☒ No such applications have been filed.

☐ Such applications have been filed as follows:

A. Prior foreign/PCT application(s) filed within 12 mos. (6 mos. for design) prior to this application, and any priority claims under 35 U.S.C. §119

Country/PCT	Application No	Date Filed	Priority Claimed
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

B. All foreign application(s), if any, filed more than 12 mos. (6 mos for design) prior to this U.S. application

Country:
Application No:
Filing date:

C. U.S. Provisional Application filed within 12 months prior to this application

Serial No.	Filing Date

PRIORITY CLAIM (35 U.S.C. §120)

I hereby claim the benefit under Title 35, United States Code, §120, of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information that is material to the examination of this application (namely, information where there is substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

☒ No such applications have been filed
☐ Such applications have been filed, as follows:

Serial No.	Filing Date	Status: Patented	Pending	Abandoned

POWER OF ATTORNEY

☒ Practitioners associated with the Customer Number: **62147**

☐ I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Randol W. Read Registration No. 43,876

Send correspondence to and direct telephone calls to:

☒ **Customer No.: 62147**

☒ Randol W. Read
Patterson & Sheridan, L.L.P.
713.623.4844

DECLARATION

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 Sec. 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.

Full name of **sole or first** inventor: **SAMER M. SALAM**

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Country of Citizenship: Lebanon

Full name of **second** inventor: **ALI SAJASSI**

Inventor's signature: _____ Date: _____

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San Ramon, CA 94583

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Country of Citizenship: U.S.A.

(DECLARATION ENDS WITH THIS PAGE)

Atty. Dkt. No.: 1654.034129 (CPOL956171)

POWER OF ATTORNEY

☒ Practitioners associated with the Customer Number: **62147**

☐ I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

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Full name of **sole or first** inventor: **SAMER M. SALAM**

Inventor's signature:_____ Date:_____
Residence: 1238 Melville St., #1501
Vancouver, BC V6E 4N2, Canada

Post Office Address: Same as above.
Country of Citizenship: Lebanon

Full name of **second** inventor: **ALI SAJASSI**

Inventor's signature: _____ Date: 7/25/08
Residence: 950 Winsford Court
San Ramon, CA 94583

Post Office Address: Same as above.
Country of Citizenship: U.S.A.

(DECLARATION ENDS WITH THIS PAGE)

Electronic Acknowledgement Receipt	
EFS ID:	3687459
Application Number:	12180934
International Application Number:	
Confirmation Number:	1002
Title of Invention:	MULTI-CHASIS ETHERNET LINK AGGREGATION
First Named Inventor/Applicant Name:	SAMER M. SALAM
Customer Number:	62147
Filer:	Randol Read/Esther Marques
Filer Authorized By:	Randol Read
Attorney Docket Number:	CPOL956171
Receipt Date:	28-JUL-2008
Filing Date:	
Time Stamp:	16:13:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1240
RAM confirmation Number	1550
Deposit Account	200782
Authorized User	READ,RANDOL W.

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)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		CPOL956171_PatApp.pdf	97658 d939b28f75f89f19d2d0e5921e653671c67900dd	yes	16
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	11	
	Claims		12	15	
	Abstract		16	16	
Warnings:					
Information:					
2	Drawings-only black and white line drawings	CPOL956171_Drawings.pdf	430962 6483b51637446204f5b9cc6cb7e288fdf5f00d83	no	6
Warnings:					
Information:					
3	Oath or Declaration filed	CPOL956171_Declaration.pdf	142772 323daac34b16a61550da05ed348a8fdf08131ce6	no	4
Warnings:					
Information:					
4	Power of Attorney	CPOL956171_PowerofAttorney.pdf	142772 323daac34b16a61550da05ed348a8fdf08131ce6	no	4
Warnings:					
Information:					
5	Fee Worksheet (PTO-06)	fee-info.pdf	8479 0f9ee7c9f33150d661bb7fb889104d68c032cf	no	2
Warnings:					
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		Total Files Size (in bytes):	822643		

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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

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PTO/SB/06 (12-04)

Filing Date: 7/28/2008

Approved for use through 7/31/2006. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number: 12/180,934

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
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	N/A			N/A	210
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	0	X$ 25		OR	X$50	0
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	X$105			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 $260 ($130 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))			185			370	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	0		TOTAL	1240

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
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))									
	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) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
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))									
	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.**

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