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12/273,037 | INFO-002COA:

SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

PUBLIC VIEW

Application #	Confirmation #	Attorney Docket #	Patent #
12/273,037	7491	INFO-002COA	8,051,460  Download PDF  Issued - 11/01/2011
Filing or 371 (c) date	Status		
11/18/2008	Patented Case 10/12/2011		

 Show/hide menu

Application data

Application type	Earliest publication #	Intl. registration # (Hague)
Utility	US 2009-0083830 A1  Download PDF 	-
Examiner	Earliest publication date	Intl. registration publication date
HOSUK SONG	03/26/2009	-
Group art unit	Assignee for publication	
2435	-	
Class/subclass	Confirmation #	
726/001.000	7491	
AIA (first inventor to file)		
No		
Entity status		
Small		
Correspondence address	Inventors	Applicants
28661 -Lewis Roca Rothgerber Christie LLP PO BOX 29001 Glendale, CA UNITED STATES	Stacey C. Lum Los Altos, CALIFORNIA (US) Yuhshiow Alice Lee Saratoga, CALIFORNIA (US)	

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**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT:	Stacey C. Lum, et al.
APPLICATION NO.:	Unknown
FILED:	November 18, 2008
TITLE:	Systems and Methods of Controlling Network Access
EXAMINER:	Unknown
GROUP ART UNIT:	Unknown
ATTY.DKT.NO.:	PA4693US

**INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56, and 1.97-1.98**

SIR:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56. No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference on this list an admission that it is prior art or pertinent to this application.

Copies of foreign and non-patent references were previously provided in U.S. Patent Application number 10/949,179 filed September 24, 2004, to which the present application makes a claim of priority under 35 USC 120. As such, copies are not provided herewith.

Applicants believe no fee is due with this submission. If a fee is due, however, the Commissioner is hereby authorized to charge any necessary fee to Account Number 06-0600.

Respectfully submitted,
Stacey C. Lum, et al.

November 18, 2008

By: /Tam Thanh Pham/
Tam Thanh Pham, Reg. No. 50,565
Carr & Ferrell LLP
2200 Geng Road
Palo Alto, CA 94303
TEL: (650) 812-3400
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**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): Stacey C. Lum, et al.

SERIAL NO.: Unknown

FILED: November 18, 2008

TITLE: Systems and Methods of Controlling Network Access

EXAMINER: Unknown

GROUP ART UNIT: Unknown

ATTY.DKT.NO.: PA4693US

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

**List of Co-Pending Patent Applications That May Be Directed
Towards Similar Subject Matter**

Examiner's Initials	Serial Number	First-Named Inventor	Title	Filing Date
2962	11/227,679	Stacey Lum	Dynamic address assignment for access control on DHCP networks	9/14/2005
3580	11/433,723	Stacey Lum	Network access control including dynamic policy enforcement point	5/11/2006
3581	11/433,225	Stacey Lum	Network access control management	5/11/2006
3536	11/356,555	Stacey Lum	Peer Based Network Access Control	02/16/2006
Examiner's Signature:				Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Stacey C. Lum, et al.
APPL. NO.: Unknown
FILING DATE: November 18, 2008
TITLE: Systems and Methods of Controlling Network Access
PARENT APPL. NO.: 10/949,179
PARENT FILING DATE: September 24, 2004
PARENT EXAMINER: Hosuk Song
PARENT ART UNIT: 2135
ATTY. DKT. NO.: PA4693US

Statement Regarding Declaration

SIR:

Enclosed with the present continuation patent application is the declaration for U.S. patent application number **10/949,179** filed on September 24, 2004. U.S. patent application number **10/949,179** is the parent application of the present continuation patent application. These documents are being submitted pursuant to 37 C.F.R. § 1.63 whereby a newly executed oath or declaration is not required in a new continuation application.

Respectfully submitted,
Stacey C. Lum, et al.

November 18, 2008

By: /Tam Thanh Pham/
Tam Thanh Pham, Reg. No. 50,565
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T: 650.812.3400
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ATTORNEY'S DOCKET NO.: PA2836US

**SUPPLEMENTAL DECLARATION AND
POWER OF ATTORNEY FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled

"Systems and Methods of Controlling Network Access"

which was filed in the United States Patent and Trademark Office on September 24, 2004 and assigned serial number 10/949,179.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under Title 35, United States Code §119(a)-(d) or (f) or §365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

<u>Number</u>	<u>Country</u>	<u>Foreign Filing Date</u>	<u>Priority Claimed?</u>	<u>Certified Copy Attached?</u>
(Number)	(Country)	(MM/DD/YYYY)	☐ Yes ☐ No	☐ Yes ☐ No
(Number)	(Country)	(MM/DD/YYYY)	☐ Yes ☐ No	☐ Yes ☐ No

ATTORNEY'S DOCKET NO.: PA2836US

I hereby claim the benefit under Title 35, United States Code §119(e) of any United States provisional application(s) listed below.

Prior Provisional Applications:

<u>60/505,582</u>	<u>September 24, 2003</u>
(Application Number)	(Filing Date)
<u>60/513,080</u>	<u>October 21, 2003</u>
(Application Number)	(Filing Date)

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

Prior U.S. or PCT Applications Designating the U.S.:

<u> </u>	<u> </u>	<u> </u>
(Application Number)	(Filing Date)	(Status -- patented, pending, abandoned)
<u> </u>	<u> </u>	<u> </u>
(Application Number)	(Filing Date)	(Status -- patented, pending, abandoned)

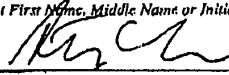
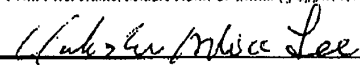
POWER OF ATTORNEY: I hereby appoint the attorney(s) and/or agent(s) associated with the customer number **22830** to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

SEND ALL CORRESPONDENCE TO:

Customer Number 22830
CARR & FERRELL LLP
2200 Geng Road
Palo Alto, CA 94303
TEL: (650) 812-3400
FAX: (650) 812-3444

ATTORNEY'S DOCKET NO.: PA2836US

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: Stacey C. Lum Citizenship: U.S.A.*Print First Name, Middle Name or Initial (if applicable), Last Name*Inventor's signature:  Dated: 10/21/08*(Permanent ink only)**(Date of Signature)*Residence Address: Los Altos, California*(if the inventor lives at a location different than his/her mailing address)*Mailing Address: 170 S. Whisman Road, Suite B, Mountain View, California 94041*(Where the inventor customarily receives mail: Number, Street, City, State, Zip Code)*Full name of second inventor: Yuhshiw Alice Lee Citizenship: U.S.A.*Print First Name, Middle Name or Initial (if applicable), Last Name*Inventor's signature:  Dated: 10/21/08*(Permanent ink only)**(Date of Signature)*Residence Address: Saratoga, California*(if the inventor lives at a location different than his/her mailing address)*Mailing Address: 170 S. Whisman Road, Suite B, Mountain View, California 94041*(Where the inventor customarily receives mail: Number, Street, City, State, Zip Code)*

ATTORNEY'S DOCKET NO.: PA2836US**37 CFR §1.56 Duty to disclose information material to patentability.**

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(h)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) Prior art cited in search reports of a foreign patent office in a counterpart application, and
 - (2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
- (1) It establishes, by itself or in combination with other information, a *prima facie* case of unpatentability of a claim; or
 - (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability. A *prima facie* case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.
- (c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
- (1) Each inventor named in the application;
 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.
- (e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

PA2836US

4

Doc code :IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (09-08)

Approved for use through 10/31/2008. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

U.S.PATENTS						
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	5968176		1999-10-19	Nessett et al.	
	2	6834414		2004-12-28	Chiu	
	3	2519435		1950-08-22	Byrd, Jr.	
	4	3100664		1963-08-13	Duval	
	5	1830383		1931-11-03	Bos	
	6	1860326		1932-05-24	Jackson	
	7	2131067		1938-09-27	Paden	
	8	2247592		1941-07-04	Swift	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
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	First Named Inventor	Lum		
	Art Unit			
	Examiner Name	Unknown		
	Attorney Docket Number		PA4693US	

	9	2731056		1956-01-17	Anson	
	10	3701557		1972-10-31	Centofante	
	11	5010622		1991-04-30	Morita	
	12	4181339		1980-01-01	Rigsby	
	13	4951984		1990-08-28	Huang	
	14	5701635		1997-12-30	Hawkes	
	15	5944368		1999-08-31	Hastings	
	16	5606668		1997-02-25	Shwed	
	17	6044402		2000-03-28	Jacobson et al.	
	18	6304973		2001-10-16	Williams	
	19	6393484		2002-05-21	Massarani	

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	Art Unit			
	Examiner Name	Unknown		
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	20	6363489		2002-05-26	Comay et al.	
	21	5842002		1998-11-24	Schnurer et al.	
	22	5968176		1999-10-19	Nessett et al.	
	23	6745333		2004-06-01	Thomsen	
	24	6006259		1999-12-21	Adelman et al.	
	25	6769000		2004-07-27	Akhtar et al.	

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

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060147043		2006-07-06	Mann et al.	
	2	20020010869		2002-01-24	Kim	
	3	20030023880		2003-01-30	Edwards et al.	

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	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

	4	20030046586		2003-03-06	Bheemarasetti et al.	
	5	20030126464		2003-07-03	McDaniel et al.	
	6	20030208694		2003-11-06	Fang	
	7	20040054926		2004-03-18	Ocepek et al.	
	8	20040098610		2004-05-20	Hrastar	
	9	20040103314		2004-05-27	Liston	
	10	20040162994		2004-08-19	Cohen et al.	
	11	20040181690		2004-09-16	Rothermel et al.	
	12	20040243835		2004-12-02	Terzis et al.	
	13	20050027837		2005-02-03	Roese et al.	
	14	20050050365		2005-03-03	Seki et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

	15	20050278775		2005-12-15	Ross	
	16	20060095968		2005-05-04	Portolani et al.	
	17	20060161970		2006-07-20	Hopen et al.	
	18	20060164199		2006-07-27	Gilde et al.	
	19	20070064689		2007-03-22	Shin et al.	
	20	20030191966		2003-10-09	Gleichauf	
	21	20080060067		2008-03-06	Kim et al.	
	22	20040193912		2004-09-30	Li et al.	
	23	20050044197		2005-02-24	Lai	
	24	20020120749		2002-08-29	Widegren et al.	

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FOREIGN PATENT DOCUMENTS

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number	PA4693US	

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	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	WO2006029217			2006-03-16	Swan Labs Corporation		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

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
	1	"Packet Fence Overview," PacketFence™, located at http://www.packetfence.org , date unknown.	☐
	2	"Network Access Control from Mirage Networks," Mirage Networks, 2006.	☐
	3	Whalen, S., "An Introduction to ARP Spoofing," April 2001, Revision 1.82, located at http://www.node99.org/projects/arpspoof/	☐

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

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number	PA4693US	

CERTIFICATION STATEMENT

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).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

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	/Tam Thanh Pham/	Date (YYYY-MM-DD)	2008-11-18
Name/Print	Tam Thanh Pham	Registration Number	50,565

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour 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.**

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.

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Systems and Methods of Controlling Network Access		
First Named Inventor/Applicant Name:		Stacey C. Lum		
Filer:		TamThanh Thi Pham		
Attorney Docket Number:		PA4693US		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	82	82
Utility Search Fee	2111	1	270	270
Utility Examination Fee	2311	1	110	110
Pages:				
Claims:				
Claims in excess of 20	2202	11	26	286
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				748

Electronic Acknowledgement Receipt	
EFS ID:	4305093
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA4693US
Receipt Date:	18-NOV-2008
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Time Stamp:	14:39:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
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Payment was successfully received in RAM	\$ 748
RAM confirmation Number	9376
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Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		PA4693US_application.pdf	1801315 bc18c74380e4ef5b8f150aefec48c7dcd1c d3fa	yes	43
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	27	
	Claims		28	32	
	Abstract		33	33	
	Drawings-only black and white line drawings		34	43	
Warnings:					
Information:					
2	Information Disclosure Statement Letter	PA4693US_IDSstatement.pdf	72185 6ae36827c06a5bc0f0f9a5dc1c787f6aed0c 2c8b	no	2
Warnings:					
Information:					
3	Miscellaneous Incoming Letter	4693US_ListCo-Pending.PDF	100022 fd8d6818a518ff59ec8238ebe3b39134fe90 a542	no	1
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	PA4693US_StatementDeclaration.pdf	30320 9081df5c98c0145d9df96bf2713c415fe84c dd19	no	1
Warnings:					
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5	Oath or Declaration filed	PA4693US_declaration.pdf	182692 6bb2d80d14ff17e492cc84c91e8a5092ddb 3e82a	no	4
Warnings:					
Information:					

6	Information Disclosure Statement (IDS) Filed (SB/08)	PA4693US_IDS-SB08.pdf	55213 38585c02171118c76842fd21016b89f13718209	no	8
Warnings:					
Information:					
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7	Fee Worksheet (PTO-06)	fee-info.pdf	36160 92cb6bb78611bc9f88cc671a13bd10f037bf1719	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			2277907		
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Warnings:					
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7	Fee Worksheet (PTO-06)	fee-info.pdf	36160 92cb6bb78611bc9f88cc671a13bd10f037bf1719	no	2
Warnings:					
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SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation and claims the priority benefit of U.S. Patent Application No. 10/949,179 filed September 24, 2004, and entitled "Systems and Methods of Controlling Network Access," which claims the priority benefit of U.S. Provisional Patent Application No. 60/505,582 filed September 24, 2003 and entitled "Gatekeeper Inventions for Controlling Access to a Corporate Network" and U.S. Provisional Patent Application No. 60/513,080 filed October 21, 2003 and entitled "Gatekeeper Invention for Controlling Access to a Corporate Network Using 802.1x" the disclosures of the aforementioned applications being incorporated herein by reference.

BACKGROUND

1. Field of the Invention

[0002] The invention is in the field of computing systems and more specifically in the field of network security.

2. Description of the Related Art

[0003] Several approaches to controlling external access to computing networks have been developed. The goals in developing these approaches include limiting access to authorized users and assuring that computing devices employed by these users do not include malicious computing code such as viruses, worms, or Trojan horses. The need for access control has grown with users' demands for accessing secure networks over the Internet and from personal devices such as laptop computers and personal digital assistants.

[0004] A first level of access control is achieved by requiring authentication of a user. This may be accomplished by requiring the user to enter a username and password or by reading a MAC address or other identifying information from an access device. In some systems, a network switch is programmed to grant access to a secure network only after proper authentication is achieved. Systems capable of using this approach include those using a proprietary VMPS protocol from Cisco Systems, Inc. of San Jose, Calif. or using a IEEE 802.1x standard protocol.

[0005] Reliance on mere user authentication includes several disadvantages. For example, there are no provisions to assure that an access device used by the authenticated user meets network security policies. The access device may have out-of-date virus software, may have security vulnerabilities, or may be otherwise compromised. Further, this approach requires that access points (e.g., network switches) support one of a specific set of access protocols. Because many access points do not support VMPS, 802.1x, or a similar protocol, implementation of this approach on a large preexisting network, such as a corporate network, may be prohibitively expensive.

[0006] A greater level of access control may be achieved by including a gatekeeper between the secure network and the access device. The gatekeeper is configured to ensure that the access device conforms to a predetermined security policy. FIG. 1 is a block diagram of a Secure Network, generally designated 100, including two instances of a Gatekeeper 110 each associated with a different instance of an Access Point 120. Secure Network 100 further includes, as an illustrative example, a network File Server 130, a Network PC (personal computer) 140 and a Printer 150 included in and connected via, a local area network designated LAN 125.

[0007] Each instance of Access Point 120 may include a large number of individual communication ports. These ports are used to connect through GateKeeper 110 to other elements within Secure Network 100 such as File Server 130 or LAN 125. Large corporate networks may include many instances of Access Point 120, each including

hundreds of individual communication ports and being associated with an instance of GateKeeper 110.

[0008] Some instances of Access Point 120 are capable of supporting virtual local area networks (VLANs). VLANs are generated by associating communication ports within Access Point 120 with separate virtual networks. For example, one Access Device 160 may be placed on a different VLAN than another Access Device 160 by assigning the communication ports of Access Point 120 to separate VLANs. From the point of view of these devices, the effect of a VLAN is equivalent to having a separate hardwired network.

[0009] GateKeeper 110 is configured to control access to Secure Network 100. In addition to authenticating users who wish to access Secure Network 100 using an Access Device 160, GateKeeper 110 is configured to ensure that Access Device 160 conforms to a predetermined security policy, before granting access to Secure Network 100. For example, GateKeeper 110 may make certain that Access Device 160 has up-to-date virus software and encryption protocols as proscribed by the security policy. Once GateKeeper 110 has verified that Access Device 160 satisfies the security policy, Access Device 160 is allowed to communicate through GateKeeper 110 to LAN 125.

[0010] A disadvantage of the use of GateKeeper 110, as practiced in the prior art, is that all communications between Access Device 160 and LAN 125 pass through GateKeeper 110. For large networks including many instances of Access Point 120, each of which may include many communication ports, this can be a significant burden. The use of one instance of GateKeeper 110 to support numerous instances of Access Device 160 is limited by bandwidth and required sophistication (e.g., cost) of GateKeeper 110. It is undesirable for GateKeeper 110 to become a limiting factor on the bandwidth of communication between instances of Access Device 160 and Secure Network 100. Further, the use of a separate GateKeeper 110 for each instance of Access Device 160 or Access Point 120 is often prohibitively expensive. Even if a separate GateKeeper is used for each Access Point 120, there is no isolation between compliant and non-compliant Access Devices 160 which are attached to the same Access Point 120.

[0011] There is, therefore, a need for improved systems and methods of controlling access to secure networks.

SUMMARY OF THE INVENTION

[0012] Systems and methods of the invention include a protected network physically or logically divided into a restricted subset and one or more less-restricted subsets. Requests from an access device for access to the less-restricted subset are first passed to the restricted subset. Elements (e.g., a gatekeeper) of the restricted subset are then used to apply security policies to the access device and if security policies are satisfied, the access device is granted access to a less-restricted subset of the protected network. The passing of access requests to the restricted subset and granting of access are accomplished by configuring and reconfiguring a communication port of an access point. After access is granted, further communication between the access device and the protected network can include access to the less restricted subset.

[0013] Typically, the less-restricted subset of the protected network and the restricted subset of the protected network are characterized by Virtual Local Area Networks (e.g., VLANs) defined within the access point and optionally by access control lists (ACL) of a router, firewall, or switch situated between the VLAN and the protected network. Different VLANs within the same access point, or within different access points, may be configured to characterize a plurality of restricted subsets and/or a plurality of less-restricted subsets within the protected network. A communication port of the access point is configured such that network traffic directed at the protected network is initially passed through a restricted VLAN rather than through a less-restricted VLAN. The restricted VLAN allows network traffic to pass to the restricted subset of the protected network and is typically restricted in the sense that it only allows access to elements of the protected network that are configured to communicate with an access device whose security characteristics are unknown or questionable. In contrast, the less-restricted VLAN allows access to the less-restricted subset of the protected network and, in typical embodiments, to elements of both the less-restricted subset and the restricted subset. For example, the restricted VLAN allows traffic to pass to a gatekeeper configured to receive requests for access to the less-restricted VLAN, and to

determine if, and to what extent, access may be allowed. To grant access, the gatekeeper sends commands to the access point in order to reconfigure a communication port to which the access device is connected. The reconfiguration typically includes reassigning the communication port from the restricted VLAN to the less-restricted VLAN.

[0014] Subsequent to reconfiguration of the communication port, network traffic can pass from the access device through the less-restricted VLAN to elements of both the less-restricted subset and (optionally) the restricted subset. This network traffic need not pass through the gatekeeper. Thus, in various embodiments of the invention a gatekeeper is used to grant access to the less-restricted subset, and after access has been granted, most network traffic does not need to pass through the gatekeeper. For example, in some embodiments, the gatekeeper only receives requests to access the less-restricted network and data regarding access to and security of the protected network. This data may be received from administrators, access devices, access points, routers, and/or other devices on the network. These limited communications with gatekeeper occur both before and after reconfiguration of the communication port, and eliminate a significant disadvantage associated with the use of prior art gatekeepers.

[0015] Various embodiments of the invention include a computing network comprising a less-restricted subset of the computing network, access to the less-restricted subset being responsive to a first VLAN, a restricted subset of the computing network including a gatekeeper, the gatekeeper configured to receive requests for access to the less-restricted subset from an access device and to issue commands configured to allow access to the less-restricted subset, access to the restricted subset of the computing network being responsive to a second VLAN, and at least one access point including a communication port configurable for communication with the less-restricted subset or alternatively for communication with only the restricted subset, configuration of the communication port including association of the communication port alternatively with the first VLAN or the second VLAN, configuration of the communication port being responsive to the commands issued by the gatekeeper. Other elements are optional.

[0016] Various embodiments of the invention include a network gatekeeper comprising at least one security policy including requirements that must be satisfied before an access device is granted access to a less-restricted subset of a protected network, a policy auditor configured to audit an access device using the at least one security policy, in response to a request to access the less-restricted subset of the protected network, the request being sent from the access device to the gatekeeper via a communication device, and an access control configured to reconfigure the communication device such that data sent from the access device can be received by the less-restricted subset of the protected network rather than merely a restricted subset of the protected network, if the audit results in a determination that the access device meets the requirements of the at least one security policy, the restricted subset of the protected network including the gatekeeper. Other elements are optional.

[0017] Various embodiments of the invention include a method of granting access to a protected network, the method comprising receiving a request for access to a less-restricted subset of the protected network from an access device external to the protected network, the request being received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper, applying a security policy to the access device, responsive to the request, and reconfiguring the communication port for communicating between the access device and the less-restricted subset of the protected network, if requirements of the security policy are satisfied. Other steps are optional.

[0018] Various embodiments of the invention include a method of granting access to a protected network, the method comprising receiving a first communication from an access device at a communication port, the communication port being configured to pass the first communication to a restricted subset of the protected network, the restricted subset including a gatekeeper configured to enforce security policy for access to a less-restricted subset of the protected network, receiving a command from the gatekeeper, the command being responsive to the received first communication and being

configured to reconfigure the communication port to communicate data to the less-restricted subset of the protected network, configuring the communication port to communicate data to the less-restricted subset of the protected network rather than merely the restricted subset of the protected network, responsive to the received command, and receiving a second communication from the access device at the communication port, the communication port now being configured to pass the second communication to the less-restricted subset of the protected network. Other steps are optional.

[0019] Various embodiments of the invention include a computing network comprising means for dividing the computing network into a restricted subset and a less-restricted subset, means for receiving a request at the restricted subset, the request being to access the less-restricted subset, means for enforcing a security policy in response to the request, and means for allowing communication to the less-restricted subset, responsive to the enforcement of the security policy, the communication to the less-restricted subset not necessarily passing through the restricted subset. Other elements are optional.

[0020] In various embodiments of the invention the restricted subset of a computing network includes elements configured to communicate with access devices having an unknown or questionable security status, and the less-restricted subset of the computing network includes those elements of the computing network not included in the restricted subset.

BRIEF DESCRIPTION OF THE FIGURES

- [0021] FIG. 1 is a block diagram of a prior art computing network;
- [0022] FIG. 2 is a block diagram of a protected network, according to various embodiments of the invention;
- [0023] FIG. 3A is a block diagram showing further details of an access point, router and gatekeeper of FIG. 2, according to various embodiments of the invention;
- [0024] FIG. 3B is a block diagram showing further details of the access point, router and gatekeeper of FIG. 2, after access has been granted to a less-restricted subset of a protected network, according to various embodiments of the invention; and
- [0025] FIG. 4 is a flowchart illustrating a method of granting access to a protected network, according to various embodiments of the invention.
- [0026] FIG. 5 is a block diagram showing EAP over 802.1x/RADIUS.
- [0027] FIG. 6A is a block diagram showing a client in authentication state.
- [0028] FIG. 6B is a block diagram showing a server in authentication state.
- [0029] FIG. 7 is a block diagram showing a server changing to audit state.
- [0030] FIG. 8A is a block diagram showing a server in audit state.
- [0031] FIG. 8B is a block diagram showing a client responding to audit requests.
- [0032] FIG. 9 is a block diagram showing a system in 802.1x mode where normal traffic does not traverse CGS.

DETAILED DESCRIPTION

[0033] Access to a protected computing network is controlled by manipulating a communication port within an access point. When an access request is first received, the communication port is configured to pass the request to a restricted subset of a protected computing network. This restricted subset includes a gatekeeper configured to administer a security policy governing access to those parts of the protected computing network that are not part of the restricted subset. Those parts of the protected computing network that are not part of the restricted network are considered to be in a less-restricted subset. The less-restricted subset being less restricted relative to the restricted subset in terms of what elements may be included in each subset. If the device requesting access satisfies requirements of the security policy, then the gatekeeper sends commands to the access point in order to reconfigure the communication port through which the access request was received. The communication port is reconfigured such that further communication from the access device is passed to the less-restricted subset as well as, optionally, the restricted subset. In some embodiments, the less-restricted subset and the restricted subset are characterized by VLANs defined within the protected network.

[0034] FIG. 2 is a block diagram of a Protected Network 200, according to various embodiments of the invention. Protected Network 200 is either physically or logically divided into a Restricted Subset 205 and a Less-Restricted Subset 210. Access to Protected Network 200 is possible through an Access Point 215 (a communication device) and an optional Router 220. As is described further herein this access is under the control of a GateKeeper 225. GateKeeper 225 is configured to enforce a security policy against one or more Access Device 230 requesting access to Less-Restricted Subset 210. Typically, Less-Restricted Subset 210 and Restricted Subset 205 are characterized by VLAN settings within Access Point 215. Access Device 230 and Access Point 215 are connected by a communication channel such as a cable, the Internet, a telephone

network, other computing network, and/or the like. In some embodiments, a network access server (not shown) is included between Access Device 230 and Access Point 215.

[0035] In various embodiments, Protected Network 200 includes a corporate network, telephone network, private network, local area network, wide area network, wireless network, communication network, government network, university network, and/or the like. Restricted Subset 205 is a subset of Protected Network 200 including at least GateKeeper 225. In some embodiments, Restricted Subset 205 further includes a DHCP (dynamic host configuration protocol service) 260 configured to assign and manage network addresses, and/or an Update Module 255 configured for providing security updates to Access Device 230. For example, in one embodiment, Restricted Subset 205 includes a server configured to function as DHCP 260 and a server configured to function as GateKeeper 225. In one embodiment, Restricted Subset 205 includes a single computing device configured to function as both Update Module 255 and GateKeeper 225.

[0036] Less-Restricted Subset 210 includes those elements of Protected Network 200 not included in Restricted Subset 205. Less-Restricted Subset 210 optionally includes devices such as a File Server 235, a Network PC 240, a Printer 245, or the like. In some embodiments, Protected Network 200 includes elements having a hierarchy of access restrictions. For example, access to Network PC 240 may require a higher level of authority than access to File Server 235. In this case, as described further herein, access control lists within Router 220 are optionally used to independently control access to specific devices within Less-Restricted Subset 210. Protected Network 200 may be large, including tens, hundreds, or thousands of devices. The hierarchy of access restrictions may be enforced by a hierarchical set of security policies defined using Policy Manager 250. In various embodiments, Router 220 and Access Point 215 may be considered part of Restricted Subset 205 or Less-Restricted Subset 210.

[0037] GateKeeper 225 is configured to enforce one or more security policies against an instance of Access Device 230 attempting to access Protected Network 200. The security policies may include requirements for user identification such as user names and

passwords, configuration requirements relating to the configuration of Access Device 230, application requirements relating to applications running on Access Device 230, or the like. For example, in one embodiment GateKeeper 225 is configured to enforce a security policy that requires a user of Access Device 230 to provide a username and password, requires Access Device 230 to be running an operating system with specific security patches installed, requires that Access Device 230 not be connected to any insecure devices, and requires that Access Device 230 have current antivirus software installed.

[0038] In some embodiments, GateKeeper 225 is configured to enforce several alternative security policies having different levels of requirements, and to determine which security policy to enforce based on the identity of Access Device 230, the identity of a user of Access Device 230, those elements of Less-Restricted Subset 210 to which access is requested, and/or the like. For example, a request to access File Server 235 may have to satisfy a security policy that includes scanning Access Device 230 for malicious code, while a request to access Printer 245 may have to satisfy a security policy that includes establishing a user identity. Security policies may be stored on GateKeeper 225, on Policy Manager 250, or elsewhere accessible to Restricted Subset 205.

[0039] In some embodiments, a single instance of GateKeeper 225 is configured to manage access through more than one Access Point 215 and/or to manage access to more than one Protected Network 200. As is described further herein, management of Access Point 215 is accomplished by configuring and reconfiguring one or more communication ports within Access Point 215, and optionally setting access control lists within Router 220. In some embodiments Protected Network 200 includes a plurality of Access Point 215, a plurality of GateKeeper 225 and/or a plurality of Restricted Subset 205. Further details of GateKeeper 225 and Access Point 215 are discussed below.

[0040] Access Device 230 is a computing device configured to operate as an end point (EP) in a communication channel including Access Point 215 and Access Device 230. In various embodiments, Access Device 230 is a personal computer, a personal digital assistant, a telephone, a wireless device, a communication device such as a

router, Ethernet card, wireless card, another access point, a network device, or the like. Access Device 230 is optionally identified by a MAC address, by a cookie, by data stored on Access Device 230, by a user name, an IP address, a network address, or the like.

[0041] In some embodiments, Access Device 230 is configured to execute a software and/or hardware agent for communicating with GateKeeper 225. For example, in one embodiment, Access Device 230 includes an agent configured to monitor code running on Access Device 230 and report any suspicious code to GateKeeper 225. In another example, Access Device 230 may include software and/or hardware configured to monitor other devices connected to Access Device 230 and to report information about these devices (e.g., their security statuses or MAC addresses) to GateKeeper 225.

[0042] Policy Manager 250 is configured to centrally create, update, and distribute security policies enforced by one or more GateKeeper 225. For example, in various embodiments, Policy Manager 250 is configured to manage passwords, to specify access privileges, to specify requirements of security policies, or the like. In some embodiments, Policy Manager 250 is configured to establish several security policies and to specify conditions under which each of the security policies should be used. For example, a security policy may be selected for use responsive to a device type of Access Device 230 and/or the elements of Protected Network 200 to which access has been requested.

[0043] Update Module 255 is configured for remotely modifying Access Device 230, or a device connected to Access Device 230, in order to improve compliance with a security policy. For example, if it is found that Access Device 230 includes out-of-date antivirus software, then Update Module 255 may facilitate updating of the antivirus software on Access Device 230. In some embodiments, Update Module 255 is configured to update an agent executing on Access Device 230. Update Module 255 is optionally included in Less-Restricted Subset 210 or external to Protected Network 200. Update Module 255 optionally operates responsive to a security policy and/or to GateKeeper 225.

[0044] FIG. 3A is a block diagram showing further details of Access Point 215, Router 220 and GateKeeper 225, according to various embodiments of the invention. Access Point 215 is, for example, a network switch, a wireless access point, a remote access virtual private network (VPN), secure socket layer VPN, firewall, or the like. When embodied in a network switch, Access Point 215 includes a series of communication ports, designated Ports 305A-305G and configured for communication with devices such as Access Device 230, Router 220, Less-Restricted Subset 210 and/or Restricted Subset 205.

[0045] Communication received at one member of Ports 305A-305G is directed internally to another member of Ports 305A-305G via a member of VLANs 310A-310D. VLANs 310A-310D are logical associations between members of Ports 305A-305G. Typically, any members of Ports 305A-305G that are configured to be associated with the same member of VLANs 310A-310D are in bi-directional communication with each other. These associations are illustrated in FIGs. 3A and 3B by Lines 315. For example, with Ports 305A-305G configured as shown in FIG. 3A, communication from Access Device 230 and received at Port 305A is directed to Port 305F because Port 305A and Port 305F are both associated with VLAN 310C. (In some embodiments of Access Point 215, a member of VLANs 310A-310D may be configured such that some members of Ports 305A-305G, even if associated with the same VLAN, are hidden from each other. For example, in these embodiments, both Ports 305A and 305B may be in communication with Port 305F but not with each other.)

[0046] The associations between members of Ports 305A-305G and VLANs 310A-310D are controlled by Switch Logic 317 which is accessible to other devices, for example through Port 305G. Switch Logic 317 is configured for configuring and reconfiguring members of Ports 305A-305G responsive to received commands. For example, by receiving an appropriate command, Switch Logic 317 is configured to reconfigure Port 305A to be associated with VLAN 310A, as illustrated in FIG. 3B below. In this configuration, data received at Port 305A is directed to Port 305D via VLAN 310A, rather than to Port 305F.

[0047] As is discussed further below, the commands received by Switch Logic 317 may be generated by GateKeeper 225. This communication between GateKeeper 225 and Switch Logic 317 may be accomplished using SNMP (Simple Network Management Protocol), telnet, SSH (Secure Shell), RADIUS (Remote Authentication User Dial-In Service), EAP (Extensible Authentication Protocol), or the like.

[0048] In some embodiments, Switch Logic 317 includes a memory (not shown) configured to store the status of Ports 305A-305G and/or identification data regarding Access Device 230. This identification data may include, for example, MAC addresses, IP (internet protocol) addresses, or other data that may be used to identify Access Device 230 or data sent by Access Device 230.

[0049] Data passed through members of Ports 305D-305G are received by Router 220 and may be communicated to other elements of Protected Network 200 responsive to access control lists (ACL 340A-340D) associated with Ports 335A-335D of Router 220. ACL 340A through 340D are each communication filters that deny or allow communication to be passed to specific elements or sets of elements within Protected Network 200. For example, ACL 340C may be an access control list that specifically allows communication to network addresses used by GateKeeper 225 and DHCP 260, and blocks communication to all other network addresses. In this case, communication through Port 335C of Router 220 would only be allowed to reach these elements of Restricted Subset 205 and would not be allowed to reach elements of Less-Restricted Subset 210.

[0050] ACL 340A-340D of Router 220 may be used to limit communication from Access Device 230 to specific elements of Protected Network 200. For example, in the embodiments illustrated by FIG. 3A, if ACL 340C is configured to restrict communication to Restricted Subset 205, and Ports 305A-305C are associated with VLAN 310C as indicated by Lines 315, then communication via these members of Ports 305A-305G will be restricted to Restricted Subset 205. In typical embodiments, at least one member of ACL 340A-340D is configured to allow communication to Restricted Subset 205 but not to Less-Restricted Subset 210. As is discussed further herein, by

reconfiguring a member of Ports 305A-305C to be associated with a different member of VLANs 310A-310D, not subject to the filtering of ACL 340C, communications from Access Device 230 can be directed to elements within Less-Restricted Subset 210, and optionally Restricted Subset 205, rather than merely to Restricted Subset 205.

[0051] When Access Point 215 is embodied in a wireless access point, some or all of Ports 305A-305G may be wireless connections rather than physical ports. In these embodiments, Lines 315 may represent logical associations used to control data flow between wireless connections to Access Point 215 and/or members of Ports 305A-305G that are physical communication ports. For example, in some embodiments, MAC addresses are used to distinguish wireless communications from different instances of Access Device 230 and the logical associations (represented by Lines 315) are used to direct these communications to various output channels. The output channels may be other wireless connections or physical members of Ports 305A-305G. These logical associations may be altered by Switch Logic 317 just as associations with members of VLANs 310A-310D are modified. Therefore, the teachings herein that use a network switch as an example of Access Point 215, apply equally to wireless access points.

[0052] Switch Logic 317 is controlled by an Access Control 320 included in GateKeeper 225. Access Control 320 is configured to send commands to Switch Logic 317 in order to reconfigure members of Ports 305A-305G. This reconfiguration includes modifying the association of members of Ports 305A-305G with different members of VLANs 310A-310D. In some embodiments, as described further herein, Access Control 320 is also configured to read a status of members of Ports 305A-305G and/or device identification data from Switch Logic 317.

[0053] Access Control 320 is responsive to a Policy Auditor 325 included in GateKeeper 225. Policy Auditor 325 is configured to receive a request for access to Less-Restricted Subset 210 from Access Device 230, to determine which of Security Policy 330A or optional Security Policy 330B applies to the current request, to perform a security audit of Access Device 230 based on the appropriate member of Security Policies 330A-330B, and to notify Access Control 320 if the audit is passed. This notice

typically causes Access Control 320 to reconfigure a member of Ports 305A-305G using Switch Logic 317. For example, in some embodiments, if Security Policy 330A applies and if Access Device 230 satisfies requirements of Security Policy 330A, then Policy Auditor 325 provides a notice to Access Control 320. In response, Access Control 320 sends appropriate commands to Switch Logic 317. These commands cause changes in Port 305A, such that communication from Access Device 230 is no longer blocked by ACL 340C and can now be received by elements of Less-restricted Subset 310. In alternative embodiments, Security Policies 330A-330B are stored elsewhere in Protected Network 200 accessible to Policy Auditor 325. Restricted Subset 205 optionally includes one, two, or more security policy, such as Security Policies 330A-330B.

[0054] FIG. 3B is a block diagram showing further details of Access Point 215, Router 220 and GateKeeper 225 of FIG. 2, after access has been granted to elements of Less-Restricted Subset 210, according to various embodiments of the invention. Port 305A has been reconfigured to be associated with VLAN 310A rather than VLAN 310C. Because VLAN 310A is communicatively coupled to Port 305D and Port 335A (of Router 220) via ACL 340A, any communication received at Port 305A from Access Device 230 is now subject to the filtering effects of ACL 340A rather than ACL 340C. If ACL 340A allows communication to network addresses associated with one or more elements of Less-Restricted Subset 210, the above reconfiguration of Port 305A results in a granting of access to Less-Restricted Subset 210 from Access Device 230. In some embodiments, if ACL 340A is configured to allow access to members of Less-Restricted Subset 210 it is also configured to allow access to members of Restricted Subset 205. Once Port 305A has been reconfigured to be associated with VLAN 310A, future general network traffic between Access Device 230 and Less-Restricted Subset 210 may pass through Ports 305A, 305D and 335A without passing through GateKeeper 225 or other elements of Restricted Subset 205. Further, communication related to access to security of Protected Network 200 may still be received by GateKeeper 225 via Port 305A. For example, GateKeeper 225 may still receive control traffic such as DNS lookups or DHCP requests,

or requests to access additional elements of Protected Network 200, or requests to continue to access the Less-Restricted Subset 210.

[0055] In some embodiments, members of VLAN 310A-310D and ACL 340A-340D are optionally used to grant or bar access to different subsets of Protected Network 200, Less-Restricted Subset 210, or Restricted Subset 205. For example, ACL 340B may be configured to grant access to File Server 235, Policy Manager 250 and GateKeeper 225. In this case, associating a member of Ports 305A-305C with VLAN 310B may provide access to these devices from an instance of Access Device 230. Granting of access to a specific region of Less-Restricted Subset 210 is optionally responsive to which member of Security Policies 330A-330B has been satisfied.

[0056] FIG. 4 is a flowchart illustrating a method of granting access to Less-Restricted Subset 210 (FIG. 2), according to various embodiments of the invention. In these embodiments, an Update Port Log Step 410 and a Restrict Port Step 420 are used to prepare an open (unused) communication port on Access Point 215 for receiving a request for access to Less-Restricted Subset 210. This request is received from Access Device 230 in a Receive Access Request Step 430. In response, GateKeeper 225 authenticates a user, obtains audit data, and applies a security policy in an Authenticate User Step 440, an Obtain Audit Data Step 450 and an Apply Security Policy Step 460, respectively. If the security policy is satisfied, then in a Reconfigure Port Step 470, GateKeeper 225 reconfigures the communication port of Access Point 215 to which Access Device 230 has connected. Finally, the reconfigured communication port is used to pass communication between Access Device 230 and one or more element of Less-Restricted Subset 210 in a Communicate Step 480. Further details of these steps are discussed herein.

[0057] In Update Port Log Step 410, Access Control 320 reads port configuration data from Access Point 215 to determine the current configuration of Ports 305A-305G. If any of Ports 305A-305G have been configured by an administrator of Access Point 215, then in Update Port Log Step 410 the administrator specified configuration(s) are stored for later use during Reconfigure Port Step 470. Typically, the read configuration data is

stored in a port configuration table, for example within GateKeeper 225. Update Port Log Step 410 is optional, as discussed further herein.

[0058] In Restrict Port Step 420, Access Control 320 configures those members of Ports 305A-305G that may be accessed by external devices, such as Access Device 230. These communication ports are configured to be associated with VLAN 310C such that any data (e.g., communications) they receive from external devices are directed to Port 305F and, thus, to subject to ACL 340C. ACL 340C is configured to allow communication to, for example, DHCP 260 and GateKeeper 225. As a result, any requests for access received from external devices are prevented from reaching Less-Restricted Subset 210 and instead are received by elements of Restricted Subset 205. Restrict Port Step 420 results in a configuration such as that illustrated in FIG. 3A. In this configuration, those members of Ports 305A-305G that may be accessed by external devices include Port 305A, Port 305B and Port 305C. As a result of Restrict Port Step 420, these members of Ports 305A-305G are associated with VLAN 310C and communicatively coupled to Protected Network 200 through ACL 340C. Restrict Port Step 420 is optional, for example when members of Ports 305A-305C have been configured to communicate data to elements of Restricted Subset 205 by an administrator of Access Point 215.

[0059] In Receive Access Request Step 430, a request for access to Less-Restricted Subset 210 is received at one of Ports 305A-305C configured to pass data to DHCP 260 and Gatekeeper 225. Typically, this request is received from an external device such as Access Device 230. Because Port 305A, Port 305B and Port 305C are configured to pass data to DHCP 260 and Gatekeeper 225, the received access request passes through Access Point 215 and is received by either DHCP 260 or Gatekeeper 225. In typical embodiments, an initial access request is first acknowledged by DHCP 260 which assigns a dynamic network address (e.g., IP address) to Access Device 230 and returns, to Access Device 230, a network address associated with GateKeeper 225 or more specifically Policy Auditor 325. Using this network address, Access Device 230 may engage in further communication with GateKeeper 225 or Policy Auditor 325. In some

embodiments, DHCP 260 and instances of GateKeeper 225 are associated with a local domain name service configured to provide network addresses associated with a particular instance of GateKeeper 225 configured to manage (reconfigure) the particular Access Point 215 to which Access Device 230 is connected.

[0060] In optional Authenticate User Step 440, Policy Auditor 325 authenticates the identity of Access Device 230 and/or a user of Access Device 230. This authentication may be required by a member of Security Policies 330A-330B. In various embodiments, the authentication may include receipt of a user name and password, receipt of a MAC address, reading of data stored on Access Device 230, communication with an agent executing on Access Device 230, or the like.

[0061] In optional Obtain Audit Data Step 450, Policy Auditor 325 collects further data to perform a security audit of Access Device 230 responsive to Security Policy 330A or Security Policy 330B. In some embodiments, Obtain Audit Data Step 450 includes sending system data requests to Access Device 230, Router 220, or Access Point 215. The requested system data may include, for example, operating system status (version, updates, etc.), antivirus software status, information concerning devices connected to Access Device 230, Windows registry information, MAC address, IP addresses, cookies, status of applications executing on Access Device 230, or the like.

[0062] In some embodiments, Obtain Audit Data Step 450 is facilitated by an agent running on Access Device 230. For example, Access Device 230 may include a software agent configured to monitor local security and to report results of this monitoring to Policy Auditor 325.

[0063] In Apply Security Policy Step 460, a security audit of Access Device 230 is performed by Policy Auditor 325 responsive to a member of Security Policy 330A or Security Policy 330B. The particular member of Security Policy 330A or Security Policy 330B used to perform the audit may be responsive to the identity of Access Device 230, an identity of a user of Access Device 230, a part of Less-Restricted Subset 210 to which access is requested, or the like. The security audit typically includes determining if Access Device 230 satisfies requirements of the security policy. The security audit

optionally includes active probing, scanning, and/or collection of third party data regarding Access Device 230. In some embodiments, Authenticate User Step 440 is considered part of the security policy audit.

[0064] As is discussed further herein, in some embodiments, satisfaction of all the requirements of a particular security policy results in access to Less-Restricted Subset 210, while satisfaction of a subset of the requirements associated with the particular security policy is considered partial satisfaction of the security policy and may result in a more limited access to Less-Restricted Subset 210.

[0065] In some embodiments, Apply Security Policy Step 460 includes using Update Module 255 (FIG. 2) to overcome deficiencies in the security of Access Device 230. For example, in one embodiment, Apply Security Policy Step 460 includes updating antivirus software on Access Device 230 in response to a security audit that determined that the current antivirus software is out-of-date.

[0066] In Reconfigure Port Step 470, the communication port of Access Point 215, to which Access Device 230 is communicatively connected, is reconfigured responsive to a successful security audit in Apply Security Policy Step 460. This communication port is reconfigured such that data received by the communication port is passed to one or more elements of Less-Restricted Subset 210 rather than merely elements of Restricted Subset 205 (e.g., GateKeeper 225). For example, FIG. 3A shows Port 305A prior to execution of Reconfigure Port Step 470 and FIG. 3B shows Port 305A following execution of Reconfigure Port Step 470. In FIG. 3B, Port 305A is associated with VLAN 310A and, thus, communicatively coupled through Port 305D to Protected Network 200 subject to the restrictions of ACL 340A. The restrictions of ACL 340A allow access to all or part of Less-Restricted Subset 210, as well as optionally all or part of Restricted Subset 205.

[0067] In typical embodiments, reconfiguration of Port 305A is accomplished by sending commands from Access Control 320 to Switch Logic 317. These commands or responses to requests from Switch Logic 317 are optionally sent via SNMP, telnet, SSH, RADIUS, EAP, or the like, and are responsive to data received in Authenticate User Step

440 and Obtain Audit Data Step 450, and/or to the security audit performed in Apply Security Policy Step 460. In response to these commands, Switch Logic 317 configures Port 305A to be associated with VLAN 310A and, thus, communicate through Port 305D.

[0068] While access control lists (ACL 340A-340D) within Router 220 are typically configured prior to Receive Access Request Step 430, in some embodiments, Reconfigure Port Step 470 further includes configuring one or more members of ACL 340A-340D. In alternative embodiments, reconfiguring of members of ACL 340A-340D may be used to grant access to elements of Less-Restricted Subset 210 as an alternative to associating members of Ports 305A-305G to different members of VLANs 310A-310D.

[0069] Access Control 320 may selectively grant access to different parts of Protected Network 200 if ACL 340B is configured to allow access to different elements within Protected Network 200 than ACL 340A is configured. For example, in one embodiment, Access Device 230 will receive access to all of Less-Restricted Subset 210 if Port 305A is associated with VLAN 310A, or alternatively Access Device 230 will receive access to only a part of Less-Restricted Subset 210 if Port 305A is associated with VLAN 310B. When Port 305A is associated with VLAN 310A, as in FIG. 3B, communication from Access Device 230 is directed through Port 335A of Router 220 subject to ACL 340A and, thus, may access only those elements of Protected Network 200 allowed by ACL 340A. When Port 305A is associated with VLAN 310B, communication from Access Device 230 is instead passed through Port 335B subject to ACL 340B and may access only those elements of Protected Network 200 permitted by ACL 340B. A selection between granting access to a first or second part of Protected Network 200 can, therefore, be made using Access Control 320. The selection is optionally responsive to the security policy used in Apply Security Policy Step 460, to whether the security policy was fully or partially satisfied, to data obtained in Authenticate User Step 440 or Obtain Audit Data Step 450, or the like.

[0070] As illustrated in the above example, a member of Ports 305A-305G, through which Access Device 230 is requesting access, may be reconfigured to more than one alternative setting in Reconfigure Port Step 470. For example, in various embodiments a

communication port may be reconfigured to a prior administrator specified configuration previously read in Update Port Log Step 410, reconfigured to be linked to a specific port responsive to the request received in Receive Access Request Step 430, reconfigured to grant access to a particular part of Less-Restricted Subset 210, reconfigured to a default setting, and/or the like. By reading administrator specified port configurations in Update Port Log Step 410 and reconfiguring communication ports back to these read configurations in Reconfigure Port Step 470, an administrator may reconfigure Protected Network 200 without concern that their specifications will be lost or permanently overwritten by methods of the invention. In embodiments wherein a communication port is not reconfigured to a previous administrator specified configuration, Update Port Log Step 410 is optional.

[0071] In Communicate Step 480, communication occurs between Access Device 230 and elements of Less-Restricted Subset 210 via the communication port reconfigured in Reconfigure Port Step 470. However, in some embodiments, ACL 340A is configured to allow access to GateKeeper 225 as well as Less-Restricted Subset 210. Thus, general network traffic does not need to pass through GateKeeper 225, while communication regarding security of Protected Network 200 is optionally received by GateKeeper 225. Further communication between Access Device 230 and GateKeeper 225 may provide a variety of advantages. For example, further communication between GateKeeper 225 and an agent executing on Access Device 230 may allow for continuing audits of security aspects of Access Devices 230. These audits may be similar to those performed in Apply Security Policy Step 460. In one embodiment, ACL 340A is configured to grant access to all of Protected Network 200.

[0072] Further communication between GateKeeper 225 and an agent executing on Access Device 230 may also allow for a user of Access Device 230 to explicitly logoff Protected Network 200. An explicit logoff will result in reconfiguration of Port 305A such that access is again restricted to Restricted Subset 205. A logoff may alternatively be responsive to a timeout of communication with Access Device 230, a SNMP trap message indicating a connection has been broken, or the like.

[0073] According to embodiments like that disclosed in U.S. Provisional Patent Application No. 60/513,080, the disclosure of which has been incorporated herein by reference, an AP (e.g., a switch or wireless access point (WAP) which is used to connect end points to the corporate network) may be programmed to prohibit access by the PC (e.g., notebook, desktop PC, PDA, or similar computing device) to the corporate network until authentication with the authentication server passes AND an audit with the software agent with the GK (e.g., software that acts as a gatekeeper by granting or denying access to the corporate network from end points after auditing the end point based on certain criteria) passes, while still supporting the existing encryption and authentication functionality. The method used to support auditing functionality over the existing 802.1x protocol implementation is complicated and not an obvious variation of the 802.1x protocol.

[0074] According to an embodiment like that disclosed in U.S. Provisional Patent Application No. 60/513,080, the disclosure of which has been incorporated herein by reference, the auditing protocol takes place between the EP (e.g., end point which can either be a PC or network device) agent software and the GK. A client filter redirects calls for audit information to an agent on the EP and sends the responses to the 802.1x compliant AP which relays them to the EAP server. The EAP server then calls a server filter which sends the responses to the GK for evaluation. The GK sends requests for more information on the reverse path and this continues until the audit is completed. If the audit is successful, the server sends a message to the AP which enables the EP's port allowing access for the PC. If the audit fails, the port on the AP is left disabled.

[0075] According to an exemplary embodiment, client filters (CF) and server filters (SF) are added along with an agent and GK to perform audits, as highlighted in FIG. 5. There may be one or more instances of the CF and SF, which correspond to the separate EAP Authentication Modules (EAPM) that are supported. Note that the agent and GK are logical components. The functionality of the agent and GK can be embedded into the CF and SF, respectively, or in the case of the GK, may reside on a separate server.

[0076] The CF and SF APIs have APIs which correspond to the EAPM APIs. Therefore, the EAP Client Layer (ECL) or EAP Server Layer (ESL) can call the CF and SF instances corresponding to a particular authentication method as shown in FIGs. 6A and 6B. To the ECL and ESL, each instance of the CF and SF appears to be an EAPM which incorporates the functionality of the original EAPM prior to completion of the success response by the server EAPM.

[0077] To use the invention as disclosed in U.S. Provisional Patent Application No. 60/513,080, the disclosure of which has been incorporated herein by reference, the ECL and ESL are configured to use the instance of the CF and SF corresponding to the desired authentication method. This authentication method corresponds to an authentication method supported by one of the EAPMs.

[0078] The ECL calls the corresponding CF to perform authentication, which at first calls the appropriate EAPM to obtain the proper authentication response. The authentication response is returned by the CF to the ESL, which sends the response to the server's ESL, SF, and EAPM. This process continues until the authentication either succeeds or fails, at which time the server's authentication EAPM returns a success or failure response to the SF.

[0079] If the SF receives a success response from the server EAPM as shown in FIG. 7, the SF changes to the audit state and calls GK to obtain audit requests to send back to the client. In this state, the SF returns specially formatted audit requests to the ESL which are passed to the ECL, and eventually to the CF which sends back audit responses to the SF requests.

[0080] On the client, audit requests are passed to the agent API instead of to the client EAPM. The agent returns information about the local system, which is converted to audit responses that are sent to the server.

[0081] During the audit state, the SF and CF exchange audit requests and responses about the EP as shown in FIGs. 8A and 8B. The ECL and ESL continue to communicate with the CF and SF, but instead of calling the EAPM, the CF and SF call the agent and

GK respectively, to perform this exchange. The audit session continues until the necessary audit information has been passed to the SF.

[0082] If the audit indicates the client EP is in compliance, the SF returns a success response. If the VLAN for the EP is specified in the policy, then the VLAN that should be used for this EP is passed back as well.

[0083] If the GK determines that the EP has failed the audit, GK returns a failure response to SF which causes one of the following: (1) the SF returns a failure to ECL, and the corresponding port on the AP is left disabled, or (2) the SF returns a success response to the ECL but specifies that the EP should be set to a restricted VLAN where the EP has limited network access. In either case, the EP is isolated from the company network until it successfully passes an audit with the GK.

[0084] After the audit has been performed, "keep alives" and updates regarding changes to previous audit information are exchanged. Changes are reevaluated and if inconsistent with the current state, access to the network is modified appropriately by changing the VLAN used for the EP or by terminating access by the EP by communicating with the AP.

[0085] Several embodiments are specifically illustrated and/or described herein. However, it will be appreciated that modifications and variations are covered by the above teachings and within the scope of the appended claims without departing from the spirit and intended scope thereof. For example, the teachings herein may be applied to embodiments wherein Access Point 215 is a wireless access point and MAC addresses, or the like, are used instead of VLANs to separate traffic from different instances of Access Device 230. It is, thus, anticipated that network management techniques other than VLANs may be used to distinguish Less-Restricted Subset 210 from Restricted Subset 205. In some embodiments, various aspects of GateKeeper 225 may be incorporated into Access Point 215 and/or Router 220. GateKeeper 225 and Policy Manager 250 are each optionally implemented on a plurality of computing devices within Restricted Subset 205.

[0086] In some embodiments, GateKeeper 225 uses DHCP 260 to assign IP addresses from a restricted IP address range depending on the compliance of Access Device 230 to security policies 330A-330B. GateKeeper 225 inserts DHCP options and/or modifies the IP source addresses of DHCPDISCOVER and DHCPREQUEST packets, based on the compliance of the Access Device 230 to security policies 330A-330B. DHCP 260 is configured to provide an address from the restricted address range or the less-restricted address range based on the source address and/or options present in the DHCP request or discover packets that have been modified by GateKeeper 225. In some embodiments, the insertion of DHCP options and/or modification of IP source addresses may be used to characterize restricted and less-restricted subnets, rather than configuring port associations with VLANs as discussed herein.

[0087] The embodiments discussed herein are illustrative of the present invention. As these embodiments of the present invention are described with reference to illustrations, various modifications or adaptations of the methods and or specific structures described may become apparent to those skilled in the art. All such modifications, adaptations, or variations that rely upon the teachings of the present invention, and through which these teachings have advanced the art, are considered to be within the spirit and scope of the present invention. Hence, these descriptions and drawings should not be considered in a limiting sense, as it is understood that the present invention is in no way limited to only the embodiments illustrated.

CLAIMS

WHAT IS CLAIMED IS:

1. A method of granting access to a protected network, the method comprising:
 - receiving a request for access to a less-restricted subset of the protected network from an access device, the request received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;
 - applying a security policy to the access device in response to the request; using the gatekeeper to determine if requirements of the security policy are satisfied by the access device, and
 - reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when the requirements of the security policy are satisfied.
2. The method of claim 1, further comprising authenticating a user of the access device.
3. The method of claim 1, further comprising obtaining system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.
4. The method of claim 3, wherein the system data includes antivirus software status.

5. The method of claim 1, further comprising communicating between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.
6. The method of claim 5, wherein the system data includes information regarding devices connected to the access device.
7. The method of claim 5, wherein the system data includes information regarding computing code executing on the access device.
8. The method of claim 1, further comprising selecting the security policy from among a plurality of security policies.
9. The method of claim 8, wherein selecting the security policy is responsive to an identity of the access device or an identity of a user of the access device.
10. The method of claim 1, wherein the access point is a network switch.
11. The method of claim 1, wherein the access point is a wireless access point.
12. The method of claim 1, wherein the access point is a remote access virtual private network.
13. The method of claim 1, wherein the gatekeeper is accessible to elements of the less-restricted subset of the protected network.
14. The method of claim 1, wherein the restricted subset of the protected network is characterized by an access control list.

15. The method of claim 14, wherein access to the restricted subset of the protected network is responsive to a switch port configured to communicate with the protected network subject to the access control list.

16. A computer-readable storage medium having stored thereon a program, the program being executable by a processor to perform a method for controlling access to a computer network, the method comprising:

receiving a request for access to a less-restricted subset of the protected network from an access device, the request being received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;

applying a security policy to the access device in response to the request; and

reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when requirements of the security policy are satisfied.

17. The computer readable storage medium of claim 16, wherein the program is further executable by a processor to authenticate a user of the access device.

18. The computer readable storage medium of claim 16, wherein the program is further executable by a processor to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

19. The computer readable storage medium of claim 18, wherein the system data includes antivirus software version data.

20. The computer readable storage medium of claim 16, wherein the program is further executable to communicate between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

21. The computer storage readable medium of claim 20, wherein the system data includes information regarding devices connected to the access device.

22. The computer readable storage medium of claim 16, wherein the program is further executable to communicate between the gatekeeper and an agent executing on the access device to monitor security status of the access device after reconfiguring the communication port for communicating between the access device and the less-restricted subset.

23. The computer readable storage medium of claim 22, wherein the system data includes information regarding computing code executing on the access device.

24. The computer readable storage medium of claim 16, wherein the program is further executable to select the security policy from among a plurality of security policies.

25. The computer readable storage medium of claim 24, wherein selecting the security policy is responsive to an identity of the access device or an identity of a user of the access device.

26. The computer readable storage medium of claim 24, wherein selecting the security policy is responsive to an identity of elements within the less-restricted subset of the protected network to which access is requested.

27. The computer readable storage medium of claim 16, wherein the program is further executable to update the access device when requirements of the security policy are not satisfied.

28. The computer readable storage medium of claim 16, wherein the gatekeeper is accessible to elements of the less-restricted subset of the protected network.

29. The computer readable storage medium of claim 16, wherein the restricted subset of the protected network is characterized by an access control list.

30. The computer readable storage medium of claim 29, wherein access to the restricted subset of the protected network is responsive to a VLAN configured to communicate with the protected network subject to the access control list.

31. The computer readable storage medium of claim 29, wherein access to the restricted subset of the protected network is responsive to a switch port configured to communicate with the protected network subject to the access control list.

ABSTRACT

A new approach to network security includes manipulating an access point such that an initial communication from an external device is passed to a restricted subset of a computing network including a gatekeeper. The gatekeeper is configured to enforce a security policy against the external device before granting access to a less-restricted subset of the computing network. If requirements of the security policy are satisfied, then the gatekeeper reconfigures the access point such that further communication from the external device may be received by elements of the less-restricted subset. Enforcement of the security policy optionally includes performing a security audit of the external device.

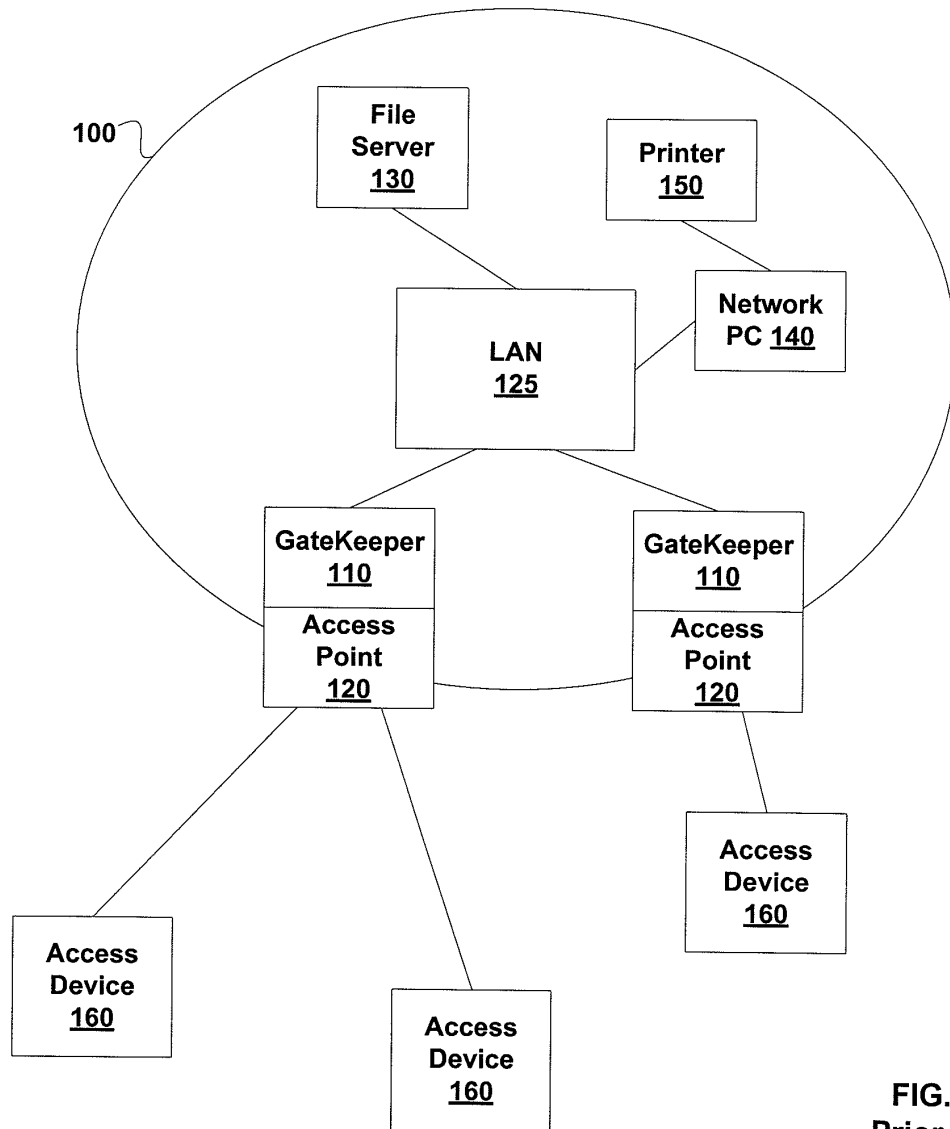


FIG. 1
Prior Art

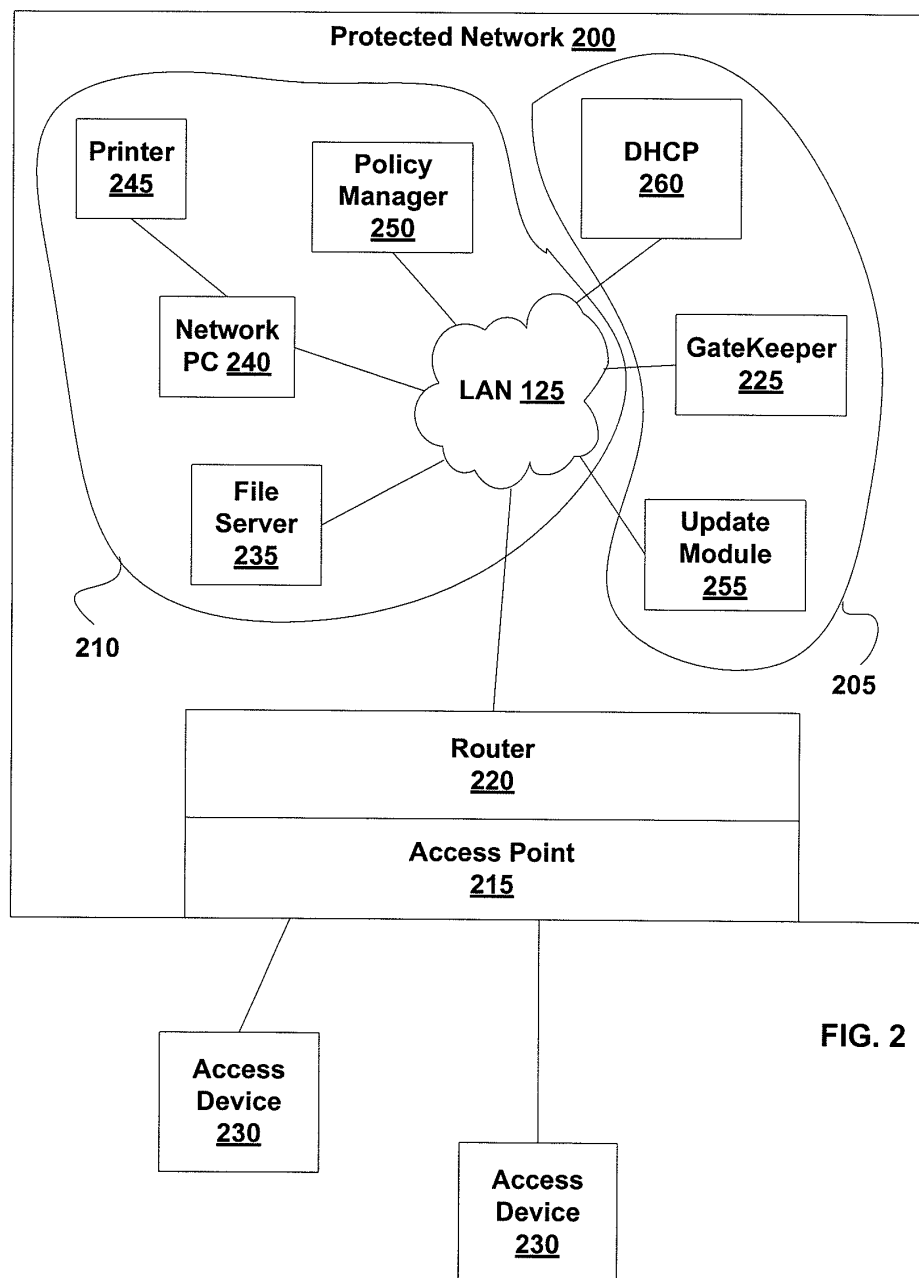


FIG. 2

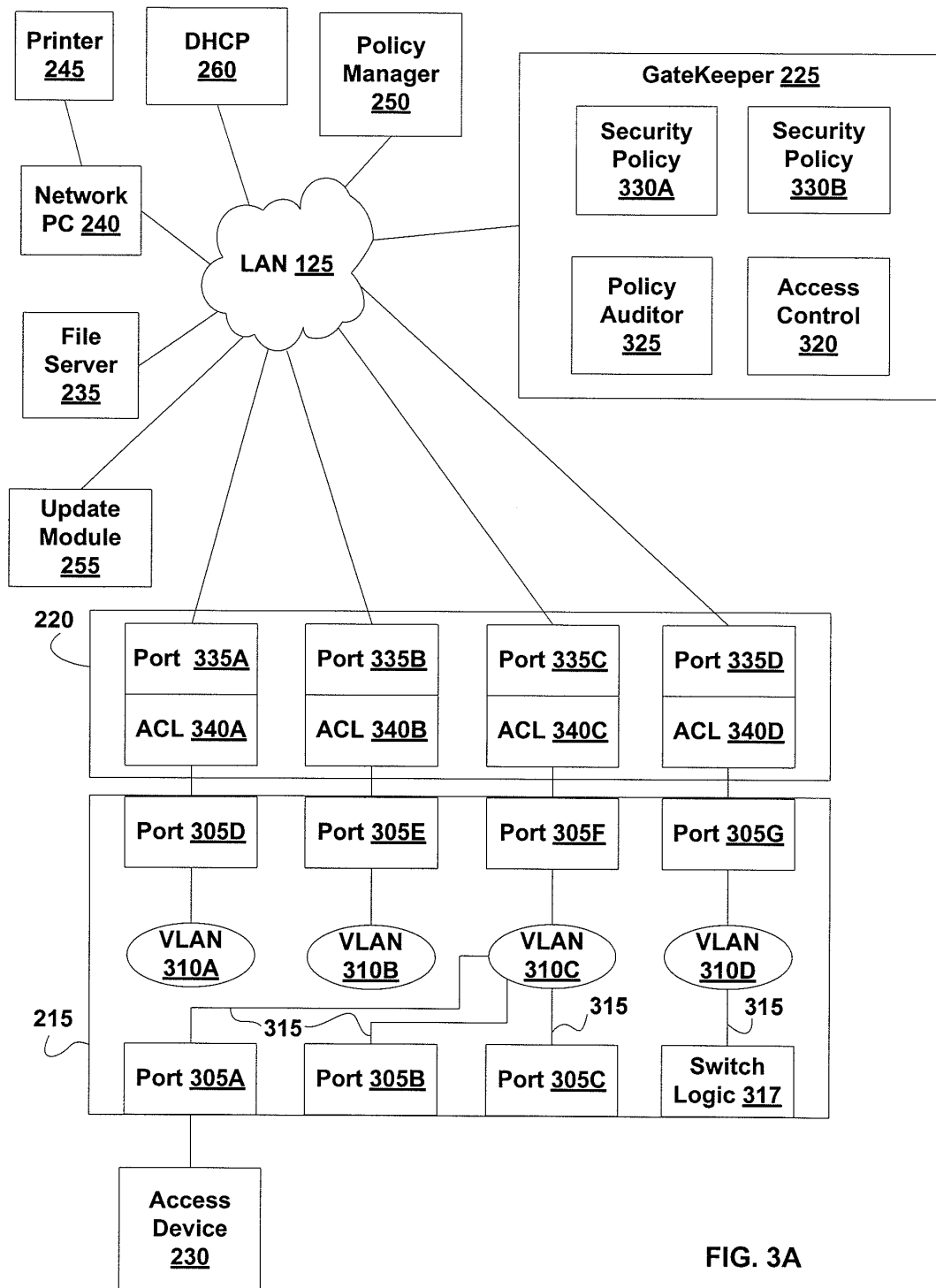


FIG. 3A

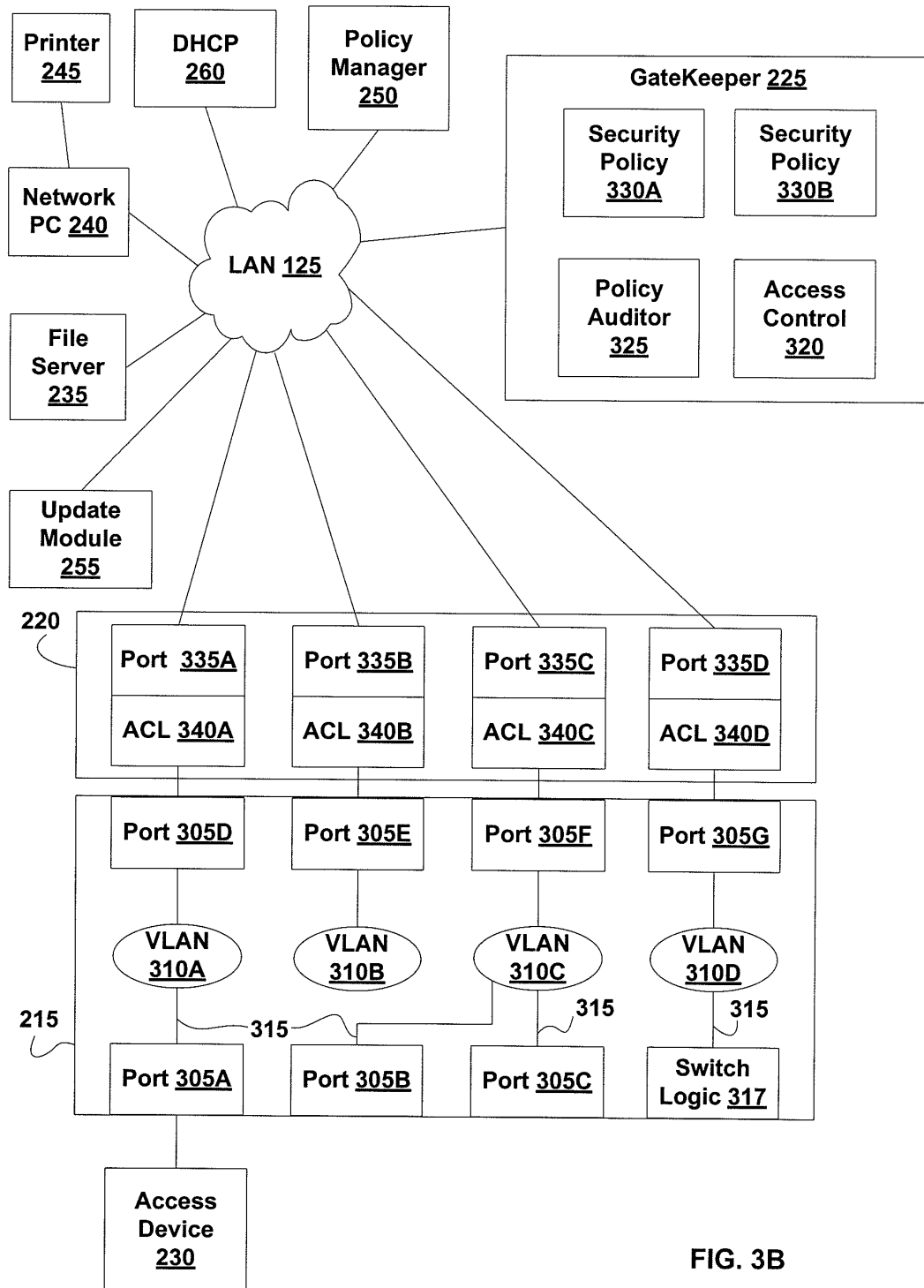


FIG. 3B

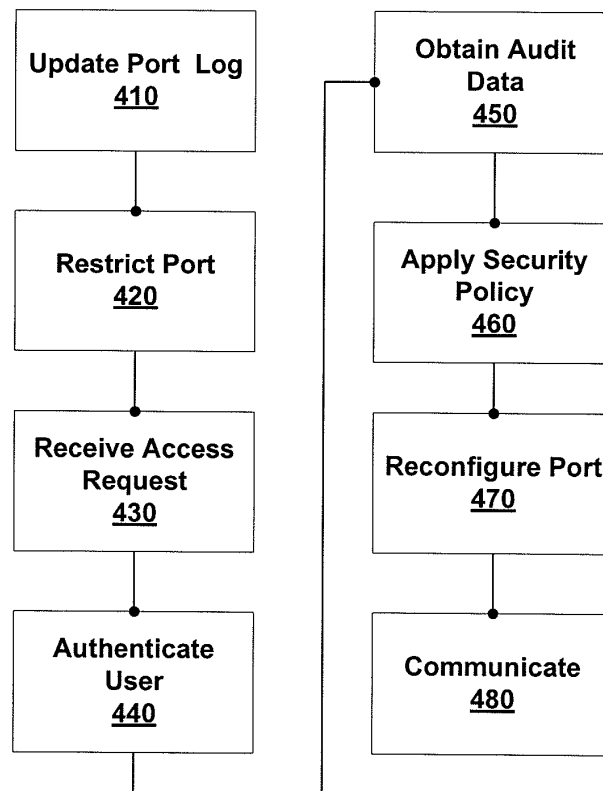


FIG. 4

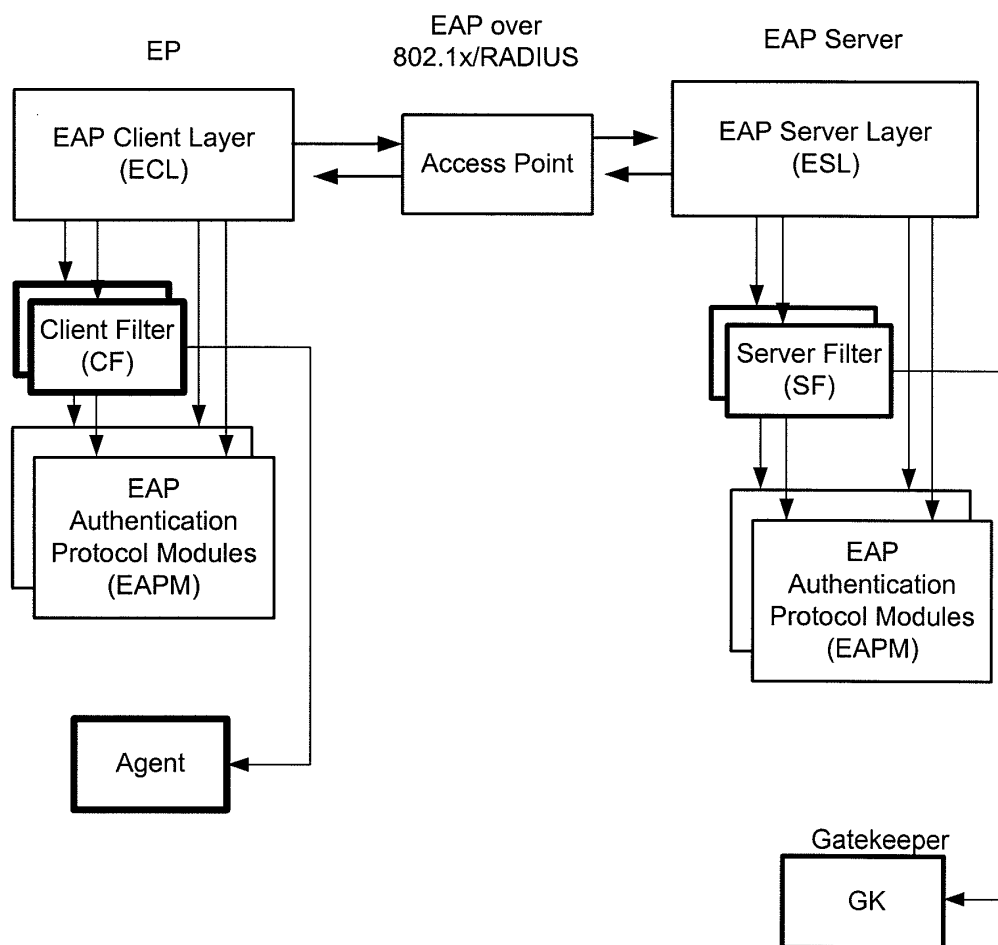


FIG. 5

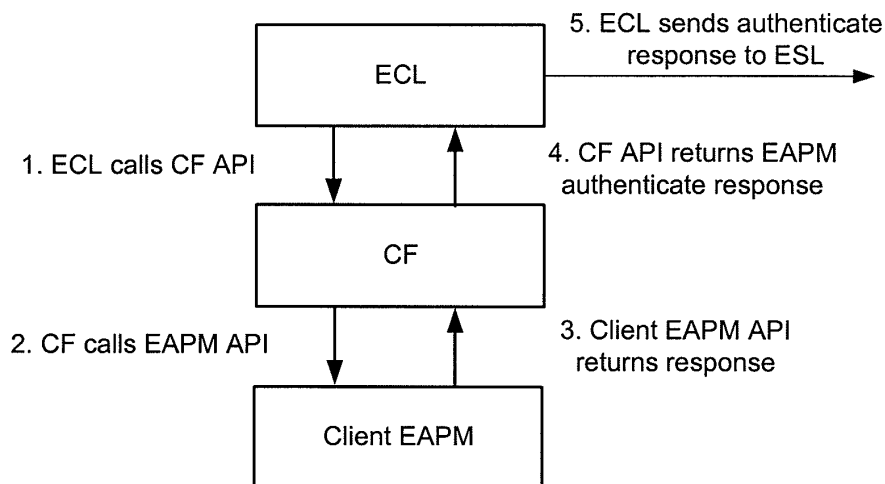


FIG. 6A

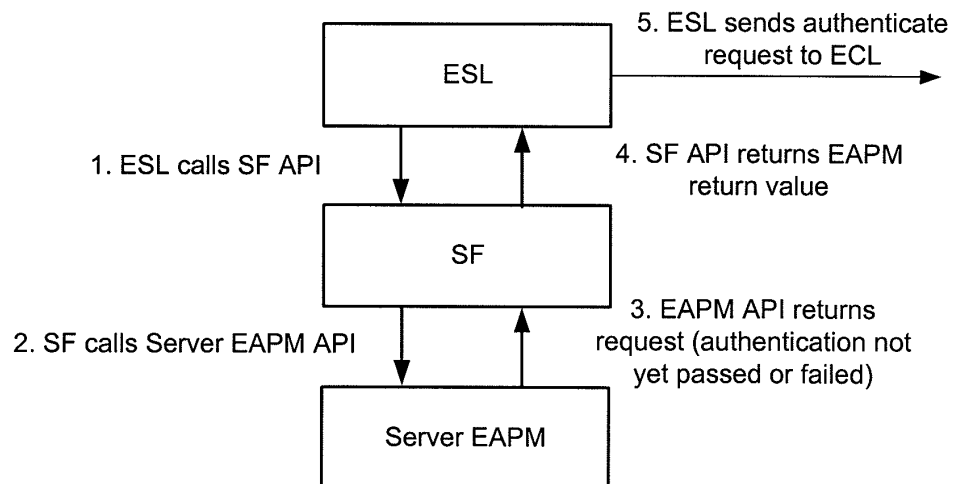


FIG. 6B

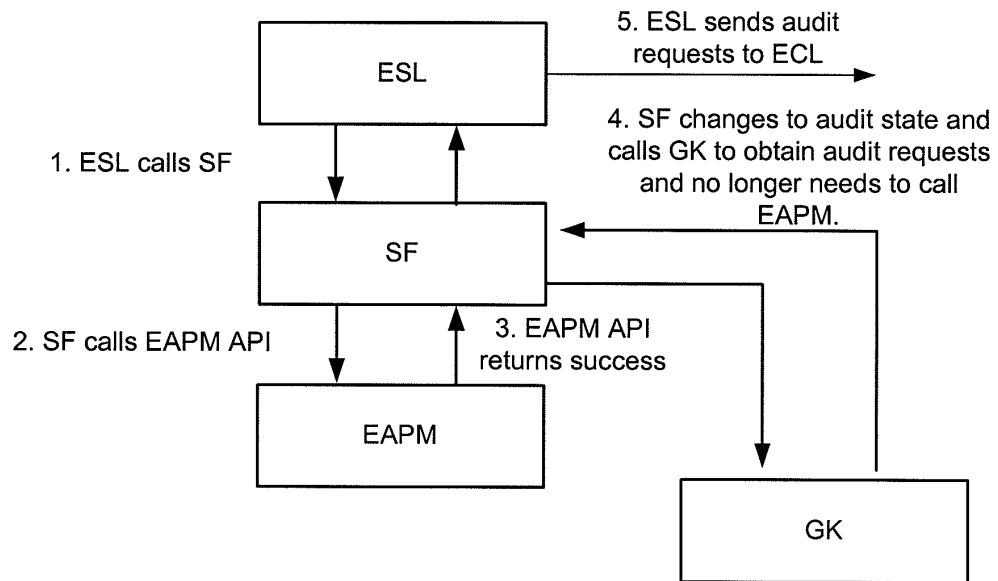


FIG. 7

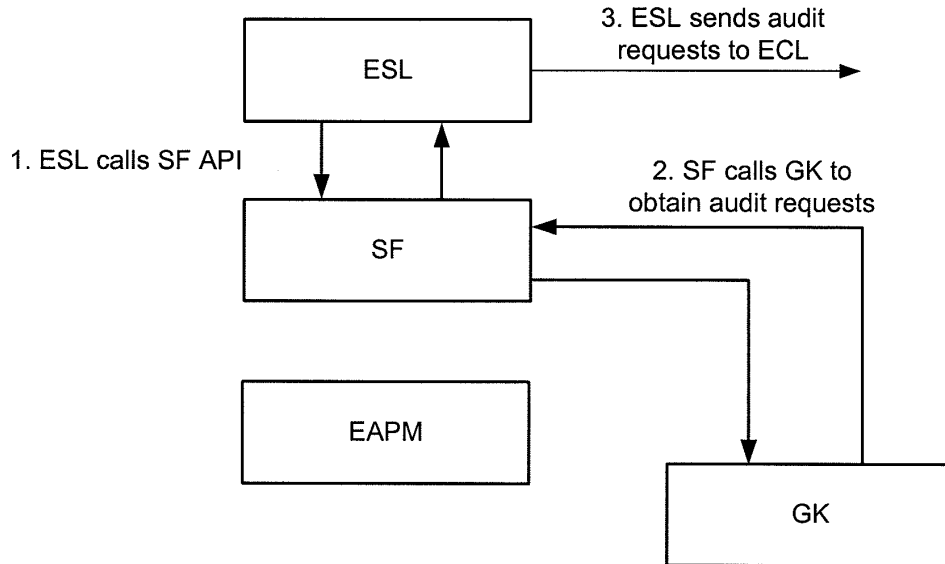


FIG. 8A

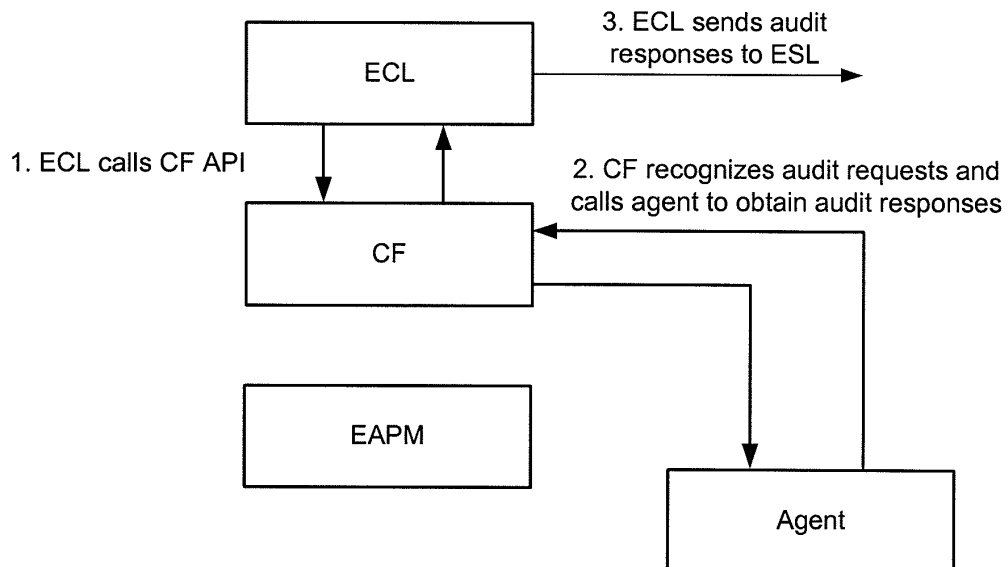


FIG. 8B

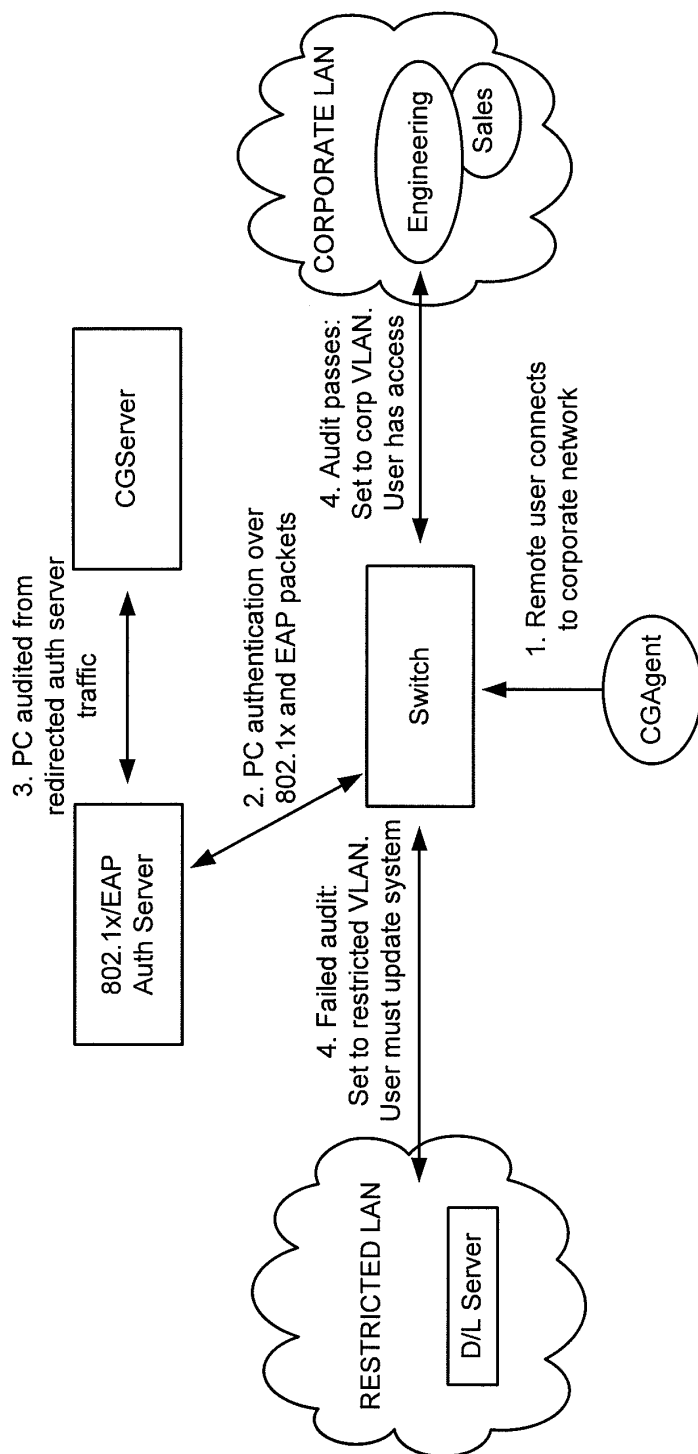


FIG. 9

Filing Date: 11/18/08

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 12/273,037	
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	82	N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	270	N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	110	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	31	minus 20 = 11	x\$26	286	x\$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *	x\$110		x\$220	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195		390	
			TOTAL	748	TOTAL	
* If the difference in column 1 is less than zero, enter "0" in column 2.						
APPLICATION AS AMENDED – PART II						
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY
OTHER THAN SMALL ENTITY						OR
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 =	X =	X =
Independent (37 CFR 1.16(h))	*	Minus ***	=	X =	X =	X =
Application Size Fee (37 CFR 1.16(s))			N/A		N/A	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			TOTAL		TOTAL	
			ADD'T FEE		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".						
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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
12/273,037	11/18/2008	2431	748	PA4693US	31	2

CONFIRMATION NO. 7491

FILING RECEIPT

22830
CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303



OC000000033561670

Date Mailed: 12/18/2008

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)

Stacey C. Lum, Los Altos, CA;
Yuhshiw Alice Lee, Saratoga, CA;

Power of Attorney: The patent practitioners associated with Customer Number 22830

Domestic Priority data as claimed by applicant

This application is a CON of 10/949,179 09/24/2004
which claims benefit of 60/505,582 09/24/2003
and claims benefit of 60/513,080 10/21/2003

Foreign Applications

If Required, Foreign Filing License Granted: 12/10/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/273,037**

Projected Publication Date: 03/26/2009

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

Systems and Methods of Controlling Network Access

Preliminary Class

726

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/273,037	11/18/2008	Stacey C. Lum	PA4693US

CONFIRMATION NO. 7491

PUBLICATION NOTICE

22830
CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303



OC000000035188859

Title: Systems and Methods of Controlling Network Access

Publication No. US-2009-0083830-A1

Publication Date: 03/26/2009

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The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)	FEE (\$)	OR		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 \$ =		OR		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))														
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APPLICATION AS AMENDED – PART II														
(Column 1)			(Column 2)			(Column 3)			SMALL ENTITY		OR OTHER THAN SMALL ENTITY			
AMENDMENT	08/17/2009		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))		* 22	Minus	** 22	= 0				X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))		* 4	Minus	***4	= 0				X \$110 =	0	OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))													
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))													
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(Column 1)			(Column 2)			(Column 3)			SMALL ENTITY		OR OTHER THAN SMALL ENTITY			
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		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))													
	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:
/JACQUELINE M. WEIR/

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Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit		2431	
	Examiner Name	Unknown		
	Attorney Docket Number		PA4693US	

U.S.PATENTS						
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	7055173	B1	2006-05-30	Chaganty et al.	
	2	7299294	B1	2007-11-20	Bruck et al.	
	3	7350226	B2	2008-03-25	Moriconi et al.	
	4	5835481		1998-11-10	Akyol et al.	
	5	6119162		2000-09-12	Li et al.	
	6	6671737	B1	2003-12-30	Snowdon et al.	
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	First Named Inventor	Stacey C. Lum		
	Art Unit		2431	
	Examiner Name	Unknown		
	Attorney Docket Number		PA4693US	

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20020023273	A1	2002-02-21	Song	
	2	20020029276	A1	2002-03-07	Bendinelli et al.	
	3	20030131262	A1	2003-07-10	Goddard	
	4	20040010719	A1	2004-01-15	Daenen	
	5	20060050703	A1	2006-03-09	Foss	
	6	20060089938	A1	2006-04-27	Leonard et al.	
	7	20070112574	A1	2007-05-17	Greene	
	8	20080209044	A1	2008-08-28	Forrester	
	9	20090043765	A1	2009-02-12	Pugh	
	10	20030012205	A1	2003-01-16	Foti et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit		2431	
	Examiner Name	Unknown		
	Attorney Docket Number		PA4693US	

	11	20040024885	A1	2004-02-05	Bush, III et al.	
	12	20050081058	A1	2005-04-15	Chang et al.	
	13	20070157306	A1	2007-07-05	Elrod et al.	

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	1	2005079706	JP		2005-03-24	Nippon Electric Company		☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		☐

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Examiner Signature		Date Considered	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	12273037
	Filing Date	2008-11-18
	First Named Inventor	Stacey C. Lum
	Art Unit	2431
	Examiner Name	Unknown
	Attorney Docket Number	PA4693US

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	12273037
	Filing Date	2008-11-18
	First Named Inventor	Stacey C. Lum
	Art Unit	2431
	Examiner Name	Unknown
	Attorney Docket Number	PA4693US

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

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☒ None

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Signature	/Tam Thanh Pham/	Date (YYYY-MM-DD)	2009-08-25
Name/Print	Tam Thanh Pham	Registration Number	50,565

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02/08/06

Number of documents : 1

US20050050365 Network unauthorized access preventing system and network unauthorized
access preventing apparatus
NEC SOFTWARE LTD NEC SYSTEM TECHNOLOGIES LTD NIPPON
ELECTRIC CO

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Network unauthorized access preventing system and network unauthorized access preventing apparatus

US20050050365

• Patent Assignee NEC SOFTWARE LTD NEC SYSTEM TECHNOLOGIES LTD NIPPON ELECTRIC CO • Inventor SEKI YOSHINAGA; HASEI SHINJI; UOTANI MIHO; MAKINO TATSUYA	• Publication Information US2005050365 A1 20050303 [US20050050365] • Priority Details 2003JP-0305246 20030828
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• **Abstract :**
(US20050050365)
There is disclosed a network unauthorized access preventing system in which in a network to which one or more information processing apparatuses and a network unauthorized access preventing apparatus are connected, an unauthorized apparatus which is not authorized to access the network is prevented from accessing the network. The system includes an information processing apparatus which sends a correct ARP response packet to the unauthorized apparatus in response to an ARP request broadcast from the unauthorized apparatus, and a network unauthorized access preventing apparatus which sends an ARP response packet containing a false MAC address as the MAC address of the information processing apparatus to the unauthorized apparatus immediately after the correct ARP response packet is sent to the unauthorized apparatus.

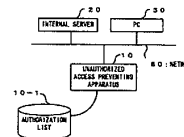


FIG. 1

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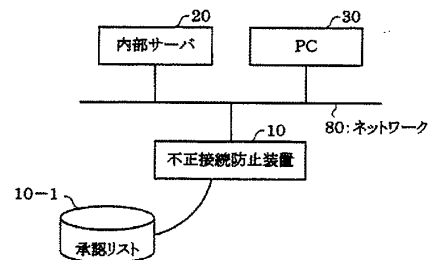
(54) 【発明の名称】 ネットワークへの不正接続防止システム、及びネットワークへの不正接続防止装置

(57) 【要約】

【課題】 単一の管理手順を用いることができ、低コストで、ネットワーク内部からの不正接続も防止できるとともに、短時間で通信が完了するプロトコルに対しても有効な不正接続防止システムを提供する。

【解決手段】 一又は二以上の情報処理装置と不正接続防止装置とが接続されたネットワークにおいて、当該ネットワークへの接続を許可されていない不許可装置 (P C 3 0) が情報処理装置へ接続することを防止する不正接続防止システムであって、不許可装置によりブロードキャストされたARPリクエストに対して、正しいARP応答パケットを不許可装置へ送信する情報処理装置 (内部サーバ2 0) と、正しいARP応答パケットが不許可装置へ送信された後に、情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信する不正接続防止装置1 0とを有する不正接続防止システム。

【選択図】 図1



【特許請求の範囲】

【請求項1】

ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止システムであって、

前記不許可装置によりブロードキャストされたARPリクエストに対して、前記情報処理装置から正しいARP応答パケットが前記不許可装置へ送信された後に、前記情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを前記不許可装置へ送信する不正接続防止装置を有する

ことを特徴とする不正接続防止システム。

【請求項2】

前記不正接続防止装置が、前記ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部を備え、

前記不正接続防止装置が、

前記ネットワーク上で通信される全てのパケットを無差別受信モードで収集し、

前記収集したパケットに含まれる送信元のMACアドレスが、前記承認リスト記憶部に存在するか否かを確認して、存在しない場合に前記パケットの送信元を前記不許可装置として検出し、

前記ARPリクエストの受信時に、所定の指定時間を設定し、

前記指定時間の経過前後にかかわらず、前記情報処理装置から前記不許可装置へ前記正しいARP応答パケットが送信された場合、前記正しいARP応答パケットを受信して、当該受信直後に、前記偽りのMACアドレスを有するARP応答パケットを前記不許可装置へ送信し、

前記指定時間の経過時まで、前記正しいARP応答パケットを受信しなかった場合、前記指定時間の経過時に、前記偽りのMACアドレスを有するARP応答パケットを前記不許可装置へ送信する

ことを特徴とする請求項1記載の不正接続防止システム。

【請求項3】

前記不正接続防止装置が、

前記不許可装置に対して、前記情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、

前記情報処理装置に対して、前記不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する

ことを特徴とする請求項1又は2記載の不正接続防止システム。

【請求項4】

前記不正接続防止装置が、

前記不許可装置に対して、前記情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、

前記情報処理装置と同一のサブネット上に存在する全ての情報処理装置に対して、前記不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する

ことを特徴とする請求項1又は2記載の不正接続防止システム。

【請求項5】

前記不正接続防止システムが、前記ネットワークに中継装置を介して接続された外部情報処理装置を有するとともに、前記不正接続防止装置が、ネットワークに接続されている中継装置のMACアドレスを格納する中継装置リスト記憶部を備え、

前記不正接続防止装置が、前記パケットに含まれる前記不許可装置が接続しようとしている情報処理装置のIPアドレスにもとづいて、前記不許可装置が、前記ネットワークに存在する情報処理装置と接続しようとしているか、又は、外部ネットワークに存在する外部情報処理装置と接続しようとしているかを判断し、外部ネットワークに存在する外部情

報処理装置と接続しようとしている場合、

前記不許可装置に対して、前記中継装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、

前記中継装置リスト記憶部にMACアドレスが格納されている全ての中継装置に対して、前記不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する

ことを特徴とする請求項1～4のいずれかに記載の不正接続防止システム。

【請求項6】

ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止システムであって、

前記ネットワーク上で通信される全てのパケットを無差別受信モードで収集してARPパケットであるかどうかを判断し、収集したARPパケットに含まれる送信元のMACアドレスが、前記ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部に存在するか否かを確認して、存在しない場合に前記ARPパケットの送信元を前記不許可装置として検出し、この不許可装置のIPアドレスとMACアドレスを、前記ネットワークへの接続を許可されていない情報処理装置のIPアドレスとMACアドレスを格納する不許可リスト記憶部に登録して、かつ、当該不許可リスト記憶部に登録されている全ての不許可装置について、それぞれの不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットをブロードキャストする不正接続防止装置を有する

ことを特徴とする不正接続防止システム。

【請求項7】

ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止装置であって、

前記ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部と、

前記ネットワーク上で通信される全てのパケットを無差別受信モードで収集するパケット収集部と、

前記収集したパケットに含まれる送信元のMACアドレスが、前記承認リスト記憶部に存在するか否かを確認し、存在しない場合に前記パケットの送信元を前記不許可装置として検出する接続可否判定部と、

前記不許可装置によりブロードキャストされたARPリクエストに対して、前記情報処理装置から正しいARP応答パケットが前記不許可装置へ送信された後に、前記情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを前記不許可装置へ送信する偽りのパケット送信部と、を有する

ことを特徴とする不正接続防止装置。

【請求項8】

前記偽りのパケット送信部が、

前記不正接続防止装置による前記ARPリクエストの受信時に、所定の指定時間を設定し、

前記指定時間の経過前後にかかわらず、前記情報処理装置から前記不許可装置へ前記正しいARP応答パケットが送信された場合、前記不正接続防止装置による当該正しいARP応答パケットの受信直後に、前記偽りのMACアドレスを有するARP応答パケットを前記不許可装置へ送信し、

前記指定時間の経過時まで、前記正しいARP応答パケットの受信がなかった場合、前記指定時間の経過時に、前記偽りのMACアドレスを有するARP応答パケットを前記不許可装置へ送信する

ことを特徴とする請求項7記載の不正接続防止装置。

【請求項9】

前記偽りのパケット送信部が、

前記不許可装置に対して、前記情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、

前記情報処理装置に対して、前記不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する

ことを特徴とする請求項7又は8記載の不正接続防止装置。

【請求項10】

前記偽りのパケット送信部が、

前記不許可装置に対して、前記情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、

前記情報処理装置と同一のサブネット上に存在する全ての情報処理装置に対して、前記不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する

ことを特徴とする請求項7又は8記載の不正接続防止装置。

【請求項11】

前記不正接続防止装置が、ネットワークに接続されている中継装置のMACアドレスを格納する中継装置リスト記憶部と、前記パケットに含まれる前記不許可装置が接続しようとしている情報処理装置のIPアドレスにもとづいて、前記不許可装置が、前記ネットワークに存在する情報処理装置と接続しようとしているか、又は、外部ネットワークに存在する外部情報処理装置と接続しようとしているかを判断するネットワーク判定部とを有し、

前記偽りのパケット送信部が、

前記不許可装置が外部ネットワークに存在する外部情報処理装置と接続しようとしている場合、

前記不許可装置に対して、前記中継装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、

前記中継装置リスト記憶部にMACアドレスが格納されている全ての中継装置に対して、前記不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する

ことを特徴とする請求項7～10のいずれかに記載の不正接続防止装置。

【請求項12】

ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止装置であって、

前記ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部と、

前記ネットワークへの接続を許可されていない情報処理装置のIPアドレスとMACアドレスを格納する不許可リスト記憶部と、

前記ネットワーク上で通信される全てのパケットを無差別受信モードで収集するパケット収集部と、

前記収集したパケットがARPパケットであるかどうかを判断し、ARPパケットである場合、当該ARPパケットに含まれる送信元のMACアドレスが、前記承認リスト記憶部に存在するか否かを確認し、存在しない場合、前記パケットの送信元を前記不許可装置として検出し、この不許可装置のIPアドレスとMACアドレスを、前記不許可リスト記憶部に登録する接続可否判定部と、

前記不許可リスト記憶部に登録されている全ての不許可装置について、それぞれの不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットをブロードキャストする偽りのパケット送信部と、を有する

ことを特徴とする不正接続防止装置。

【発明の詳細な説明】

【技術分野】

【0001】

本発明は、ネットワークへの接続が許可されていない機器を発見した場合、その機器に対してARP(Address Resolution Protocol)を偽装した

パケットを送信することにより、ネットワークへ不正に接続することを防止するネットワークへの不正接続防止システム、及びネットワークへの不正接続防止装置に関する。

【背景技術】

【0002】

近年、インターネットやイントラネットなどのネットワークにより、企業や官公庁、学校、家庭など様々な環境において、各種の情報処理が飛躍的に効率化され、これらのネットワークは、現代の社会基盤として必要不可欠なものとなっている。

一方で、ネットワークを通じてコンピュータウィルスのばらまきが行われ、重要な情報が破壊されたり、あるいはネットワークへの不正なアクセスによって、情報の漏洩が発生したりするなどの事態が急増しており、ネットワークセキュリティの向上は、重要な社会的課題となっている。

【0003】

このような状況において、ネットワークへの不正接続を防止するための装置などに関して、多くの研究開発が行われている。

例えば、特許文献1においては、不正侵入の検出をパケットから判断し、不正なパケットが検出された場合は、通信の遮断等の対策をとるとともに、不正侵入が行われていなければ、遮断されていた通信を自動的に解除する装置などが提案されている。

また、特許文献2においては、フィルタ型のIDS (Intrusion Detection System) 機能を用いて、攻撃となるようなIP (Internet Protocol) パケットを即座に遮断するとともに、IDS機能手段宛の大量のIPパケットが検出された場合にも、そのIPパケットを遮断することの可能な装置などが提案されている。

【特許文献1】特開2002-73433号公報

【特許文献2】特開2003-99339号公報

【発明の開示】

【発明が解決しようとする課題】

【0004】

しかしながら、これらのような従来の不正接続防止装置などには、以下のような問題があった。

まず、不正接続の検出時に、ハブ自身がフィルタリングすることによって不正接続を防止する装置などにおいては、それぞれのハブにフィルタリングする機能を装備させなくてはならず、そのためにコストがかさむという問題があった。

これは、ハブがパケットの送信元のIPアドレスにもとづいて、不正侵入であるかどうかを判断する場合のみならず、特許文献1のように、パケット自体を解析して不正侵入であるかどうかを判断する場合についても同様に問題となるものであった。

また、ネットワークにおいて複数のハブが使用され、そのハブを提供している企業が個々に異なる場合には、各社ごとにフィルタリング機能や管理手順が異なることから、それぞれに使用可能な管理手段を設ける必要があり、さらにコストの増大を招くという問題があった。

【0005】

さらに、不正接続の検出時に、VPN (Virtual Private Network) 装置やファイアウォールの設定を変更することにより不正接続を防止する装置などにおいては、外部からの不正接続を防御することはできるものの、ネットワーク内部の不正接続を防止することができないという問題があった。

また、不正接続の検出時に、TCP (Transmission Control Protocol) のリセットパケットを送信することにより不正接続を防止する装置などの場合、HTTP (Hyper Text Transfer Protocol) など短時間で通信が完了するプロトコルにおいては、リセットパケットを送信した時点で既に通信が完了してしまい、不正接続の防止が間に合わない場合があるという問題があった。

【0006】

本発明は、上記の事情にかんがみなされたものであり、ネットワーク上に一台の不正接続防止装置を設置するのみで、ネットワーク全体の不正接続防止を実現することにより、単一の管理手順を用いることができ、低コストで、ネットワーク内部からの不正接続も防止できるとともに、短時間で通信が完了するプロトコルに対しても有効なネットワークへの不正接続防止システム、及びネットワークへの不正接続防止装置の提供を目的とする。

【課題を解決するための手段】

【0007】

上記目的を達成するため、本発明のネットワークへの不正接続防止システムは、ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止システムであって、不許可装置によりブロードキャストされたARPリクエストに対して、情報処理装置から正しいARP応答パケットが不許可装置へ送信された後に、情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信する不正接続防止装置を有する構成としてある。

【0008】

ネットワークへの不正接続防止システムをこのような構成にすれば、ネットワークへの接続を許可されていない情報処理装置である不許可装置が、そのネットワークに接続し、当該ネットワーク内部の情報処理装置に接続することを防止することが可能となる。

すなわち、本発明によれば、ネットワークにおける内部サーバなどに接続しようとした不許可装置は、その内部サーバのMACアドレスとして、ネットワーク上に存在しない偽りのMACアドレスを用いて内部サーバへの接続を行おうとするため、その接続に失敗することになる。

このため、不許可装置により、ネットワークの内部サーバなどが保有するデータの盗難や改ざん、ウィルスのばらまきなどが行われることを防止することが可能となる。

【0009】

また、本発明では、ルータやハブなどのハードウェアに依存しない方式を用いているため、どのような構成のネットワークに対しても適用可能となっている。

さらに、不正接続防止機能を装備したルータやハブをネットワーク内に導入する必要があることから、システム全体のコストを抑えて、不正接続の防止を図ることが可能となっている。

なお、情報処理装置には、パーソナルコンピュータやサーバなどの他、情報処理機能を搭載しているプリンタやスキャナ、ファクシミリなどの各種装置も含まれるものである。以下において、この情報処理装置を機器と称する場合がある。

【0010】

本発明のネットワークへの不正接続防止システムは、不正接続防止装置が、ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部を備え、不正接続防止装置が、ネットワーク上で通信される全てのパケットを無差別受信モードで収集し、収集したパケットに含まれる送信元のMACアドレスが、承認リスト記憶部に存在するか否かを確認して、存在しない場合にパケットの送信元を不許可装置として検出し、ARPリクエストの受信時に、所定の指定時間を設定し、指定時間の経過後にかかわらず、情報処理装置から不許可装置へ正しいARP応答パケットが送信された場合、正しいARP応答パケットを受信して、当該受信直後に、偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信し、指定時間の経過時まで、正しいARP応答パケットを受信しなかった場合、指定時間の経過時に、偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信する構成としてある。

【0011】

ネットワークへの不正接続防止システムをこのような構成にすれば、不正接続防止装置は、不許可装置へ偽りのARP応答パケットをより適切なタイミングで送信することが可能となる。

すなわち、不許可装置からARPリクエストを受け取った接続対象である内部サーバな

どの情報処理装置は、正しいMACアドレスを有するARP応答パケットを不許可装置に送信するため、この正しいMACアドレスを有するARP応答パケットが不許可装置に送信された直後に、不許可装置における当該MACアドレスを偽りのMACアドレスに書き換えてしまうことが望ましい。

このため、無差別受信モードにより、情報処理装置から不許可装置へ送信された正しいMACアドレスを有するARP応答パケットを受信した不正接続防止装置は、これを受信するとすぐに偽りのMACアドレスを有するARP応答パケットを不許可装置に送信している。

【0012】

しかし、不正接続防止装置が、情報処理装置から不許可装置へ送信された正しいMACアドレスを有するARP応答パケットの受信に失敗することなども考えられる。

このような場合にも、所定の指定時間経過時に情報処理装置のMACアドレスとして偽りのMACアドレスを不許可装置に設定しておくことにより、不正接続の防止の防止をより確実なものとするのが可能となっている。

【0013】

また、上記内部サーバなどの処理遅延などにより、不許可装置に対して、正しいMACアドレスを有するARP応答パケットの送信が遅延し、所定の指定時間を経過する場合なども考えられるが、このような場合であっても、不許可装置に対して、正しいMACアドレスを有するARP応答パケットが送信されるたびに、不正接続防止装置は、すぐに不許可装置へ偽りのMACアドレスを有するARP応答パケットを送信するため、不許可装置は再び不正接続を行うことができなくなる。

【0014】

なお、「ARPリクエストの受信時」とは、不正接続防止装置がARPリクエストを受信した時刻に厳密に限定することを意図したものではなく、ARPリクエストを送信した情報処理装置が、不許可装置として検出された時点としてとらえてもかまわないものである。すなわち、この「ARPリクエストの受信時」は、広く不正接続防止装置が不許可装置によるARPリクエストを受信したタイミングを指定しているものである。これは、以下においても同様である。

【0015】

本発明のネットワークへの不正接続防止システムは、不正接続防止装置が、不許可装置に対して、情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、情報処理装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する構成としてある。

【0016】

ネットワークへの不正接続防止システムをこのような構成にすれば、不許可装置に手入力などによって、その不正接続対象である情報処理装置の正しいMACアドレスが設定された場合であっても、その不正接続を防止することが可能となる。

すなわち、本発明によれば、情報処理装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するため、情報処理装置が不許可装置へ応答を返す際に、応答パケットが不許可装置に返却されるのを妨害することができ、不許可装置による不正接続の防止をより確実なものとするのが可能となる。

【0017】

本発明のネットワークへの不正接続防止システムは、不正接続防止装置が、不許可装置に対して、情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、情報処理装置と同一のサブネット上に存在する全ての情報処理装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する構成としてある。

【0018】

ネットワークへの不正接続防止システムをこのような構成にすれば、不許可装置が、不正接続対象である情報処理装置と同一サブネット内にある他の情報処理装置に対して、接

続を試みようとした場合についても、その接続を防ぐことが可能となる。

すなわち、本発明によれば、不許可装置に対して情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するのみならず、同一サブネットにおける全ての情報処理装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信している。

このため、同一サブネットにおける全ての情報処理装置が不許可装置へ応答を返す際に、応答パケットが不許可装置に返却されることを妨害することができ、不許可装置による不正接続の防止をより確実なものとするのが可能となる。

【0019】

本発明のネットワークへの不正接続防止システムは、不正接続防止システムが、ネットワークに中継装置を介して接続された外部情報処理装置を有するとともに、不正接続防止装置が、ネットワークに接続されている中継装置のMACアドレスを格納する中継装置リスト記憶部を備え、不正接続防止装置が、パケットに含まれる不許可装置が接続しようとしている情報処理装置のIPアドレスにもとづいて、不許可装置が、ネットワークに存在する情報処理装置と接続しようとしているか、又は、外部ネットワークに存在する外部情報処理装置と接続しようとしているかを判断し、外部ネットワークに存在する外部情報処理装置と接続しようとしている場合、不許可装置に対して、中継装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、中継装置リスト記憶部にMACアドレスが格納されている全ての中継装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する構成としてある。

【0020】

ネットワークへの不正接続防止システムをこのような構成にすれば、不許可装置が、ネットワークにおけるルータなどの中継装置を介して、外部ネットワークにおける外部情報処理装置に接続しようとした場合に、これを防止することが可能となる。

すなわち、不正接続防止装置は、不許可装置から送信されたパケットにもとづいて、不許可装置が接続しようとしている情報処理装置が外部ネットワークに存在するかどうかを確認し、外部ネットワークに存在する場合は、不許可装置に対して、中継装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、内部ネットワーク上の全ての中継装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する。

これによって、不許可装置による中継装置へのパケット送信が阻害されるとともに、中継装置から不許可装置へのパケット送信が阻害されるため、不許可装置は、外部情報処理装置との接続を行うことができず、不許可装置によるネットワークへの不正接続の防止をより確実なものとするのが可能となる。

【0021】

本発明のネットワークへの不正接続防止システムは、ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止システムであって、ネットワーク上で通信される全てのパケットを無差別受信モードで収集してARPパケットであるかどうかを判断し、収集したARPパケットに含まれる送信元のMACアドレスが、ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部に存在するか否かを確認して、存在しない場合にARPパケットの送信元を不許可装置として検出し、この不許可装置のIPアドレスとMACアドレスを、ネットワークへの接続を許可されていない情報処理装置のIPアドレスとMACアドレスを格納する不許可リスト記憶部に登録して、かつ、当該不許可リスト記憶部に登録されている全ての不許可装置について、それぞれの不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットをブロードキャストする不正接続防止装置を有する構成としてある。

【0022】

ネットワークへの不正接続防止システムをこのような構成にすれば、ネットワーク接続

を許可された情報処理装置が、内部サーバと通信するために送信したARPパケットを、不正接続をしようとしている不許可装置が受信した場合であっても、この不許可装置が内部サーバなどに接続するのを妨害することが可能となる。

すなわち、不正接続防止装置は、ARPパケットを受信すると、このARPパケットが不許可装置から送信されたものである場合は、そのIPアドレスとMACアドレスを不許可リストに登録する。そして、この不許可リストに登録されている全ての不許可装置について、そのMACアドレスを偽ったARP応答パケットをブロードキャストすることによって、不許可装置が、同一サブネット上に存在する全ての機器とやり取りすることを防止することが可能となる。

【0023】

本発明のネットワークへの不正接続防止装置は、ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止装置であって、ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部と、ネットワーク上で通信される全てのパケットを無差別受信モードで収集するパケット収集部と、収集したパケットに含まれる送信元のMACアドレスが、承認リスト記憶部に存在するか否かを確認し、存在しない場合にパケットの送信元を不許可装置として検出する接続可否判定部と、不許可装置によりブロードキャストされたARPLクエストに対して、情報処理装置から正しいARP応答パケットが不許可装置へ送信された後に、情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信する偽りのパケット送信部とを有する構成としてある。

【0024】

ネットワークへの不正接続防止装置をこのような構成にすれば、不許可装置からブロードキャストされたARPLクエストに応じて、情報処理装置から正しいMACアドレスを有するARP応答パケットが不許可装置へ送信された後に、不正接続防止装置から偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信することにより、不許可装置におけるARPテーブルを書き換えることができる。

このため、不許可装置から情報処理装置へのパケット送信は行えなくなり、不許可装置が情報処理装置に不正に接続することを防止することが可能となる。

【0025】

本発明のネットワークへの不正接続防止装置は、偽りのパケット送信部が、不正接続防止装置によるARPLクエストの受信時に、所定の指定時間を設定し、指定時間の経過前後にかかわらず、情報処理装置から不許可装置へ正しいARP応答パケットが送信された場合、不正接続防止装置による当該正しいARP応答パケットの受信直後に、偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信し、指定時間の経過時まで、正しいARP応答パケットの受信がなかった場合、指定時間の経過時に、偽りのMACアドレスを有するARP応答パケットを不許可装置へ送信する構成としてある。

【0026】

ネットワークへの不正接続防止装置をこのような構成にすれば、情報処理装置からの正しいMACアドレスを有するARP応答パケットを不正接続防止装置が受信できなかったような場合についても、不許可装置におけるARPテーブルに情報処理装置のMACアドレスとして偽りのMACアドレスを登録しておくことができる。

これによって、不許可装置による情報処理装置への接続を妨害し、不正接続の防止効果を一層高めることが可能となる。

【0027】

本発明のネットワークへの不正接続防止装置は、偽りのパケット送信部が、不許可装置に対して、情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、情報処理装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する構成としてある。

【0028】

ネットワークへの不正接続防止装置をこのような構成にすれば、不許可装置が情報処理装置へパケットの送信を行うことができないようになるのみならず、情報処理装置から不許可装置へパケットの送信を行うこともできないようになり、不正接続の防止をより確実なものとする事が可能となる。

【0029】

本発明のネットワークへの不正接続防止装置は、偽りのパケット送信部が、不許可装置に対して、情報処理装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、情報処理装置と同一のサブネット上に存在する全ての情報処理装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する構成としてある。

【0030】

ネットワークへの不正接続防止装置をこのような構成にすれば、不許可装置が情報処理装置へパケットの送信を行うことができないようになるのみならず、その情報処理装置と同一サブネット上に存在する全ての情報処理装置が不許可装置へパケットの送信を行うことができないようにすることができる。

このため、不許可装置が、ネットワークにおける一の情報処理装置に接続しようとした場合、同一サブネット上に存在する全ての情報処理装置からのパケットを受け取ることができなくなり、不許可装置によるネットワークへの不正接続の防止をより強固なものとする事が可能となる。

【0031】

本発明のネットワークへの不正接続防止装置は、不正接続防止装置が、ネットワークに接続されている中継装置のMACアドレスを格納する中継装置リスト記憶部と、パケットに含まれる不許可装置が接続しようとしている情報処理装置のIPアドレスにもとづいて、不許可装置が、ネットワークに存在する情報処理装置と接続しようとしているか、又は、外部ネットワークに存在する外部情報処理装置と接続しようとしているかを判断するネットワーク判定部とを有し、偽りのパケット送信部が、不許可装置が外部ネットワークに存在する外部情報処理装置と接続しようとしている場合、不許可装置に対して、中継装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信するとともに、中継装置リスト記憶部にMACアドレスが格納されている全ての中継装置に対して、不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットを送信する構成としてある。

【0032】

ネットワークへの不正接続防止装置をこのような構成にすれば、不許可装置が、ルータなどの中継装置を経由して、外部ネットワークにおける情報処理装置に不正接続しようとした場合、中継装置から不許可装置へのパケット送信を行えなくすることができるとともに、不許可装置から中継装置へのパケット送信を行えなくすることも可能となる。

このため、不許可装置によるネットワークへの不正接続をさらに効果的に防止することが可能となる。

【0033】

本発明のネットワークへの不正接続防止装置は、ネットワークへの接続を許可されていない不許可装置が、当該ネットワークにおける一又は二以上の情報処理装置へ接続することを防止する不正接続防止装置であって、ネットワークへの接続を許可された情報処理装置のMACアドレスを格納する承認リスト記憶部と、ネットワークへの接続を許可されていない情報処理装置のIPアドレスとMACアドレスを格納する不許可リスト記憶部と、ネットワーク上で通信される全てのパケットを無差別受信モードで収集するパケット収集部と、収集したパケットがARPパケットであるかどうかを判断し、ARPパケットである場合、当該ARPパケットに含まれる送信元のMACアドレスが、承認リスト記憶部に存在するか否かを確認し、存在しない場合、パケットの送信元を不許可装置として検出し、この不許可装置のIPアドレスとMACアドレスを、不許可リスト記憶部に登録する接続可否判定部と、不許可リスト記憶部に登録されている全ての不許可装置について、それ

それぞれの不許可装置のMACアドレスとして偽りのMACアドレスを有するARP応答パケットをブロードキャストする偽りのパケット送信部とを有する構成としてある。

【0034】

ネットワークへの不正接続防止装置をこのような構成にすれば、ネットワークへの接続が許可されていない不許可装置が登録されている不許可リストにもとづいて、不許可装置のMACアドレスを偽ったARP応答パケットをブロードキャストすることができるため、不許可装置が、同一サブネット上に存在する全ての機器と通信することを防ぐことが可能となる。

【発明の効果】

【0035】

本発明によれば、ネットワークへの接続を許可されていないパーソナルコンピュータなどの不許可装置が、内部サーバや、その他の同一サブネット上に存在する機器に接続することを防止できるとともに、ルータなどを經由して、外部ネットワークにおける機器に接続することも防止することが可能となる。

このため、不許可装置によるデータの盗難、改ざん、ウィルスのばらまき等を防ぐことができるとともに、個人のコンピュータを社内のネットワークに接続することにより社内システムのセキュリティが低下することなども防止することが可能となる。

【0036】

また、従来の短時間で通信が完了するプロトコルにおいて、リセットパケットにより不正接続を防止しようとした場合、これを送信した時点ですでに通信が完了し、防止が間に合わないことがあったが、本発明によれば、このような問題は生じることがない。

さらに、本発明は、ルータやハブなどのハードウェアに依存しない方式を用いて不正接続の防止を実現しているため、ネットワークの構成に制限を受けることなく、様々な環境に柔軟に適用することが可能なものとなっており、かつ、不正接続防止機能を装備したルータやハブを導入する必要があることから、システム全体のコスト削減も可能となっている。

【発明を実施するための最良の形態】

【0037】

以下、本発明の実施形態につき、図面を参照して説明する。

【第一実施形態】

まず、本発明の第一実施形態の構成について、図1及び図2を参照して説明する。図1は、本実施形態のネットワークへの不正接続防止システムの構成を示すブロック図である。図2は、同システムにおける不正接続防止装置の構成を示すブロック図である。

【0038】

図1に示すように、本実施形態のネットワークへの不正接続防止システムは、不正接続防止装置10、承認リスト10-1、内部サーバ20、及びネットワーク80を有しており、このネットワーク80に対して、PC30が不正に接続しようとしている。

不正接続防止装置10は、ネットワークへの接続を許可された機器情報を有する承認リスト10-1にもとづいて、ネットワークへの接続が許可されていない機器が不正にネットワークへ接続することを防止する装置である。

この不正接続防止装置10は、ネットワークに不正に接続されたPC30が内部サーバ20にアクセスした場合、内部サーバ20のMACアドレスを偽ったARP応答パケットをPC30に送信し、PC30のARPテーブルを書き換える。

【0039】

不正接続防止装置10は、図2に示すように、承認リスト記憶部10-1（承認リスト10-1）、パケット収集部10-2、接続可否判定部10-3、偽りのパケット送信部10-4を有している。

承認リスト記憶部10-1は、ネットワークへの接続が許可された機器のMACアドレスを格納する記憶装置である。この承認リストは、あらかじめ不正接続防止装置10に格納しておく。本実施形態においては、PC30のMACアドレスは、承認リスト記憶部1

0-1に登録されていないものとしている。

なお、承認リスト記憶部10-1を不正接続防止装置10の内部に保有させる必要はなく、外部記憶装置として備えてもよいことは言うまでもない。

【0040】

パケット収集部10-2は、ネットワーク80上に流れている全てのパケットを無差別受信モードで収集し、これを接続可否判定部10-3に受け渡す。

接続可否判定部10-3は、パケット収集部により収集されたパケットに含まれる送信元のMACアドレスにもとづき承認リスト記憶部10-1を参照し、その機器がネットワークへの接続を許可されているものであるかどうかを判定する。

すなわち、送信元のMACアドレスが、承認リスト記憶部10-1に存在しない場合は、そのパケットの送信元を、ネットワークへの接続を許可されていない不許可装置として検出し、そのパケットを偽りのパケット送信部10-4に通知する。

偽りのパケット送信部10-4は、不許可装置に対して、ネットワークへの不正接続を防止する偽りのパケットを送信する。

【0041】

内部サーバ20は、PC30からの要求を受信し、応答をPC30へ返信する情報処理装置である。

PC30は、ネットワークに不正に接続され、内部サーバ20などへのアクセスを試みる情報処理装置である。

ネットワーク80は、従来公知の任意好適な公衆回線、商業回線又は専用回線を用いることができる。また、ネットワーク80は、不正接続防止装置10、内部サーバ20、PC30のそれぞれの間を、無線あるいは有線で接続可能な回線であり、例えば、公衆回線網、専用回線網、インターネット回線網及びイントラネット網により構成することができる。

【0042】

次に、本実施形態のネットワークへの不正接続防止システムにおける処理手順について、図3を参照して説明する。

同図は、本実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

【0043】

まず、不正接続防止装置10のパケット収集部10-2が、パケット収集ループを開始することによりネットワーク上に流れている全てのパケットを無差別受信モードで収集する(ステップA1)。PC30から内部サーバ20に接続するためのARPリクエストがブロードキャストされた場合も、そのARPリクエストは、ステップA1において収集される。

次に、接続可否判定部10-3は、受信したパケットにおける送信元の機器のMACアドレスが、承認リスト10-1に存在するかどうかを確認することによって、その送信元の機器が、ネットワークへの接続を許可されたものであるかどうかを判断する(ステップA2)。

【0044】

受信したパケットの送信元の機器のMACアドレスが、承認リスト10-1に存在する場合、その機器については、ネットワークへの接続を防止しない(ステップA3)。

受信したパケットの送信元の機器のMACアドレスが、承認リスト10-1に存在しない場合、その機器に対して、ネットワークへの不正接続を防止するための偽りのパケットを送信する(ステップA4)。

これによって、そのMACアドレスが承認リスト10-1に登録されていないPC30が、内部サーバ20と通信を行うことを防止することが可能となっている。

【0045】

ここで、偽りのパケットによる不正接続の防止は、内部サーバ20のMACアドレスをMs、IPアドレスをIsとし、ネットワーク上に存在しないMACアドレスをMxとし

た場合、PC30に対して、IPアドレスIsに対応するMACアドレスはMxであることを示すARP応答パケットを送信することにより実現している。

すなわち、不正接続防止装置10からPC30に対して、このようなARP応答パケットを送信することにより、以後、PC30は、内部サーバ20にパケットを送信する際に、IPアドレスIsに対応するMACアドレスとしてMx宛にパケットを送信することとなる。これによって、PC30のパケットが内部サーバ20に到着することを防止している。

【0046】

次に、PC30への偽りのパケットの送信タイミングについて、さらに詳細に説明する。

PC30、内部サーバ20、及び不正接続防止装置10は、それぞれ以下のような順序でやり取りを行う。

(1) PC30が、内部サーバ20に通信するためのARPリクエストをネットワーク80にブロードキャストする。

(2) 内部サーバ20が、正しいARP応答パケット(IPアドレス: Is, MACアドレス: Ms)をPC30へ送信する。

(3) 不正接続防止装置10が、偽りのARP応答パケット(IPアドレス: Is, MACアドレス: Mx)をPC30へ送信することにより、PC30におけるARPテーブルを書き換える。

【0047】

ここで、不正接続防止装置10は、原則として(2)のパケットをトリガとして、(3)のパケットを送信するが、それ以外にも以下のような動作により(3)のパケットを送信する。

不正接続防止装置10は、まず、(1)のパケットを受信したタイミングで、所定の指定時間を設定する。

そして、指定時間が経過する前に(2)のパケットを受信した場合は、すぐに(3)のパケットを送信する。

【0048】

(2)のパケットを受信することなく指定時間が経過した場合は、その指定時間の経過時に、(3)のパケットを送信する。この場合、(3)のパケットの送信後、(2)のパケットが送信されることにより、PC30が内部サーバ20と通信できてしまうという問題が生じるが、不正接続防止装置10は、(2)のパケットを受信するたびに、すぐに(3)のパケットを送信するため、再びPC30が内部サーバ20と通信することを防止することが可能となっている。

【0049】

なお、不正接続防止装置10において、受信したパケットが(2)のパケットであることは、(1)のパケットにおける送信先のIPアドレスが、送信元のIPアドレスに設定されたARP応答パケットであることを確認することによって行うことが可能である。この動作は、接続可否判定部10-3又は偽りのパケット送信部10-4のいずれかに行わせるようにすることが好ましい。

以上の処理タイミングについては、以降の実施形態において、PC30が不正に通信しようとする相手が、第一実施形態における機器と異なる対象である場合であっても、同様のものとすることができる。

【0050】

〔第二実施形態〕

次に、本発明の第二実施形態について、図4を参照して説明する。同図は、本実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

本実施形態は、内部サーバ20のMACアドレスMsがPC30に静的に設定された場合にも対応可能な点で第一実施形態と異なる。

【0051】

すなわち、第一実施形態では、ネットワークに不正接続されたPC30を騙すことで不正接続の防止を実現しているが、PC30において、内部サーバ20のMACアドレスMsが、例えば手入力などによって正しく設定し直された場合などには、PC30から内部サーバ20へのパケットの送信が可能となってしまう。

本実施形態は、このような問題を解決するために、第一実施形態におけるアルゴリズムに改良を加えたものである。

【0052】

本実施形態における不正接続防止システムの構成については、図1及び図2に示す第一実施形態におけるものと同様のものを用いることができるが、本実施形態における不正接続防止装置10の偽りのパケット送信部10-4は、PC30に偽りのパケットを送信するのみならず、内部サーバ20に対しても偽りのパケットを送信する。その他の構成については、第一実施形態におけるものと同様である。

【0053】

図4において、ステップA1～A4は、図3に示す第一実施形態におけるものと同様である。

しかし、本実施形態では、不正接続防止装置10は、PC30に対して、第一実施形態における場合と同様の偽りのパケットを送信する（ステップA4）ことに加え、内部サーバ20に対しても、偽りのパケットを送信する（ステップB1）。

これによって、内部サーバ20がPC30に応答を返す際に、その応答パケットがPC30に返却されるのを妨害し、PC30の不正接続の防止をより確実なものにすることが可能となっている。

【0054】

ここで、内部サーバ20へ送信する偽りのパケットは、PC30のMACアドレスをMp、IPアドレスをIpとすると、IPアドレスIpに対応するMACアドレスはMxであることを示すARP応答パケットである。

これにより、以後、内部サーバ20がPC30に応答パケットを送信する際、IPアドレスIpに対応するMACアドレスとしてMx宛にパケットを送信してしまい、パケットがPC30に到着することを防止することが可能となっている。

【0055】

【第三実施形態】

次に、本発明の第三実施形態について、図5、図6を参照して説明する。図5は、本実施形態のネットワークへの不正接続防止システムの構成を示すブロック図である。図6は、本実施形態のネットワークへの不正接続防止システムにおける不正接続防止装置の構成を示すブロック図である。

本実施形態は、不正に接続されたPC30がルータ40を介して外部サーバ50に接続しようと試みる場合にも、その不正接続を防止することが可能となる点で第二実施形態と異なる。

【0056】

すなわち、第二実施形態では、ネットワーク内部における不正接続を防止することはできるが、図5に示すように、不正に接続されたPC30がルータ40を経由して外部サーバ50と通信する場合、パケットは外部サーバ50ではなくルータ40のMACアドレスに向けて送信されるため、第一実施形態や第二実施形態のアルゴリズムにより、外部サーバ50のMACアドレスを偽装することは無意味となる。

本実施形態は、このような問題を解決するために、第二実施形態におけるアルゴリズムに改良を加えたものである。

【0057】

本実施形態の不正接続防止装置10は、図6に示すように、承認リスト記憶部10-1、パケット収集部10-2、接続可否判定部10-3、ルータリスト記憶部10-5（ルータリスト10-5）、ネットワーク判定部10-6、偽りのパケット送信部10-7を

有している。

承認リスト記憶部10-1, パケット収集部10-2, 接続可否判定部10-3については、図2に示すものと同様である。

【0058】

ルータリスト記憶部10-5は、ネットワーク80に接続されているルータのMACアドレスを格納する記憶装置である。このルータリストも、承認リストと同様に、あらかじめ不正接続防止装置10に格納しておく。

なお、ルータリストについても不正接続防止装置10の内部に保有させる必要はなく、外部記憶装置として備えてもよいことは言うまでもない。

【0059】

ネットワーク判定部10-6は、接続可否判定部10-3によって、PC30が不許可装置として検出されると、このPC30の通信相手が、内部ネットワークに存在するかどうかを判定し、その結果をパケットの情報とともに偽りのパケット送信部10-7へ通知する。この内部ネットワークに存在するかどうかの判定は、PC30によりブロードキャストされたARPリクエストにおける送信元のIPアドレスにもとづいて、そのIPアドレスが同一サブネット内のアドレスであるかどうかを判断することにより行うことができる。

【0060】

偽りのパケット送信部10-7は、PC30の通信相手が、内部ネットワークにおける機器である場合は、第二実施形態における場合と同様に、PC30に偽りのパケットを送信するとともに、内部サーバ20に対しても偽りのパケットを送信する。

PC30の通信相手が、外部ネットワークにおける機器である場合は、PC30に偽りのパケットを送信するとともに、ルータリスト記憶部10-5に登録されている全てのルータに対して偽りのパケットを送信する。

【0061】

次に、本実施形態のネットワークへの不正接続防止システムにおける処理手順について、図7を参照して説明する。

同図は、本実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

図7において、ステップA1～A3までは、図4に示す第二実施形態におけるものと同様である。

【0062】

次に、不正接続防止装置10のネットワーク判定部10-6は、PC30の通信相手が内部ネットワークに存在するかどうかを判断する(ステップC1)。

PC30の通信相手が内部ネットワークに存在する場合は、PC30に偽りのパケットを送信し(ステップA4)、さらに内部サーバ20に対して偽りのパケットを送信する(ステップB1)。

【0063】

PC30の通信相手が外部ネットワークに存在する場合は、PC30にステップA4におけるものとは異なる偽りのパケットを送信し(ステップC2)、さらにルータリスト10-5に登録された全てのルータに対して偽りのパケットを送信する(ステップC3)。

これによって、ルータ経由の通信に関しても、PC30の不正接続を防止することが可能となっている。

【0064】

ここで、PC30が外部ネットワークへ接続する場合に、不正接続防止装置10がPC30へ送信する偽りのパケットは、ルータ40のMACアドレスをMr、IPアドレスをIrとすると、IPアドレスIrに対応するMACアドレスはMxであることを示すARP応答パケットである。

これにより、以後、PC30は、ルータ40にパケットを送信する際、IPアドレスIrに対応するMACアドレスとしてMx宛に送信してしまい、パケットがルータ40に到

着することを防止することが可能となっている。

【0065】

また、ルータ40へ送信する偽りのパケットは、IPアドレスIpに対応するMACアドレスはMxであることを示すARP応答パケットである。

これにより、以後、ルータは、PC30にパケットを送信する際、IPアドレスIpに対応するMACアドレスとしてMx宛にパケットを送信してしまい、パケットがPC30に到着することを防止することが可能となっている。

なお、本実施形態によれば、外部サーバ50が、サーバ以外の情報処理装置であっても、同様にPC30からの不正接続を防止することが可能である。

【0066】

〔第四実施形態〕

次に、本発明の第四実施形態について、図8を参照して説明する。同図は、本実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

本実施形態は、不正に接続されたPC30が内部サーバ20のみならず、同一サブネット内にあるその他の機器へ接続しようと試みる場合にも、その不正接続を防止することが可能となる点で第二実施形態と異なる。

すなわち、第二実施形態では、内部サーバ20への不正接続は防止できるが、同一サブネット内にあるその他の機器への不正接続を防止することはできない。

本実施形態は、このような問題を解決するために、第二実施形態におけるアルゴリズムに改良を加えたものである。

【0067】

本実施形態の構成については、図1及び図2に示す第一実施形態におけるものと同様のものを用いることができるが、本実施形態におけるネットワーク80には、内部サーバ10以外にもPC30が通信を試みる相手としての機器が存在することを想定している。

また、本実施形態における不正接続防止装置10の偽りのパケット送信部10-4は、PC30に偽りのパケットを送信するのみならず、同一サブネット上の全ての機器に偽りのパケットを送信する。その他の構成については、第一実施形態におけるものと同様である。

【0068】

図8において、ステップA1～A4は、図4に示す第二実施形態におけるものと同様である。

しかし、本実施形態では、PC30に偽りのパケットを送信する（ステップA4）ことに加え、同一サブネット上の全ての機器へ偽りのパケットを送信する（ステップD1）。これにより、内部サーバ20に限らず、同一サブネット上の全ての機器がPC30に応答を返す際に、応答パケットがPC30に返却されるのを妨害し、PC30のネットワークへの不正接続の防止をより確実なものにすることが可能となる。

【0069】

ここで、同一サブネット上の全ての機器へ送信する偽りのパケットは、IPアドレスIpに対応するMACアドレスはMxであることを示すARP応答パケットである。これにより、以降、同一サブネット上の機器がPC30に応答パケットを送信する際、IPアドレスIpに対応するMACアドレスとしてMx宛にパケットを送信してしまい、パケットがPC30に到着することを防止することが可能となる。

【0070】

〔第五実施形態〕

次に、本発明の第五実施形態について、図9、図10を参照して説明する。図9は、本実施形態のネットワークへの不正接続防止システムの構成を示すブロック図である。図10は、本実施形態のネットワークへの不正接続防止システムにおける不正接続防止装置の構成を示すブロック図である。

本実施形態は、ネットワーク接続を許可された情報処理装置が、内部サーバ20と通信

するために送信したARPパケットを、不正接続をしようとしているPCが受信した場合であっても、そのPCによる不正接続を防止することが可能となる点で第一実施形態～第四実施形態と異なる。

【0071】

すなわち、第一実施形態～第四実施形態のアルゴリズムでは、PC30が内部サーバ20に送信したARPパケットが不正接続防止処理のトリガとなっているが、この場合、図9に示すようなブロードキャストセグメント上の接続が許可された承認PC70が内部サーバ20に送信したARP要求パケットや、内部サーバ20が承認PC70に返信したARP応答パケットに対し、不正接続防止装置10は対応しない。このため、このARPパケットを不許可PC60が受信したタイミングで、不許可PC60は、承認PC70や内部サーバ20への接続が可能になってしまう。

本実施形態は、このような問題を解決するために、上記実施形態におけるアルゴリズムに改良を加えたものである。

【0072】

本実施形態のネットワークへの不正接続防止システムは、図9に示すように、承認リスト記憶部10-1と不許可リスト10-8を備えた不正接続防止装置10、内部サーバ20、不許可PC60、承認PC70を有している。

本実施形態の不正接続防止装置10は、図10に示すように、承認リスト記憶部10-1、パケット収集部10-2、不許可リスト記憶部10-8（不許可リスト10-8）、接続可否判定部10-9、偽りのパケット送信部10-10を有している。

【0073】

承認リスト記憶部10-1、パケット収集部10-2については、図2に示すものと同様である。

不許可リスト記憶部10-8は、ネットワークへの接続が許可されていない（承認リスト10-1にMACアドレスが格納されていない）PCのIPアドレスとMACアドレスを格納する記憶装置である。なお、不許可リストについても不正接続防止装置10の内部に保有させる必要はなく、外部記憶装置として備えてもよいことは言うまでもない。

【0074】

接続可否判定部10-9は、パケット収集部10-2により収集されたパケットが、ARPパケット（ARP要求、ARP応答ともに含む）であるかどうかを判断する。そして、ARPパケットについては、その送信元のMACアドレスにもとづき承認リスト記憶部10-1を参照し、送信元の機器がネットワークへの接続を許可されているものであるかどうかを判定する。さらに、送信元の機器が、ネットワークへの接続を許可されていない不許可PC60である場合、そのIPアドレスとMACアドレスを不許可リスト記憶部10-8に登録する。

偽りのパケット送信部10-10は、不許可リスト記憶部10-8に登録されている全ての不許可PC60のMACアドレスを偽ったパケットを、ブロードキャスト送信する。

【0075】

内部サーバ20は、図1に示すものと同様である。

不許可PC60は、第一実施形態～第四実施形態におけるPC30に相当するものであり、ネットワーク80への接続が許可されていない情報処理装置である。

承認PC70は、そのMACアドレスが承認リスト記憶部10-1に格納されており、ネットワーク80への接続が許可されている情報処理装置である。

【0076】

次に、本実施形態のネットワークへの不正接続防止システムにおける処理手順について、図11を参照して説明する。

同図は、本実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

図11において、ステップA1は、図3に示す第一実施形態におけるものと同様である。

【0077】

次に、不正接続防止装置10がパケットを受信した際、そのパケットがARPパケットであるかどうかを判断し(ステップE1)、ARPパケットであれば、そのパケットの送信元の機器のMACアドレスが、承認リスト記憶部10-1に存在するかどうかを判断する(ステップE2)。すなわち、送信元が不許可PC60であるか、あるいは承認PC70であるかを判断する。

送信元が不許可PC60である場合、不正接続防止装置10は、不許可PC60のIPアドレスとMACアドレスを不許可リスト10-8に登録する(ステップE3)。送信元が承認PC70である場合は、このステップを省略する。

【0078】

次に、不正接続防止装置10は、不許可リスト10-8に登録されている全ての不許可PC60について、MACアドレスを偽ったARPパケットをブロードキャスト送信する(ステップE4)。

これにより、不許可PC60が保持していた内部サーバ20のMACアドレスが正しいものに戻り、内部サーバ20に対して不正接続しようとしても、内部サーバ20はこれに応答しなくなるため、不正な接続を妨害することが可能となっている。

【0079】

ここで、不許可リスト10-8に存在する不許可PC60のIPアドレスをIpとすると、ブロードキャスト送信する上記MACアドレスを偽ったARPパケットは、IPアドレスIpに対応するMACアドレスはMxであることを示すARP応答パケットである。

これにより、以後、不許可PC60に関係ないARPパケットを不許可PC60が受信したとしても、不許可PC60が、このARPパケットを用いて不正接続を行うことを防止することが可能となっている。

【0080】

なお、上記各実施形態において、内部サーバ20、PC30、ルータ40、外部サーバ50、不許可PC60、承認PC70は、不正接続防止システム内にそれぞれ複数もたせてもかまわない。

また、以上のアルゴリズムの実装の際には、あるパケットが別のパケットの引き金となりパケットの連鎖反応が起こることによって、ネットワーク上に多数のパケットが集中して発生してしまうストーム(storm)などの現象を引き起こさないように、偽りのパケット送信を同一機器に対して行う場合、最低でも0.5秒は間をあける等の設定を行うことなどを考慮することも必要である。

【0081】

また、上記の各実施形態における接続可否判定や、偽りのパケット送信などの各処理は、ネットワークへの不正接続防止プログラムにより実行される。

このネットワークへの不正接続防止プログラムは、不正接続防止装置におけるメモリ上に展開されてCPUとの協働作業により上述の各処理部により実行される。

すなわち、本実施形態における上各処理は、ネットワークへの不正接続防止プログラムと不正接続防止装置とが協働して実現している。

【0082】

なお、本発明は以上の実施形態に限定されるものではなく、本発明の範囲内において、種々の変更実施が可能であることは言うまでもない。

例えば、不正接続防止装置における各構成要素を、より詳細な機能ごとに分割して構成するなど適宜変更することが可能である。

【産業上の利用可能性】

【0083】

社内ネットワークを有する企業における社員が、個人のコンピュータなどをそのネットワークに接続することにより、社内システムのセキュリティが低下することを防止する用途などにおいて、好適に利用することが可能である。また、部外者が、社内ネットワークに個人のコンピュータを接続して機密情報にアクセスし、その情報を持ち帰るといった情

報漏洩を防止したい場合などにも利用することが可能である。

【図面の簡単な説明】

【0084】

【図1】本発明の第一実施形態のネットワークへの不正接続防止システムの構成を示すブロック図である。

【図2】本発明の第一実施形態のネットワークへの不正接続防止システムにおける不正接続防止装置の構成を示すブロック図である。

【図3】本発明の第一実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

【図4】本発明の第二実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

【図5】本発明の第三実施形態のネットワークへの不正接続防止システムの構成を示すブロック図である。

【図6】本発明の第三実施形態のネットワークへの不正接続防止システムにおける不正接続防止装置の構成を示すブロック図である。

【図7】本発明の第三実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

【図8】本発明の第四実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

【図9】本発明の第五実施形態のネットワークへの不正接続防止システムの構成を示すブロック図である。

【図10】本発明の第五実施形態のネットワークへの不正接続防止システムにおける不正接続防止装置の構成を示すブロック図である。

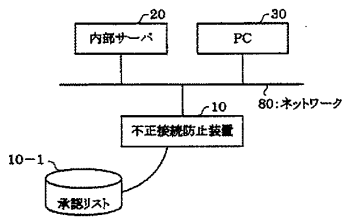
【図11】本発明の第五実施形態のネットワークへの不正接続防止システムにおける処理手順を示すフローチャートである。

【符号の説明】

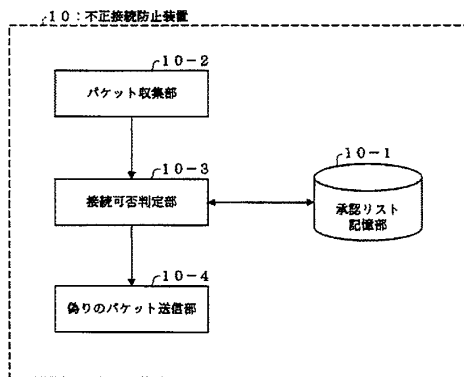
【0085】

- 10 不正接続防止装置
- 10-1 承認リスト記憶部（承認リスト）
- 10-2 パケット収集部
- 10-3, 10-9 接続可否判定部
- 10-4, 10-7, 10-10 偽りのパケット送信部
- 10-5 ルータリスト記憶部（ルータリスト）
- 10-6 ネットワーク判定部
- 10-8 不許可リスト記憶部（不許可リスト）
- 20 内部サーバ
- 30 パーソナルコンピュータ（PC）
- 40 ルータ
- 50 外部サーバ
- 60 不許可パーソナルコンピュータ（PC）
- 70 承認パーソナルコンピュータ（PC）
- 80 ネットワーク

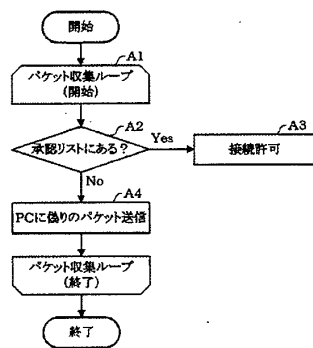
【図1】



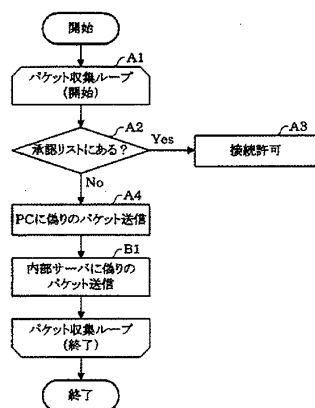
【図2】



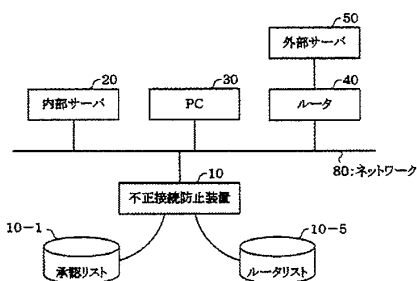
【図3】



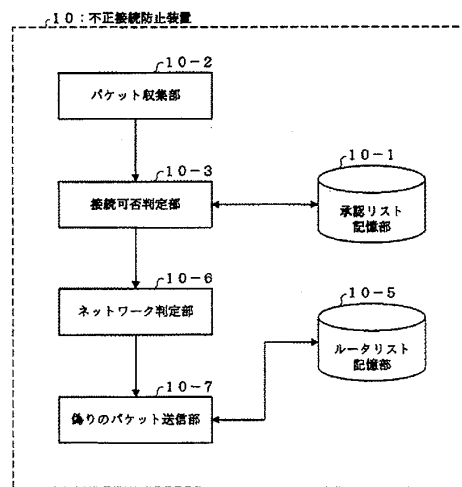
【図4】



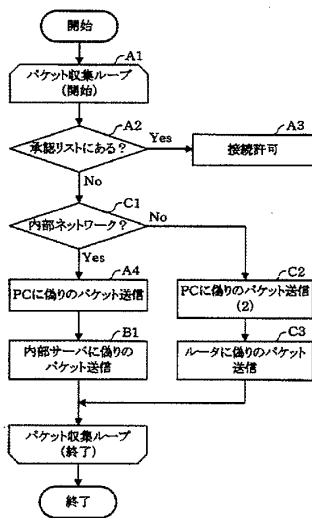
【図5】



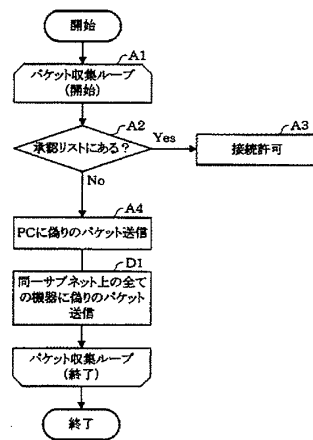
【図6】



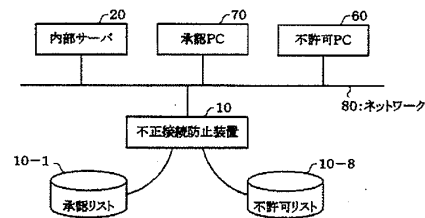
【図7】



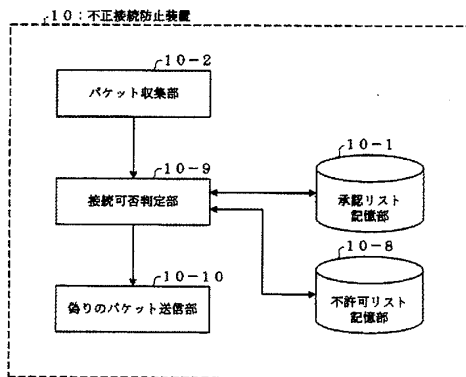
【図8】



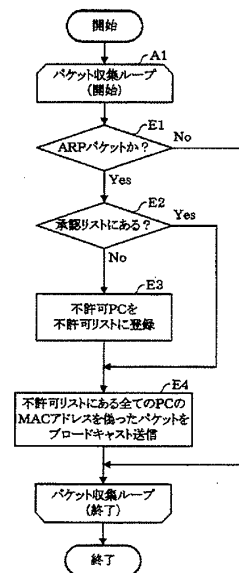
【図9】



【図10】



【図11】



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1	Transmittal Letter	4693US_Co_Pending_Apps_List.pdf	66102	no	1
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Warnings:					
Information:					

2	Transmittal Letter	4693US_IDS_Statement_Letter.pdf	77503 0a4fed8fc6671ea945d74319c5439d30e84efac4	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed (SB/08)	4693US_PTO_SB_08.pdf	38691 840741acd51b3ce3dbafe58515cb588cd04f96ce	no	5
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	Foreign Reference	4693US_Foreign_Reference.pdf	1415477 6bd02f04a482144bf58a37779faf4a745363aea1	no	24
Warnings:					
Information:					
Total Files Size (in bytes):			1597773		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): Stacey C. Lum et al.

SERIAL NO.: 12/273,037

FILED: November 18, 2008

TITLE: Systems and Methods of Controlling Network Access

EXAMINER: Unknown

GROUP ART UNIT: 2431

ATTY.DKT.NO.: PA4693US

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ALEXANDRIA, VA 22313-1450

**List of Co-Pending Patent Applications That May Be Directed
Towards Similar Subject Matter**

Examiner's Initials	Serial Number	First-Named Inventor	Title	Filing Date
	10/949,179	Stacey Lum	Systems and methods of controlling network access	9/24/2004
	11/227,679	Stacey Lum	Dynamic address assignment for access control on DHCP networks	9/14/2005
	11/356,555	Stacey Lum	Peer based network access control	2/16/2006
	11/433,225	Stacey Lum	Network access control management	5/11/2006
	11/433,723	Stacey Lum	Network Access Control Including Dynamic Policy Enforcement Point	5/11/2006
Examiner's Signature:				Date

**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): Stacey C. Lum et al.
APPLICATION NO.: 12/273,037
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TITLE: Systems and Methods of Controlling Network Access
EXAMINER: Unknown
GROUP ART UNIT: 2431
ATTY.DKT.NO.: PA4693US

MAIL STOP AMENDMENT
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**INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56, and 1.97-1.98**

SIR:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56. Additionally, the Applicants wish to make the Examiner aware of, and invite the Examiner to consider, as is appropriate, the following office actions from the following U.S. patent applications:

- Office Action mailed September 26, 2008 in U.S. patent application number 11/356,555, filed February 16, 2006.

- Office Action mailed March 10, 2009 in U.S. patent application number 11/356,555, filed February 16, 2006.
- Office Action mailed March 9, 2009 in U.S. patent application number 11/433,723, filed May 11, 2006.
- Office Action mailed July 23, 2009 in U.S. patent application number 11/433,225, filed May 11, 2006.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference on this list an admission that it is prior art or pertinent to this application.

Applicants believe no fee is due with this submission. If a fee is due, however, the Commissioner is hereby authorized to charge any necessary fee to Account Number 06-0600.

Respectfully submitted,
Stacey C. Lum et al.

August 25, 2009

By: /Tam Thanh Pham/
Tam Thanh Pham, Reg. No. 50,565
Carr & Ferrell LLP
2200 Geng Road
Palo Alto, CA 94303
TEL: (650) 812-3400
FAX: (650) 812-3444

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (07-09)

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		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit	2435		
	Examiner Name	Kim Y. Vu		
	Attorney Docket Number	PA4693US		

U.S.PATENTS						
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	5852722		1998-12-22	Hamilton	
	2	6988133		2006-01-17	Zavalkovsky et al.	
	3	7469418		2008-12-23	Wilkinson et al.	
	4	7523484		2009-04-21	Lum et al.	
	5	7590733		2009-09-15	Lum	

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

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020073337		2002-06-13	loeie et al.	

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FOREIGN PATENT DOCUMENTS						
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit	2435		
	Examiner Name	Kim Y. Vu		
	Attorney Docket Number	PA4693US		

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	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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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
	1		☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	12273037
	Filing Date	2008-11-18
	First Named Inventor	Stacey C. Lum
	Art Unit	2435
	Examiner Name	Kim Y. Vu
	Attorney Docket Number	PA4693US

CERTIFICATION STATEMENT

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).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

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	/Tam Thanh Pham/	Date (YYYY-MM-DD)	2009-11-06
Name/Print	Tam Thanh Pham	Registration Number	50,565

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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

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

APPLICANT(S): Stacey C. Lum et al.
APPLICATION NO.: 12/273,037
FILED: November 18, 2008
TITLE: Systems and Methods of Controlling Network Access
EXAMINER: Kim Y. Vu
GROUP ART UNIT: 2435
ATTY.DKT.NO.: PA4693US

MAIL STOP AMENDMENT
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**INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56, and 1.97-1.98**

SIR:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56. Additionally, the Applicants wish to make the Examiner aware of, and invite the Examiner to consider, as is appropriate, the following office action from the following U.S. patent application:

- Office Action mailed September 10, 2009 in U.S. patent application number 11/433,723, filed May 11, 2006.

- Office Action mailed September 22, 2008 in U.S. patent application number 11/433,723, filed May 11, 2006.
- Office Action mailed March 31, 2008 in U.S. patent application number 11/433,723, filed May 11, 2006.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference on this list an admission that it is prior art or pertinent to this application.

Applicants believe no fee is due with this submission. If a fee is due, however, the Commissioner is hereby authorized to charge any necessary fee to Account Number 06-0600.

Respectfully submitted,
Stacey C. Lum et al.

November 6, 2009

By: /Tam Thanh Pham/
Tam Thanh Pham, Reg. No. 50,565
Carr & Ferrell LLP
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Palo Alto, CA 94303
TEL: (650) 812-3400
FAX: (650) 812-3444

Electronic Acknowledgement Receipt	
EFS ID:	6406516
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA4693US
Receipt Date:	06-NOV-2009
Filing Date:	18-NOV-2008
Time Stamp:	15:34:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Filed (SB/08)	PA4693US_IDS_SB08a.pdf	37554	no	4
			fc17b63237df320c5ac63d7c1da6dc420871bd		
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2	Transmittal Letter	PA4693US_IDS_Statement.pdf	76937	no	2
			34c8c95e4a59d24ae35ec039d275c507c5561448		
Warnings:					
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Total Files Size (in bytes):			114491		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/273,037	11/18/2008	Stacey C. Lum	PA4693US	7491
22830 7590 07/09/2010 CARR & FERRELL LLP 2200 GENG ROAD PALO ALTO, CA 94303			EXAMINER SONG, HOSUK	
			ART UNIT 2435	PAPER NUMBER
			MAIL DATE 07/09/2010	DELIVERY MODE 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)	
	12/273,037		LUM ET AL.	
	Examiner		Art Unit	
	HOSUK SONG		2435	

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

Period for Reply

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

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

Status

1) ☒ Responsive to communication(s) filed on 18 November 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) 1-31 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) 1-31 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 18 November 2008 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 <u>11/6/09; 8/25/09; 11/18/08</u> .	4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) ☐ Notice of Informal Patent Application 6) ☐ Other: _____.
--	--

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-31 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-56 of U.S. Patent No. 7,523,484. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Information Disclosure Statement

Art Unit: 2435

The following reference have not considered by examiner due to missing date:

---“Packet Fence Overview,” Packetfence

USPTO Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOSUK SONG whose telephone number is 5712723857. The examiner can normally be reached on mon-fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, KIM VU can be reached on 5712723859. 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.

/HOSUK SONG/
Primary Examiner, Art Unit 2435

Notice of References Cited	Application/Control No. 12/273,037	Applicant(s)/Patent Under Reexamination LUM ET AL.	
	Examiner HOSUK SONG	Art Unit 2435	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,950,195	09-1999	Stockwell et al.	1/1
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
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	K	US-			
	L	US-			
	M	US-			

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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	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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BIB DATA SHEET

CONFIRMATION NO. 7491

SERIAL NUMBER 12/273,037	FILING or 371(c) DATE 11/18/2008 RULE	CLASS 726	GROUP ART UNIT 2435	ATTORNEY DOCKET NO. PA4693US		
APPLICANTS Stacey C. Lum, Los Altos, CA; Yuhshiow Alice Lee, Saratoga, CA; ** CONTINUING DATA ***** This application is a CON of 10/949,179 09/24/2004 PAT 7,523,484 which claims benefit of 60/505,582 09/24/2003 and claims benefit of 60/513,080 10/21/2003 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 12/10/2008						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /Hosuk Song/ Acknowledged Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 10	TOTAL CLAIMS 31	INDEPENDENT CLAIMS 2
ADDRESS CARR & FERRELL LLP 2200 GENG ROAD PALO ALTO, CA 94303 UNITED STATES						
TITLE Systems and Methods of Controlling Network Access						
FILING FEE RECEIVED 748	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		

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 Result page: **1** [2](#) [3](#)

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 Wassim Itani, Ayman Kayssi, Ali Chehab
 July 2006 **IWCMC '06**: Proceedings of the 2006 international conference
 mobile computing

Publisher: ACM [Request Permissions](#)

Full text available: Pdf (1.42 MB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 147, Downl

In this paper we present ESCORT, an Enterprise, policy-baSed seCurity daTabase network objects. ESCORT is an efficient end-to-end security a confidentiality and integrity of database objects ...

Keywords: customizable security, policy-driven security, relational data

- 2** [Development of security policies for private networks](#)

Saad Haj Bakry

May 2003

International Journal of Network Management, Volume 13

Publisher: John Wiley & Sons, Inc.

Full text available: Pdf (99.06 KB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 26, Downloa

With the current worldwide emphasis on e-business, the development o private networks connected to the Internet is becoming of increasing im general network security profile upon which ...

- 3** [A security policy system for mobile autonomic networks](#)

Mohamad Aljndi, Jean Leneutre

October 2007

Autonomics '07: Proceedings of the 1st international confer communication systems

Publisher: ICST (Institute for Computer Sciences, Social-Informatics and Telecomm

Full text available: Pdf (226.41 KB)

 Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 160, Downl

An autonomic security system is indispensable for the operation of an a stones in building autonomic systems. In this paper, we introduce our n Accordingly, we propose a security framework ...

Keywords: ad-hoc networks, autonomic computing, autonomic network management

4 [Experiences in VoIP telephone network security policy at the University of Berlin](#)



Vesselin Iossifov, Theodor Totev, Arndt Tochatschek

June 2007

CompSysTech '07: Proceedings of the 2007 international conference on technologies

Publisher: ACM

Full text available: [Pdf](#) (362.49 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 16, Downloads (12 Months): 166, Downloads

The lecture will present a test of the **VoIP (Voice over Internet Protocol)** Applied Sciences (FHTW) Berlin based on Cisco VoIP phones model 7970 policy of VoIP networks to find out ...

Keywords: IT security, voice over IP

5 [Towards network security policy generation for configuration analysis](#)



Taghrid Samak, Adel El-Atawy, Ehab Al-Shaer

November 2009

SafeConfig '09: Proceedings of the 2nd ACM workshop on configuration

Publisher: ACM [Request Permissions](#)

Full text available: [Pdf](#) (456.93 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 18, Downloads (12 Months): 86, Downloads

Access-control lists are an essential part in the security framework of an router. We need to have a repository of ready made policies for conducting research especially firewall policies which ...

Keywords: policy generation, policy grammar, security policy

6 [A group-based security policy for wireless sensor networks](#)



William Claycomb, Rodrigo Lopes, Dongwan Shin, Byunggi Kim

March 2010

SAC '10: Proceedings of the 2010 ACM Symposium on Applied

Publisher: ACM [Request Permissions](#)

Full text available: [Pdf](#) (511.62 KB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 21, Downloads (12 Months): 21, Downloads

The protection of wireless sensor networks is an important task, especially intrusion detection, tamper monitoring, or military applications. To date sensor networks has focused on key ...

Keywords: access control, security policy, wireless sensor network

7 [Network security development process: a framework for teaching network security](#)

T. Andrew Yang, Tuan Anh Nguyen

April 2006 **Journal of Computing Sciences in Colleges**, Volume 21 Issue
Publisher: Consortium for Computing Sciences in Colleges
 Full text available:  Pdf (353.52 KB) Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 130, Download

Teaching *Network Security* course is a challenging task. One of the challenges is more complicated and prone to attacks. In response to the challenge, the protocols and mechanisms continue ...

- 8 [Specifications of a high-level conflict-free firewall policy language for](#)
 Bin Zhang, Ehab Al-Shaer, Radha Jagadeesan, James Riely, Corin Pitcher
 June 2007 **SACMAT '07: Proceedings of the 12th ACM symposium on Access control**
Publisher: ACM  [Request Permissions](#)
 Full text available:  Pdf (370.35 KB) Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 21, Downloads (12 Months): 134, Download

Multiple firewalls typically cooperate to provide security properties for a system. However, firewalls are often spatially distributed and configured in isolation. Without proper configuration, such a system ...

Keywords: conflicts free, firewall, policy language

- 9 [PolicyGlobe: a framework for integrating network and operating system security](#)
 Hamed Okhravi, Ryan H. Kagin, David M. Nicol
 November 2009 **SafeConfig '09: Proceedings of the 2nd ACM workshop on Security configuration**
Publisher: ACM  [Request Permissions](#)
 Full text available:  Pdf (400.64 KB) Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 16, Downloads (12 Months): 60, Download

In modern networked systems with many machines and traffic control devices, it is difficult to determine the overall effect of the security policies and configuration on the system and network devices. This ...

Keywords: access control, firewall, policy integration, se-linux, security

- 10 [Trust management for IPsec](#)
 May 2002 **Transactions on Information and System Security (TISS)**
Publisher: ACM  [Request Permissions](#)
 Full text available:  Pdf (321.98 KB) Additional Information: [full citation](#), [abstract](#)
Bibliometrics: Downloads (6 Weeks): 13, Downloads (12 Months): 131, Download

IPsec is the standard suite of protocols for network-layer confidentiality and integrity. The IPsec protocols, however, do not address the policies for how protect security end points. This article ...

Keywords: Credentials, IPsec, KeyNote, network security, policy, trust

11 [Teaching security best practices by architecting and administering an](#) [Brady R. Stevenson, Gordon W. Romney](#)October 2004 **CITC5 '04**: Proceedings of the 5th conference on Information**Publisher:** ACM  [Request Permissions](#)Full text available:  Pdf (189.97 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 21, Downloads (12 Months): 131, Downloads

Information Assurance(IA) can be learned by actively being involved in university setting have architected, installed and administered a security best practices ...

Keywords: IT infrastructure, business enterprise, educational enterprise engineer, security architect, security best practices, security laboratory,

12 [Resonance: dynamic access control for enterprise networks](#) [Ankur Kumar Nayak, Alex Reimers, Nick Feamster, Russ Clark](#)August 2009 **WREN '09**: Proceedings of the 1st ACM workshop on Research**Publisher:** ACM  [Request Permissions](#)Full text available:  Pdf (518.18 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 12, Downloads (12 Months): 73, Downloads

Enterprise network security is typically reactive, and it relies heavily on approach creates complicated interactions between protocols and system and slow response to attacks. We ...

Keywords: access control, enterprise networks, programmable network

13 [Zodiac: efficient impact analysis for storage area networks](#)[Aameek Singh, Madhukar Korupolu, Kaladhar Voruganti](#)December 2005 **FAST'05: Proceedings of the 4th conference on USENIX Technologies - Volume 4**, Volume 4**Publisher:** USENIX AssociationAdditional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)**Bibliometrics:** Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads

Currently, the fields of impact analysis and policy based management are topics that are not being treated in an integrated manner. Policy-based by most storage vendors because it lets ...

14 [Firmato: A novel firewall management toolkit](#) [Yair Bartal, Alain Mayer, Kobbi Nissim, Avishai Wool](#)November 2004 **Transactions on Computer Systems (TOCS)**, Volume 22 I**Publisher:** ACM  [Request Permissions](#)Full text available:  Pdf (917.80 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 16, Downloads (12 Months): 190, Downloads

In recent years packet-filtering firewalls have seen some impressive technologies (e.g., stateful inspection, transparency, performance, etc.) and wide-spread deployment

<i>management</i> technology ...

Keywords: Security policy, firewall, management, model definition lang

15 Delegating network security with more information

 Jad Naous, Ryan Stutsman, David Mazieres, Nick McKeown, Nikolai Zeldov
August 2009 **WREN '09**: Proceedings of the 1st ACM workshop on Research

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (365.31 KB) Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 23, Downloads (12 Months): 156, Downl

Network security is gravitating towards more centralized control. Strong on the administrator who has to manage complex security policies and be able to cope, the administrator ...

Keywords: firewall, ident, network management, network policy, netw

16 A comprehensive objective network security metric framework for pro

 Ehab Al-Shaer, Latifur Khan, Mohammad Salim Ahmed
May 2008 **CSII RW '08**: Proceedings of the 4th annual workshop on Cyb
research: developing strategies to meet the cyber security and
ahead

Publisher: ACM

Full text available:  Pdf (115.80 KB) Additional Information: [full citation](#), [appendix](#),
[index terms](#)

Bibliometrics: Downloads (6 Weeks): 22, Downloads (12 Months): 283, Downl

In order to create secure and dependable systems and information intel determine the security level of the network. This security level depends factors including emerging of new vulnerabilities ...

17 Completeness of discovery protocols

 Alwyn E. Goodloe, Carl A. Gunter
November 2009 **SafeConfig '09**: Proceedings of the 2nd ACM workshop on
configuration

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (509.53 KB) Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 21, Downloa

Tunnel-complex protocols construct topologies of security tunnels by dir to set up pair-wise tunnels, where the resulting collection of tunnels act Such protocols ease the burden ...

Keywords: certificates, discovery protocols, formal methods, ipsec, sec

18 PoliPer: policies for mobile and pervasive environments

 Luis Veiga, Paulo Ferreira
October 2004 **ARM '04**: Proceedings of the 3rd workshop on Adaptive and i
Publisher: ACM

Full text available:  Pdf (269.24 KB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 3, Downloads (12 Months): 17, Downloads

The need for sharing is well known in a large number of distributed applications to develop either for fully wired or mobile wireless networks. Such difficult unreliable connections ...

19 [Composing expressive runtime security policies](#) [Lujo Bauer, Jay Ligatti, David Walker](#)

May 2009

Transactions on Software Engineering and Methodology**Publisher:** ACM  [Request Permissions](#)Full text available:  Pdf (1.26 MB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 19, Downloads (12 Months): 332, Downloads

Program monitors enforce security policies by interposing themselves in software whenever that software attempts to execute security-relevant monitor has authority to permit or ...

Keywords: Policy composition, policy enforcement, policy-specification**20** [Building an application-aware IPsec policy system](#)[Heng Yin, Haining Wang](#)December 2007 **IEEE/ ACM Transactions on Networking (TON)**, Volume**Publisher:** IEEE PressFull text available:  Pdf (1.60 MB)Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 14, Downloads (12 Months): 163, Downloads

As a security mechanism at the network-layer, the IP security protocol (but its usage is limited to Virtual Private Networks (VPNs). The end-to-end have not been widely used. To ...

Keywords: communication system security, computer network securityResult page: [1](#) [2](#) [3](#)

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S126	2032	726/1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:07
S127	1952	726/2.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:07
S128	1922	726/3.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:07
S129	2900	726/4.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:07
S130	807	726/12.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:07
S131	603	726/15.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:07
S132	1476	726/23.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:08
S133	1218	726/24.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:08

S134	1271	713/150.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:08
S135	1379	713/153.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:08
S136	3399	713/168.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:08
S137	4697	709/225.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:09
S138	3534	709/228.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:09
S139	5311	709/229.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:09
S140	1773	(security near3 policy) near4 (network)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:10
S141	466	(security near3 policy) near4 (network) and subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:10
S142	370	(security near3 policy) near4 (network) and subset and (gatekeep\$4 or firewall\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:11

S143	590	(security near3 policy) near4 (network) and subset and (gatekeep\$4 or firewall\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:11
S144	36	(security near3 policy) near4 (network) and subset and (gatekeep\$4 or firewall\$4) and (reconfig\$7 or modi\$6 or chang\$6) near4 (port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:37
S145	22	(security near3 policy) near4 (network) and subset near4 (network) and (gatekeep\$4 or firewall\$4) and (reconfig\$7 or modi\$6 or chang\$6) near4 (port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:40
S146	59	(security near3 policy) near4 (network) and (secur\$6 or restrict\$5) near4 subset and (gatekeep \$4 or firewall \$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:46
S147	247	(security near3 policy) near4 (network) and S126	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/06/22 17:46
S148	764	(security near3 policy) near4 (network) and subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:47

S149	99	(security near3 policy) near4 (network) and subset and S126	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:47
S150	18	(security near3 policy) near4 (network) and subset and S127	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:48
S151	36	(security near3 policy) near4 (network) and subset and S128	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:48
S152	39	(security near3 policy) near4 (network) and subset and S129	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:48
S153	28	(security near3 policy) near4 (network) and subset and S130	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:48
S154	22	(security near3 policy) near4 (network) and subset and S131	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:48
S155	32	(security near3 policy) near4 (network) and subset and S132	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:48
S156	14	(security near3 policy) near4 (network) and subset and S133	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:49
S157	13	(security near3 policy) near4 (network) and subset and S134	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:49

S158	34	(security near3 policy) near4 (network) and subset and S135	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:49
S159	11	(security near3 policy) near4 (network) and subset and S136	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:49
S160	29	(security near3 policy) near4 (network) and subset and S137	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:49
S161	4	(security near3 policy) near4 (network) and subset and S138	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:50
S162	31	(security near3 policy) near4 (network) and subset and S139	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:50
S163	497	(security near3 policy) near4 (network) and subset and S140	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 17:50
S164	31	(security near3 policy) near4 (network) and subset and S139	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/06/22 18:38

6/ 22/ 2010 10:23:25 PM

Index of Claims 		Application/Control No. 12/273,037		Applicant(s)/Patent under Reexamination LUM ET AL.	
		Examiner HOSUK SONG		Art Unit 2435	

√ Rejected

= Allowed

— (Through numeral) Cancelled

÷ Restricted

N Non-Elected

I Interference

A Appeal

O Objected

Claim		Date									
Final	Original	6/22/10									
	1	√									
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U.S. Patent and Trademark Office

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CISCO SYSTEMS, INC.
FORTINET, INC.

IPR2024-00539

Ex. 1002, p. 135 of 261

Search Notes 	Application/Control No.		Applicant(s)/Patent under Reexamination	
	12/273,037		LUM ET AL.	
	Examiner		Art Unit	
	HOSUK SONG		2435	

SEARCHED			
Class	Subclass	Date	Examiner
726	1-4 12,15	6/22/2010	HS
726	23-24	6/22/2010	HS
713	150,153	6/22/2010	HS
713	168	6/22/2010	HS
709	225	6/22/2010	HS
709	228-229	6/22/2010	HS

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
EAST, foreign patent database IBM TDB	6/22/2010	HS
NPL	6/22/2010	HS

**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): Stacey C. Lum, et al.

SERIAL NO.: Unknown

FILED: November 18, 2008

TITLE: Systems and Methods of Controlling Network Access

EXAMINER: Unknown

GROUP ART UNIT: Unknown

ATTY.DKT.NO.: PA4693US

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**List of Co-Pending Patent Applications That May Be Directed
Towards Similar Subject Matter**

Examiner's Initials	Serial Number	First-Named Inventor	Title	Filing Date
2962	11/227,679	Stacey Lum	Dynamic address assignment for access control on DHCP networks	9/14/2005
3580	11/433,723	Stacey Lum	Network access control including dynamic policy enforcement point	5/11/2006
3581	11/433,225	Stacey Lum	Network access control management	5/11/2006
3536	11/356,555	Stacey Lum	Peer Based Network Access Control	02/16/2006
Examiner's Signature:	/Hosuk Song/			Date 06/22/2010

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /H.S./

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number	PA4693US	

U.S.PATENTS						
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	5968176		1999-10-19	Nessett et al.	
	2	6834414		2004-12-28	Chiu	
	3	2519435		1950-08-22	Byrd, Jr.	
	4	3100664		1963-08-13	Duval	
	5	1830383		1931-11-03	Bos	
	6	1860326		1932-05-24	Jackson	
	7	2131067		1938-09-27	Paden	
	8	2247592		1941-07-04	Swift	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

	9	2731056		1956-01-17	Anson	
	10	3701557		1972-10-31	Centofante	
	11	5010622		1991-04-30	Morita	
	12	4181339		1980-01-01	Rigsby	
	13	4951984		1990-08-28	Huang	
	14	5701635		1997-12-30	Hawkes	
	15	5944368		1999-08-31	Hastings	
	16	5606668		1997-02-25	Shwed	
	17	6044402		2000-03-28	Jacobson et al.	
	18	6304973		2001-10-16	Williams	
	19	6393484		2002-05-21	Massarani	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
	Filing Date		2008-11-18	
	First Named Inventor	Lum		
	Art Unit			
	Examiner Name	Unknown		
	Attorney Docket Number		PA4693US	

	20	6363489		2002-05-26	Comay et al.	
	21	5842002		1998-11-24	Schnurer et al.	
	22	5968176		1999-10-19	Nessett et al.	
	23	6745333		2004-06-01	Thomsen	
	24	6006259		1999-12-21	Adelman et al.	
	25	6769000		2004-07-27	Akhtar et al.	

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

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060147043		2006-07-06	Mann et al.	
	2	20020010869		2002-01-24	Kim	
	3	20030023880		2003-01-30	Edwards et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

	4	20030046586		2003-03-06	Bheemarasetti et al.	
	5	20030126464		2003-07-03	McDaniel et al.	
	6	20030208694		2003-11-06	Fang	
	7	20040054926		2004-03-18	Ocepek et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

	15	20050278775		2005-12-15	Ross	
	16	20060095968		2005-05-04	Portolani et al.	
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FOREIGN PATENT DOCUMENTS						

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number	PA4693US	

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	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	WO2006029217			2006-03-16	Swan Labs Corporation		☐

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NON-PATENT LITERATURE DOCUMENTS

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
	1	~~"Pocket Fence Overview," "Pocket Fence™", located at http://www.pocketfence.org, date unknown.~~	☐
	2	"Network Access Control from Mirage Networks," Mirage Networks, 2006.	☐
	3	Whalen, S., "An Introduction to ARP Spoofing," April 2001, Revision 1.82, located at http://www.node99.org/projects/arpspoof/	☐

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Examiner Signature	/Hosuk Song/	Date Considered	06/22/2010
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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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Stacey C. Lum	
	Art Unit	2431	
	Examiner Name	Unknown	
	Attorney Docket Number	PA4693US	

U.S.PATENTS						
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	7055173	B1	2006-05-30	Chaganty et al.	
	2	7299294	B1	2007-11-20	Bruck et al.	
	3	7350226	B2	2008-03-25	Moriconi et al.	
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	6	6671737	B1	2003-12-30	Snowdon et al.	
	7	6678835	B1	2004-01-13	Shah et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Stacey C. Lum	
	Art Unit		2431
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20020023273	A1	2002-02-21	Song	
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	9	20090043765	A1	2009-02-12	Pugh	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit		2431	
	Examiner Name	Unknown		
	Attorney Docket Number		PA4693US	

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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	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	2005079706	JP		2005-03-24	Nippon Electric Company		☐

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Examiner Signature	/Hosuk Song/	Date Considered	06/22/2010
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	Art Unit	2431
	Examiner Name	Unknown
	Attorney Docket Number	PA4693US

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Stacey C. Lum	
	Art Unit	2435	
	Examiner Name	Kim Y. Vu	
	Attorney Docket Number	PA4693US	

U.S.PATENTS						
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
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U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020073337		2002-06-13	loeie et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit	2435		
	Examiner Name	Kim Y. Vu		
	Attorney Docket Number	PA4693US		

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	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
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.: 12/273,037
FILED: November 18, 2008
APPLICANT(S): Stacey C. Lum et al.
TITLE: Systems and Methods of Controlling Network Access
EXAMINER: Hosuk Song
GROUP ART UNIT: 2435
ATTY.DKT.NO.: PA4693US

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RESPONSE A

Examiner Song:

In response to the office action mailed July 9, 2010 (*Office Action*), please consider the following remarks. A listing of the **claims** begins on page **two**. The Applicants' **remarks** and conclusion are provided beginning on pages **seven** and **eight**, respectively.

CLAIMS

A LISTING OF THE CLAIMS IS PROVIDED AS FOLLOWS:

1. (original) A method of granting access to a protected network, the method comprising:
 - receiving a request for access to a less-restricted subset of the protected network from an access device, the request received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;
 - applying a security policy to the access device in response to the request; using the gatekeeper to determine if requirements of the security policy are satisfied by the access device, and
 - reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when the requirements of the security policy are satisfied.
2. (original) The method of claim 1, further comprising authenticating a user of the access device.
3. (original) The method of claim 1, further comprising obtaining system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.
4. (original) The method of claim 3, wherein the system data includes antivirus software status.
5. (original) The method of claim 1, further comprising communicating between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

6. (original) The method of claim 5, wherein the system data includes information regarding devices connected to the access device.
7. (original) The method of claim 5, wherein the system data includes information regarding computing code executing on the access device.
8. (original) The method of claim 1, further comprising selecting the security policy from among a plurality of security policies.
9. (original) The method of claim 8, wherein selecting the security policy is responsive to an identity of the access device or an identity of a user of the access device.
10. (original) The method of claim 1, wherein the access point is a network switch.
11. (original) The method of claim 1, wherein the access point is a wireless access point.
12. (original) The method of claim 1, wherein the access point is a remote access virtual private network.
13. (original) The method of claim 1, wherein the gatekeeper is accessible to elements of the less-restricted subset of the protected network.
14. (original) The method of claim 1, wherein the restricted subset of the protected network is characterized by an access control list.
15. (original) The method of claim 14, wherein access to the restricted subset of the protected network is responsive to a switch port configured to communicate with the protected network subject to the access control list.

16. (original) A computer-readable storage medium having stored thereon a program, the program being executable by a processor to perform a method for controlling access to a computer network, the method comprising:

receiving a request for access to a less-restricted subset of the protected network from an access device, the request being received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;

applying a security policy to the access device in response to the request; and

reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when requirements of the security policy are satisfied.

17. (original) The computer readable storage medium of claim 16, wherein the program is further executable by a processor to authenticate a user of the access device.

18. (original) The computer readable storage medium of claim 16, wherein the program is further executable by a processor to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

19. (original) The computer readable storage medium of claim 18, wherein the system data includes antivirus software version data.

20. The computer readable storage medium of claim 16, wherein the program is further executable to communicate between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

21. (original) The computer storage readable medium of claim 20, wherein the system data includes information regarding devices connected to the access device.
22. (original) The computer readable storage medium of claim 16, wherein the program is further executable to communicate between the gatekeeper and an agent executing on the access device to monitor security status of the access device after reconfiguring the communication port for communicating between the access device and the less-restricted subset.
23. (original) The computer readable storage medium of claim 22, wherein the system data includes information regarding computing code executing on the access device.
24. (original) The computer readable storage medium of claim 16, wherein the program is further executable to select the security policy from among a plurality of security policies.
25. (original) The computer readable storage medium of claim 24, wherein selecting the security policy is responsive to an identity of the access device or an identity of a user of the access device.
26. (original) The computer readable storage medium of claim 24, wherein selecting the security policy is responsive to an identity of elements within the less-restricted subset of the protected network to which access is requested.
27. (original) The computer readable storage medium of claim 16, wherein the program is further executable to update the access device when requirements of the security policy are not satisfied.
28. (original) The computer readable storage medium of claim 16, wherein the gatekeeper is accessible to elements of the less-restricted subset of the protected network.

29. (original) The computer readable storage medium of claim 16, wherein the restricted subset of the protected network is characterized by an access control list.

30. (original) The computer readable storage medium of claim 29, wherein access to the restricted subset of the protected network is responsive to a VLAN configured to communicate with the protected network subject to the access control list.

31. (original) The computer readable storage medium of claim 29, wherein access to the restricted subset of the protected network is responsive to a switch port configured to communicate with the protected network subject to the access control list.

REMARKS

Double Patenting

The Examiner rejects claims 1-31 “on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-56 of U.S. Patent No. 7,523,484.” *Office Action*, 2.

The Examiner notes that a timely filed terminal disclaimer may be used to overcome the nonstatutory double patenting rejection. *Office Action*, 2.

The above-referenced patent is owned by InfoExpress, Inc., as is the present patent application. In accordance with the Examiner’s suggestion, the Applicants hereby submit a terminal disclaimer in compliance with 37 C.F.R. § 1.321. As such, the double patenting rejection is overcome.

Information Disclosure Statement

The Examiner has not considered the reference titled “Packet Fence Overview” due to “missing date.” *Office Action*, 3. The Applicants hereby submit a revised information disclosure statement in which the date of download (2006) is provided for the aforementioned reference. A copy of the reference has been provided and considered in parent application 10/949,179 (now U.S. patent number 7,523,484) to which the present application makes a claim of priority under 35 U.S.C. § 120. As such, a copy is not provided herewith. The Applicants respectfully request that the Examiner consider the reference using the 2006 date provided.

CONCLUSION

The Applicants submitted a terminal disclaimer to overcome the non-statutory double patenting rejection of claims 1-31.

As all rejections have been overcome, the Applicants contend the present application is in condition for allowance. The Examiner is invited to contact the Applicants' undersigned representative with any questions concerning the present response.

Respectfully submitted,
Stacey C. Lum et al.

October 11, 2010

By: /Tam Thanh Pham/
Tam Thanh Pham, Reg. No. 50,565
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Palo Alto, CA 94303
TEL: (650) 812-3400
FAX: (650) 812-3444

**TERMINAL DISCLAIMER TO OBTAIN A DOUBLE PATENTING
REJECTION OVER A "PRIOR" PATENT**Docket Number (Optional)
PA4693US

In re Application of: Stacey C. Lum et al.

Application No.: 12/273,037

Filed: November 18, 2008

For: Systems and Methods of Controlling Network Access

The owner*, InfoExpress, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term **prior patent** No. 7,523,484 as the term of said prior patent is defined in 35 U.S.C. 154 and 173, and as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 and 173 of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☒ The undersigned is an attorney or agent of record. Reg. No. 50,565

/Tam Thanh Pham/
Signature

2010-10-11
Date

Tam Thanh Pham
Typed or printed name

650-812-3473
Telephone Number

- ☒ Terminal disclaimer fee under 37 CFR 1.20(d) included.

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This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Electronic Patent Application Fee Transmittal				
Application Number:		12273037		
Filing Date:		18-Nov-2008		
Title of Invention:		Systems and Methods of Controlling Network Access		
First Named Inventor/Applicant Name:		Stacey C. Lum		
Filer:		TamThanh Thi Pham/Patricia Thompson		
Attorney Docket Number:		PA4693US		
Filed as Small 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
Statutory disclaimer	2814	1	70	70
Total in USD (\$)				250

Electronic Acknowledgement Receipt	
EFS ID:	8601021
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA4693US
Receipt Date:	11-OCT-2010
Filing Date:	18-NOV-2008
Time Stamp:	21:23:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 250
RAM confirmation Number	13195
Deposit Account	060600
Authorized User	
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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)	PA4693US_IDS_SB08.pdf	30189 efdcce14092f900e31f42fc3ac52fe71e67ba77	no	3
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2	Transmittal Letter	PA4693US_IDS_Statement.pdf	77229 9c53739a2494454d653f5544e0c4ac5cd0471247	no	2
Warnings:					
Information:					
3		PA4693US_Amendment_ResponseA.pdf	111295 05870f1896c006cc852df175f62d4204ef5bbfb3	yes	8
	Multipart Description/PDF files in .zip description				
	Document Description	Start	End		
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1		
	Claims	2	6		
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4	Terminal Disclaimer Filed	PA4693US_Terminal_Disclaimer.pdf	52903 2e8d8c59b1669516bf8613f1331d30d178180787	no	1
Warnings:					
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5	Fee Worksheet (PTO-875)	fee-info.pdf	31583 0fd1e6dde4b8093f4d137086644f4d92f1cd0fd7	no	2
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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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit	2435		
	Examiner Name	Hosuk Song		
	Attorney Docket Number	PA4693US		

U.S. PATENTS								
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							
If you wish to add additional U.S. Patent citation information please click the Add button.								
U.S. PATENT APPLICATION PUBLICATIONS								
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.								
FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	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							☐
If you wish to add additional Foreign Patent Document citation information please click the Add button								
NON-PATENT LITERATURE DOCUMENTS								
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Stacey C. Lum	
	Art Unit	2435	
	Examiner Name	Hosuk Song	
	Attorney Docket Number	PA4693US	

1	"Packet Fence Overview," Packet Fence™, located at http://www.packetfence.org , downloaded: 2006.	☐
If you wish to add additional non-patent literature document citation information please click the Add button		
EXAMINER SIGNATURE		
Examiner Signature		Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		
¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	12273037
	Filing Date	2008-11-18
	First Named Inventor	Stacey C. Lum
	Art Unit	2435
	Examiner Name	Hosuk Song
	Attorney Docket Number	PA4693US

CERTIFICATION STATEMENT

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).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

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

☐ None

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	/Tam Thanh Pham/	Date (YYYY-MM-DD)	2010-10-11
Name/Print	Tam Thanh Pham	Registration Number	50565

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour 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.**

**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): Stacey C. Lum et al.
APPLICATION NO.: 12/273,037
FILED: November 18, 2008
TITLE: Systems and Methods of Controlling Network Access
EXAMINER: Hosuk Song
GROUP ART UNIT: 2435
ATTY.DKT.NO.: PA4693US

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. § 1.56, and 1.97-1.98**

SIR:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing a several reference. The Examiner is requested to make this reference of official record in the application.

The reference cited may be material to examination of the application and is submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56. Additionally, the Applicant wishes to make the Examiner aware of, and invite the Examiner to consider, as is appropriate, the following office action from the following U.S. patent application:

- Notice of Allowance mailed October 5, 2010 in U.S. patent application number 12/550,321, filed August 28, 2009.

No representation is made or intended as to the completeness of this list, nor is the inclusion of any reference on this list an admission that it is prior art or pertinent to this application.

Applicant has enclosed the applicable fee of \$180.00 with this submission, in accordance with 37 C.F.R. § 1.17(p). If more fees are due, however, the Commissioner is hereby authorized to charge any necessary fees to Account Number 06-0600.

Respectfully submitted,
Stacey C. Lum et al.

October 11, 2010

By: /Tam Thanh Pham/
Tam Thanh Pham, Reg. No. 50,565
Carr & Ferrell LLP
2200 Geng Road
Palo Alto, CA 94303
TEL: (650) 812-3400
FAX: (650) 812-3444

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/273,037		Filing Date 11/18/2008		☐ To be Mailed				
APPLICATION AS FILED – PART I													
(Column 1)			(Column 2)			SMALL ENTITY ☒		OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)			RATE (\$)	FEE (\$)					
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A				N/A						
☐ SEARCH FEE (37 CFR 1.16(k), (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 \$	=			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.													
APPLICATION AS AMENDED – PART II										TOTAL			
(Column 1)			(Column 2)			(Column 3)		SMALL ENTITY		OR		OTHER THAN SMALL ENTITY	
AMENDMENT	10/11/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0	X \$26 =	0	OR	X \$	=			
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X \$110 =	0	OR	X \$	=			
	☐ Application Size Fee (37 CFR 1.16(s))								OR				
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR				
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE				
(Column 1)			(Column 2)			(Column 3)							
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$	=	OR	X \$	=			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$	=	OR	X \$	=			
	☐ Application Size Fee (37 CFR 1.16(s))								OR				
	☐ 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:
/STELLA LITTLE/

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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UNITED STATES DEPARTMENT OF COMMERCE
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22830 e 10/13/2010

CARR & FERRELL LLP
120 CONSTITUTION DRIVE
MENLO PARK, CA 94025

Paper No.

Application No.:	12/273,037	Date Mailed:	10/13/2010
			
First Named Inventor:	Lum, Stacey, C.	Examiner:	SONG, HOSUK
Attorney Docket No.:	PA4693US	Art Unit:	2435
Confirmation No.:	7491	Filing Date:	11/18/2008

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

Commissioner for Patents

PTO-90c (Rev.08-06)

Notice of Non-Compliant Amendment (37 CFR 1.121)	Application No. 12/273,037	Applicant(s) LUM ET AL.	
		Art Unit 3998	

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

The amendment document filed on 11 October, 2010 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
 - ☐ A. Amended paragraph(s) do not include markings.
 - ☐ B. New paragraph(s) should not be underlined.
 - ☐ C. Other _____.
- ☐ 2. Abstract:
 - ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
 - ☐ B. Other _____.
- ☐ 3. Amendments to the drawings:
 - ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d).
 - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
 - ☐ C. Other _____.
- ☒ 4. Amendments to the claims:
 - ☐ A. A complete listing of all of the claims is not present.
 - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
 - ☒ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
 - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
 - ☒ E. Other: See claim 20.
- ☐ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4): For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

1. Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment or an amendment filed after allowance, or a drawing submission (only) If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
2. Applicant is given **one month**, or thirty (30) days, whichever is longer, from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1 to 4 are checked, the correction required is only the corrected section of the non-compliant amendment in compliance with 37 CFR 1.121.

Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action.

Failure to timely respond to this notice will result in:

- Abandonment** of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action; or
- Non-entry** of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

Legal Instruments Examiner (LIE), if applicable /STELLA LITTLE/ Telephone No: (571)272-4365

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.: 12/273,037
FILED: November 18, 2008
APPLICANTS: Stacey C. Lum et al.
TITLE: Systems and Methods of Controlling Network Access
EXAMINER: Hosuk Song
GROUP ART UNIT: 2435
CONF. NO.: 7491
ATTY.DKT.NO.: PA4693US

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT

In response to the *Notice of Non-Compliant Amendment* mailed October 13, 2010, enclosed please find the corrected section of *Amendment A* dated October 11, 2010. Specifically, the claims section with a missing claim identifier is presented.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (original) A method of granting access to a protected network, the method comprising:
 - receiving a request for access to a less-restricted subset of the protected network from an access device, the request received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;
 - applying a security policy to the access device in response to the request; using the gatekeeper to determine if requirements of the security policy are satisfied by the access device, and
 - reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when the requirements of the security policy are satisfied.
2. (original) The method of claim 1, further comprising authenticating a user of the access device.
3. (original) The method of claim 1, further comprising obtaining system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.
4. (original) The method of claim 3, wherein the system data includes antivirus software status.

5. (original) The method of claim 1, further comprising communicating between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.
6. (original) The method of claim 5, wherein the system data includes information regarding devices connected to the access device.
7. (original) The method of claim 5, wherein the system data includes information regarding computing code executing on the access device.
8. (original) The method of claim 1, further comprising selecting the security policy from among a plurality of security policies.
9. (original) The method of claim 8, wherein selecting the security policy is responsive to an identity of the access device or an identity of a user of the access device.
10. (original) The method of claim 1, wherein the access point is a network switch.
11. (original) The method of claim 1, wherein the access point is a wireless access point.
12. (original) The method of claim 1, wherein the access point is a remote access virtual private network.
13. (original) The method of claim 1, wherein the gatekeeper is accessible to elements of the less-restricted subset of the protected network.
14. (original) The method of claim 1, wherein the restricted subset of the protected network is characterized by an access control list.

15. (original) The method of claim 14, wherein access to the restricted subset of the protected network is responsive to a switch port configured to communicate with the protected network subject to the access control list.

16. (original) A computer-readable storage medium having stored thereon a program, the program being executable by a processor to perform a method for controlling access to a computer network, the method comprising:

- receiving a request for access to a less-restricted subset of the protected network from an access device, the request being received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;

- applying a security policy to the access device in response to the request; and

- reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when requirements of the security policy are satisfied.

17. (original) The computer readable storage medium of claim 16, wherein the program is further executable by a processor to authenticate a user of the access device.

18. (original) The computer readable storage medium of claim 16, wherein the program is further executable by a processor to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

19. (original) The computer readable storage medium of claim 18, wherein the system data includes antivirus software version data.

20. (original) The computer readable storage medium of claim 16, wherein the program is further executable to communicate between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

CONCLUSION

The present submission corrects the non-compliance identified in the Notice mailed October 13, 2010. That is, claim 20 is now identified as being in its original form as filed. The Examiner is otherwise requested to refer to all remarks presented in the context of the original October 11, 2010 submission.

October 25, 2010

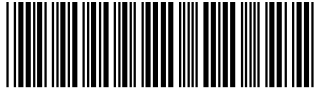
By: /Tam Thanh Pham/
Tam Thanh Pham, Reg. No. 50,565
CARR & FERRELL LLP
2200 Geng Road
Palo Alto, CA 94303
650.812.3400
650.812.3444

Electronic Acknowledgement Receipt	
EFS ID:	8692570
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	22830
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	PA4693US
Receipt Date:	25-OCT-2010
Filing Date:	18-NOV-2008
Time Stamp:	18:18:23
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		PA4693US_Amendment.pdf	94237	yes	6
			3198a2afe61164b9762ae97b7169e10af3246a94		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Supplemental Response or Supplemental Amendment	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	6
Warnings:			
Information:			
Total Files Size (in bytes):		94237	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

Application Number 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	12/273,037	LUM ET AL.	
Document Code - DISQ		Internal Document – DO NOT MAIL	

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 10/11/10	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
Janice Ford

U.S. Patent and Trademark Office

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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

REVOCATION OF ATTORNEY AND POWER OF ATTORNEY

The undersigned, having authority to act on behalf of InfoExpress, Inc., assignee of all right, title, and interest in the attached schedule of patent applications (Schedule A), hereby revokes all powers of attorney previously given and hereby appoints the attorneys and agents associated with **Customer Number 28661** as its attorney to act on applicant's behalf before the United States Patent and Trademark Office for the attached schedule of patent applications (Schedule A) and to transact all business in the Patent and Trademark Office in connection herewith.

STATEMENT UNDER 37 CFR 3.73(b)

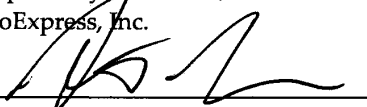
The undersigned certifies that it is the assignee of the entire right, title, and interest in the attached schedule of patent applications (Schedule A). The chain of title from the inventors to the assignee of record for each of the patent applications identified in the attached schedule of patent applications (Schedule A) is attached hereto as Schedule B. The undersigned is empowered and authorized to act on behalf of the assignee.

Kindly address all communications regarding this application to:

Customer No. 28661
Lewis and Roca LLP

Date: 6/21/11

Respectfully submitted,
InfoExpress, Inc.



Stacey Lum
President & CEO

Schedule A

<u>Application No.</u>	<u>Filing Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
10/949,179	September 24, 2004	7,523,484	April 21, 2009
11/227,679	September 14, 2005	7,590,733	September 15, 2009
12/273,037	November 18, 2008	n/a	n/a
12/550,321	August 28, 2009	7,890,658	February 15, 2011
13/157,308	June 10, 2011	n/a	n/a
13/157,309	June 10, 2011	n/a	n/a
13/157,310	June 10, 2011	n/a	n/a

Schedule B

CHAIN OF TITLE INFORMATION

STATEMENT UNDER 37 CFR 3.73(b)

Application No. 12/273,037

Filed: November 18, 2008

1. From: the Inventors

To: InfoExpress, Inc.

Reel 021851 Frame 0159

Electronic Acknowledgement Receipt	
EFS ID:	10376995
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	22830
Filer:	TamThanh Thi Pham/Stephanie Davis
Filer Authorized By:	TamThanh Thi Pham
Attorney Docket Number:	PA4693US
Receipt Date:	24-JUN-2011
Filing Date:	18-NOV-2008
Time Stamp:	13:21:35
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	Power of Attorney	12273037.pdf	120929	no	3
			7893ec74c03d0afc678264abd1c3d507c9ca38b		
Warnings:					
Information:					

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National Stage of an International Application under 35 U.S.C. 371

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

New International Application Filed with the USPTO as a Receiving Office

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



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/273,037	11/18/2008	Stacey C. Lum	PA4693US

28661
LEWIS AND ROCA LLP
1663 Hwy 395, Suite 201
Minden, NV 89423

CONFIRMATION NO. 7491
POA ACCEPTANCE LETTER



OC000000048508421

Date Mailed: 06/30/2011

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/24/2011.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/snguyen/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/273,037	11/18/2008	Stacey C. Lum	PA4693US

22830
CARR & FERRELL LLP
120 CONSTITUTION DRIVE
MENLO PARK, CA 94025

CONFIRMATION NO. 7491
POWER OF ATTORNEY NOTICE



OC000000048508406

Date Mailed: 06/30/2011

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/24/2011.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/snguyen/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): Lum et al.
APPLICATION NO.: 12/273,037
FILING DATE: November 18, 2008
TITLE: Systems and Methods for Controlling Network Access
ART UNIT: 2435
CONFIRM. NO.: 7491
ATTY.DKT.NO.: INFO-002COA

MAIL STOP AMENDMENT
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SUPPLEMENTAL AMENDMENT

Examiner Song:

Please enter the following **amendments** to the **claims**, which commence on **page two**.

The Applicants' **remarks** appear beginning on **page seven**.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (original) A method of granting access to a protected network, the method comprising:

receiving a request for access to a less-restricted subset of the protected network from an access device, the request received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;

applying a security policy to the access device in response to the request;

using the gatekeeper to determine if requirements of the security policy are satisfied by the access device, and

reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when the requirements of the security policy are satisfied.

2. (original) The method of claim 1, further comprising authenticating a user of the access device.

3. (original) The method of claim 1, further comprising obtaining system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

4. (original) The method of claim 3, wherein the system data includes antivirus software status.

5. (original) The method of claim 1, further comprising communicating between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.
6. (original) The method of claim 5, wherein the system data includes information regarding devices connected to the access device.
7. (original) The method of claim 5, wherein the system data includes information regarding computing code executing on the access device.
8. (original) The method of claim 1, further comprising selecting the security policy from among a plurality of security policies.
9. (original) The method of claim 8, wherein selecting the security policy is responsive to an identity of the access device or an identity of a user of the access device.
10. (original) The method of claim 1, wherein the access point is a network switch.
11. (original) The method of claim 1, wherein the access point is a wireless access point.
12. (original) The method of claim 1, wherein the access point is a remote access virtual private network.
13. (original) The method of claim 1, wherein the gatekeeper is accessible to elements of the less-restricted subset of the protected network.
14. (original) The method of claim 1, wherein the restricted subset of the protected network is characterized by an access control list.

15. (original) The method of claim 14, wherein access to the restricted subset of the protected network is responsive to a switch port configured to communicate with the protected network subject to the access control list.

16. (currently amended) A non-transitory computer-readable storage medium having stored thereon a program, the program being executable by a processor to perform a method for controlling access to a computer network, the method comprising:

receiving a request for access to a less-restricted subset of the protected network from an access device, the request being received through a communication port of an access point, the communication port configured for communicating between the access device and a restricted subset of the protected network, the restricted subset including a gatekeeper;

applying a security policy to the access device in response to the request; and

reconfiguring the communication port for communicating data between the access device and the less-restricted subset of the protected network without passing the data through the gatekeeper, when requirements of the security policy are satisfied.

17. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the program is further executable by a processor to authenticate a user of the access device.

18. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the program is further executable by a processor to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

19. (currently amended) The non-transitory computer readable storage medium of claim 18, wherein the system data includes antivirus software version data.

20. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the program is further executable to communicate between the gatekeeper and an agent executing on the access device to obtain system data from the access device, and wherein applying the security policy includes using the system data to determine that the access device satisfies the requirements of the security policy.

21. (currently amended) The non-transitory computer storage readable medium of claim 20, wherein the system data includes information regarding devices connected to the access device.

22. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the program is further executable to communicate between the gatekeeper and an agent executing on the access device to monitor security status of the access device after reconfiguring the communication port for communicating between the access device and the less-restricted subset.

23. (currently amended) The non-transitory computer readable storage medium of claim 22, wherein the system data includes information regarding computing code executing on the access device.

24. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the program is further executable to select the security policy from among a plurality of security policies.

25. (currently amended) The non-transitory computer readable storage medium of claim 24, wherein selecting the security policy is responsive to an identity of the access device or an identity of a user of the access device.

26. (currently amended) The non-transitory computer readable storage medium of claim 24, wherein selecting the security policy is responsive to an identity of elements within the less-restricted subset of the protected network to which access is requested.

27. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the program is further executable to update the access device when requirements of the security policy are not satisfied.

28. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the gatekeeper is accessible to elements of the less-restricted subset of the protected network.

29. (currently amended) The non-transitory computer readable storage medium of claim 16, wherein the restricted subset of the protected network is characterized by an access control list.

30. (currently amended) The non-transitory computer readable storage medium of claim 29, wherein access to the restricted subset of the protected network is responsive to a VLAN configured to communicate with the protected network subject to the access control list.

31. (currently amended) The non-transitory computer readable storage medium of claim 29, wherein access to the restricted subset of the protected network is responsive to a switch port configured to communicate with the protected network subject to the access control list.

REMARKS

The present submission provides a full listing of the claims with the appropriate claim identifiers. In addition, it clarifies that the claimed 'computer-readable storage medium' is 'non-transitory.' The Applicants therefore submit that the claims are now in condition for allowance.

The Examiner is invited to contact the Applicants' undersigned representative with any questions concerning the present amendment.

Respectfully submitted,
Lum et al.

July 25, 2011

By: /Tam Thanh Pham/
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Electronic Acknowledgement Receipt	
EFS ID:	10592392
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	28661
Filer:	TamThanh Thi Pham/Stephanie Davis
Filer Authorized By:	TamThanh Thi Pham
Attorney Docket Number:	INFO-002COA
Receipt Date:	25-JUL-2011
Filing Date:	18-NOV-2008
Time Stamp:	18:24:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		INFO-002COA_11-07-25_Supplemental_Amendment.pdf	130660 36d142d94690bcd74db056d7b429968d61df048e	yes	7

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Supplemental Response or Supplemental Amendment	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	7
Warnings:			
Information:			
Total Files Size (in bytes):		130660	
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/273,037		Filing Date 11/18/2008		☐ To be Mailed						
APPLICATION AS FILED – PART I															
(Column 1)			(Column 2)			SMALL ENTITY ☒		OR		OTHER THAN SMALL ENTITY					
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)			RATE (\$)	FEE (\$)							
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A				N/A								
☐ SEARCH FEE (37 CFR 1.16(k), (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(j))	minus 20 =	*	X \$	=			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.															
APPLICATION AS AMENDED – PART II															
(Column 1)			(Column 2)			(Column 3)		SMALL ENTITY		OR		OTHER THAN SMALL ENTITY			
AMENDMENT	07/25/2011	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)			RATE (\$)	ADDITIONAL FEE (\$)				
	Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0	X \$26 =	0	OR		X \$	=				
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 2	= 0	X \$110 =	0	OR		X \$	=				
	☐ Application Size Fee (37 CFR 1.16(s))														
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))														
	TOTAL ADD'L FEE											0	OR		TOTAL ADD'L FEE
(Column 1)			(Column 2)			(Column 3)		SMALL ENTITY		OR		OTHER THAN SMALL ENTITY			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)			RATE (\$)	ADDITIONAL FEE (\$)				
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$	=	OR		X \$	=				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$	=	OR		X \$	=				
	☐ Application Size Fee (37 CFR 1.16(s))														
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))														
	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: /AUDRIS SIAS/				

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/273,037	11/18/2008	Stacey C. Lum	INFO-002COA	7491
28661 7590 07/26/2011 LEWIS AND ROCA LLP 1663 Hwy 395, Suite 201 Minden, NV 89423			EXAMINER SONG, HOSUK	
			ART UNIT 2435	PAPER NUMBER
			MAIL DATE 07/26/2011	DELIVERY MODE PAPER

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



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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
12/273,037	18 November 2008	LUM ET AL.	INFO-002COA

LEWIS AND ROCA LLP
1663 Hwy 395, Suite 201
Minden, NV 89423

EXAMINER

HOSUK SONG

ART UNIT	PAPER
2435	20110722

DATE MAILED:

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Commissioner for Patents

Response period has been reset.

/HOSUK SONG/
Primary Examiner, Art Unit 2435

PTO-90C (Rev.04-03)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2435

Examiner: Hosuk Song

Serial No.: 12/273,037

Filed: November 18, 2008

In re Application of: Lum et al.

Confirmation No.: 7490

Customer No.: 28661

Title: SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

**List of Co-Pending Patents or Patent Applications That May Be Directed Towards
Similar Subject Matter**

Examiner's Initials	Application Number	Docket Number	First-Named Inventor	Title	Filing Date
	13/157,308	INFO-002COB	Stacy C. Lum	Systems and Methods of Controlling Network Access	June 10, 2011
	13/157,309	INFO-002COC	Stacy C. Lum	Systems and Methods of Controlling Network Access	June 10, 2011
	13/157,310	INFO-002COD	Stacy C. Lum	Systems and Methods of Controlling Network Access	June 10, 2011
Examiner's Signature:					Date

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Lum, Stacey C.		
	Art Unit	2435		
	Examiner Name	Hosuk Song		
	Attorney Docket Number	INFO-002COA		

U.S. PATENTS								
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	7752320	B2	2010-07-06	Kappes et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.								
U.S. PATENT APPLICATION PUBLICATIONS								
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20030229808	A1	2003-12-11	Heintz et al.			
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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	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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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Lum, Stacey C.	
	Art Unit	2435	
	Examiner Name	Hosuk Song	
	Attorney Docket Number	INFO-002COA	

	1	"Network Access Quarantine Control in Microsoft Windows Server 2003," Windows Server System, Published March 2003, Updated July 29, 2009, 37 pages, Microsoft Corporation, Redmond, WA, USA.	☐
If you wish to add additional non-patent literature document citation information please click the Add button			
EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Lum, Stacey C.	
	Art Unit		2435
	Examiner Name	Hosuk Song	
	Attorney Docket Number		INFO-002COA

CERTIFICATION STATEMENT

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).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ 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		Date (YYYY-MM-DD)	
Name/Print		Registration Number	

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour 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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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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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.

Electronic Patent Application Fee Transmittal				
Application Number:		12273037		
Filing Date:		18-Nov-2008		
Title of Invention:		Systems and Methods of Controlling Network Access		
First Named Inventor/Applicant Name:		Stacey C. Lum		
Filer:		TamThanh Thi Pham/Stephanie Davis		
Attorney Docket Number:		INFO-002COA		
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:	10633836
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	28661
Filer:	TamThanh Thi Pham/Stephanie Davis
Filer Authorized By:	TamThanh Thi Pham
Attorney Docket Number:	INFO-002COA
Receipt Date:	31-JUL-2011
Filing Date:	18-NOV-2008
Time Stamp:	20:36:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 180
RAM confirmation Number	7246
Deposit Account	500612
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INFO-002COA_11-07-29_IDS_Statement.pdf	23647	no	2
			68895d1d19d83d2c9ec9fc55b44d7bb8adb167f2		
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INFO-002COA_11-07-29_Co-Pending_Apps.pdf	21398	no	1
			30e70f51e6f38a133350616b14a8f4c4860f97f		
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Information Disclosure Statement (IDS) Form (SB08)	INFO-002COA_11-07-29_IDS.pdf	34750	no	4
			68b0bd5d8a63675d61472e660f7da65f3e195a5e		
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4	Non Patent Literature	Quarantine_2.pdf	393011	no	37
			ab8464d053eb07666de801619b03c73c2548c4c2		
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
5	Fee Worksheet (SB06)	fee-info.pdf	30019	no	2
			ca466a2203da08d948d9e8121479cee66af3bc34		
Warnings:					
Information:					
Total Files Size (in bytes):			502825		

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

New Applications Under 35 U.S.C. 111

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

National Stage of an International Application under 35 U.S.C. 371

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2435

Examiner: Hosuk Song

Serial No.: 12/273,037

Filed: November 18, 2008

In re Application of: Lum et al.

Confirmation No.: 7491

Customer No.: 28661

Title: SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Under 37 C.F.R. § 1.56, and 1.97-1.98

SIR:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56. Additionally, the Applicants wish to make the Examiner aware of, and invite the Examiner to consider, as is appropriate, the following office actions from the following U.S. patent application:

- Office Action mailed February 29, 2008 in U.S. patent application number 10/949,179 filed September 24, 2004, granted as 7,523,484.

The Commissioner is hereby authorized to charge any necessary fee to Account
Number 50-0612.

Respectfully submitted,
LEWIS AND ROCA LLP

Dated: July 29, 2011

/tam thanh pham/

Tam Thanh Pham
Reg. No.: 50,565

Lewis and Roca LLP
1663 Hwy 395, Suite 201
Minden, NV 89423
(775) 586-9500

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit	2435		
	Examiner Name	Song, Hosuk		
	Attorney Docket Number	INFO-002COA		

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	7194763	B2	2007-03-20	Potter et al.			
	2	7325246	B1	2008-01-29	Halasz 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 Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² j	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							☐
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Stacey C. Lum	
	Art Unit	2435	
	Examiner Name	Song, Hosuk	
	Attorney Docket Number	INFO-002COA	

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
	1		☐

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

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Stacey C. Lum	
	Art Unit	2435	
	Examiner Name	Song, Hosuk	
	Attorney Docket Number	INFO-002COA	

CERTIFICATION STATEMENT

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).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ 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	/tam thanh pham/	Date (YYYY-MM-DD)	2011-08-12
Name/Print	Tam Thanh Pham	Registration Number	50,565

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour 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.**

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.

Electronic Acknowledgement Receipt	
EFS ID:	10724910
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	Systems and Methods of Controlling Network Access
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	28661
Filer:	TamThanh Thi Pham
Filer Authorized By:	
Attorney Docket Number:	INFO-002COA
Receipt Date:	12-AUG-2011
Filing Date:	18-NOV-2008
Time Stamp:	13:21:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INFO-002COA_11-08-12_IDS_Statement.pdf	36446	no	2
			f2b217a2765fe5afa0aa3248f253c6a2501882b4		
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Form (SB08)	INFO-002COA_11-08-12_IDS. pdf	612193 175e4b5314bcdac9e98414ca6d523eb7d7228f63	no	4
Warnings:					
Information:					
Total Files Size (in bytes):			648639		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2435

Examiner: Hosuk Song

Serial No.: 12/273,037

Filed: November 18, 2008

In re Application of: Stacey C. Lum et al.

Confirmation No.: 7491

Customer No.: 28661

Title: SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Under 37 C.F.R. § 1.56, and 1.97-1.98

SIR:

Pursuant to the provisions of 37 C.F.R. §§ 1.56 and 1.97-98 of the Rules of Practice in Patent Cases, enclosed herewith is form PTO-SB-08, listing several references. The Examiner is requested to make these references of official record in the application.

The references cited may be material to examination of the application and are submitted in compliance with the Applicants' duty of disclosure as defined by 37 C.F.R. § 1.56. Additionally, the Applicants wish to make the Examiner aware of, and invite the Examiner to consider, as is appropriate, the following office actions from the following U.S. patent application:

- Office Action mailed August 4, 2011 in U.S. patent application number 13/157,308 filed June 10, 2011.

- Office Action mailed August 4, 2011 in U.S. patent application number 13/157,309 filed June 10, 2011.
- Office Action mailed August 4, 2011 in U.S. patent application number 13/157,310 filed June 10, 2011.

The Commissioner is hereby authorized to charge any necessary fee to Account Number 50-0612.

Respectfully submitted,
LEWIS AND ROCA LLP

Dated: August 12, 2011

/tam thanh pham/

Tam Thanh Pham
Reg. No.: 50,565

Lewis and Roca LLP
1663 Hwy 395, Suite 201
Minden, NV 89423
(775) 586-9500



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
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NOTICE OF ALLOWANCE AND FEE(S) DUE

28661 7590 08/22/2011
LEWIS AND ROCA LLP
1663 Hwy 395, Suite 201
Minden, NV 89423

EXAMINER

SONG, HOSUK

ART UNIT

PAPER NUMBER

2435

DATE MAILED: 08/22/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/273,037	11/18/2008	Stacey C. Lum	INFO-002COA	7491
TITLE OF INVENTION: SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS				

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	11/22/2011

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)

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.

28661 7590 08/22/2011
LEWIS AND ROCA LLP
1663 Hwy 395, Suite 201
Minden, NV 89423

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.
-----------------	-------------	----------------------	---------------------	------------------

12/273,037 11/18/2008 Stacey C. Lum INFO-002COA 7491

TITLE OF INVENTION: SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional YES \$755 \$300 \$0 \$1055 11/22/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
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SONG, HOSUK 2435 726-001000

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, 1 _____
(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. 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).

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/273,037	11/18/2008	Stacey C. Lum	INFO-002COA	7491
28661	7590	08/22/2011	EXAMINER	
LEWIS AND ROCA LLP			SONG, HOSUK	
1663 Hwy 395, Suite 201			ART UNIT	
Minden, NV 89423			PAPER NUMBER	

2435

DATE MAILED: 08/22/2011

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 0 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 0 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.

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

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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.
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Notice of Allowability	Application No.	Applicant(s)	
	12/273,037	LUM ET AL.	
	Examiner	Art Unit	
	HOSUK SONG	2435	

-- 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 Amendment filed on 7/25/11.

2. ☒ The allowed claim(s) is/are 1-31.

3. ☐ 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.

4. ☐ 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.

5. ☐ 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).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>7/31/11;10/11/10;8/12/11</u> 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 _____.
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/HOSUK SONG/ Primary Examiner, Art Unit 2435	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit	2435		
	Examiner Name	Hosuk Song		
	Attorney Docket Number	PA4693US		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Stacey C. Lum	
	Art Unit	2435	
	Examiner Name	Hosuk Song	
	Attorney Docket Number	PA4693US	

1	"Packet Fence Overview," Packet Fence™, located at http://www.packetfence.org , downloaded: 2006.	☐
If you wish to add additional non-patent literature document citation information please click the Add button		
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Examiner Signature	/Hosuk Song/	Date Considered 08/17/2011
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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.		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2435

Examiner: Hosuk Song

Serial No.: 12/273,037

Filed: November 18, 2008

In re Application of: Lum et al.

Confirmation No.: 7490

Customer No.: 28661

Title: SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

**List of Co-Pending Patents or Patent Applications That May Be Directed Towards
Similar Subject Matter**

Examiner's Initials	Application Number	Docket Number	First-Named Inventor	Title	Filing Date
	13/157,308	INFO-002COB	Stacy C. Lum	Systems and Methods of Controlling Network Access	June 10, 2011
	13/157,309	INFO-002COC	Stacy C. Lum	Systems and Methods of Controlling Network Access	June 10, 2011
	13/157,310	INFO-002COD	Stacy C. Lum	Systems and Methods of Controlling Network Access	June 10, 2011
Examiner's Signature:	/Hosuk Song/				Date
					08/04/2011

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /H.S./

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Lum, Stacey C.		
	Art Unit	2435		
	Examiner Name	Hosuk Song		
	Attorney Docket Number	INFO-002COA		

U.S. PATENTS								
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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20030229808	A1	2003-12-11	Heintz et al.			
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037
	Filing Date		2008-11-18
	First Named Inventor	Lum, Stacey C.	
	Art Unit	2435	
	Examiner Name	Hosuk Song	
	Attorney Docket Number	INFO-002COA	

	1	"Network Access Quarantine Control in Microsoft Windows Server 2003," Windows Server System, Published March 2003, Updated July 29, 2009, 37 pages, Microsoft Corporation, Redmond, WA, USA.	☐
If you wish to add additional non-patent literature document citation information please click the Add button			
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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.			



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Sort by [relevance](#) in [expanded form](#)Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [next](#)**1** [Aligning Semantic Web applications with network access controls](#)

William M. Fitzgerald, Simon N. Foley

January 2011

Computer Standards & Interfaces, Volume 33 Issue 1**Publisher:** Elsevier Science Publishers B. V.**Bibliometrics:** Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Access controls for Semantic Web applications are commonly considered at the level of the application-domain and do not necessarily consider the security controls of the underlying infrastructure to any great extent. Low-level network access controls ...

Keywords: Network access control, Ontology, Security, Semantic Web**2** [Modular context-aware access control for medical sensor networks](#)

Oscar Garcia-Merchon, Klaus Wehrle

June 2010

SACMAT '10: Proceeding of the 15th ACM symposium on Access control models and technology**Publisher:** ACM [Request Permissions](#)Full text available: [PDF](#) (690.39 KB)**Bibliometrics:** Downloads (6 Weeks): 16, Downloads (12 Months): 242, Downloads (Overall): 242, Citation Count

Medical sensor networks allow for pervasive health monitoring of users in hospitals, at home, or on the way. To privacy and confidentiality of medical data need to be guaranteed at any moment to make sure that unauthorized parties cannot retrieve confidential ...

Keywords: access control, medical sensor network, security**3** [Efficient and distributed access control for sensor networks](#)

Dongguang Liu

November 2010

Wireless Networks, Volume 16 Issue 8**Publisher:** Kluwer Academic PublishersFull text available: [PDF](#) (690.93 KB)**Bibliometrics:** Downloads (6 Weeks): 4, Downloads (12 Months): 35, Downloads (Overall): 35, Citation Count: 0

Sensor networks are a promising computing paradigm for monitoring the physical environment and providing observations for various uses. In hostile situations, it is critical to enforce network access control to ensure the integrity, availability, and ...

Keywords: Access control, Sensor networks**4** [Access control protocols with two-layer architecture for wireless networks](#)

Zhiguo Wan, Robert H. Deng, Feng Bao, Akkibhebbai L. Ananda

February 2007

Computer Networks: The International Journal of Computer and Telecommunications Networking, Volume 51 Issue 3**Publisher:** Elsevier North-Holland, Inc.**Bibliometrics:** Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

In this paper we study two access control protocols which have similar two-layer access control architectures for wireless networks in public places. The first protocol, called the Lancaster protocol, employs user password for authentication and enforces ...

Keywords: Access control, Security protocol, Wireless networks**5** [Network layer access control for context-aware IPv6 applications](#)

Adrian Friday, Maomao Wu, Joe Finney, Stefan Schmid, Keith Cheverst, Nigel Davies

July 2003

Wireless Networks, Volume 9 Issue 4**Publisher:** Kluwer Academic PublishersFull text available: [PDF](#) (3.57 MB)**Bibliometrics:** Downloads (6 Weeks): 1, Downloads (12 Months): 45, Downloads (Overall): 1489, Citation Count:

As part of the Lancaster GUIDE II project, we have developed a novel wireless access point protocol designed support the development of next generation mobile context-aware applications in our local environs. Once deployed, this architecture will ...

Keywords: authentication, mobile IPv6, public access point, security, wireless Internet

6 [A semantic web based framework for social network access control](#)

Barbara Carminati, Elena Ferrai, Raymond Heahberly, Mural Kantaroglu, Bhavani Thuraisingham

June 2009

SACMAT '09: Proceedings of the 14th ACM symposium on Access control models and technolo

Publisher: ACM [Request Permissions](#)

Full text available: [PDF](#) (439.35 KB)

Bibliometrics: Downloads (6 Weeks): 33, Downloads (12 Months): 293, Downloads (Overall): 793, Citation Count

The existence of on-line social networks that include person specific information creates interesting opportunit for various applications ranging from marketing to community organization. On the other hand, security and privacy concerns need to be ...

Keywords: access control, semantic web, social networks

7 [A network access control approach based on the AAA architecture and authorization attributes](#)

Gabriel López, Oscar Canoas, Antonio F. Gómez, Jesús D. Jiménez, Rafael Marín

August 2007

Journal of Network and Computer Applications, Volume 30 Issue 3

Publisher: Academic Press Ltd.

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Network access control mechanisms constitute an increasingly needed service, when communications are becoming more and more ubiquitous thanks to some technologies such as wireless networks or Mobile IP. This paper presents a particular scenario where ...

Keywords: Access control, Attributes, Authorization, SAML, XACML

8 [Use of XACML Policies for a Network Access Control Service](#)

Gabriel López, Oscar Canoas, Antonio F. Gómez, Sharmata

May 2005 Proceeding of the 2005 conference on Applied Public Key Infrastructure: 4th International Workshop: IWAP 2005

Publisher: IOS Press

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

The interest in policy specification languages is increasing thanks to the proliferation of authorization solutions that need to define their resource access policies by means of them. These solutions define their own policy syntax, usually based on ...

Keywords: Aaa, Authorization, Policy, Saml, Xacml

9 [Automatic enforcement of location aware user based network access control policies](#)

Tugkan Tuglular

May 2008 **TELE-INFO'08:** Proceedings of the 7th WSEAS International Conference on Telecommunications and Informatics

Publisher: World Scientific and Engineering Academy and Society (WSEAS)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Multiple interconnected network segments distributed across various locations, such as corporate networks, where users or employees constantly travel among segments and require to access servers, need to have network access control mechanisms that are ...

Keywords: XACML, access control, firewall policy agents, firewalls, location awareness, network security polic

10 [Capability-based egress network access control by using DNS server](#)

Shinichi Suzuki, Yasushi Shinjo, Toshiro Hirotsu, Koze Itano, Kazuhiko Kato

November 2007

Journal of Network and Computer Applications, Volume 30 Issue 4

Publisher: Academic Press Ltd.

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

In conventional egress network access control (NAC) based on access control lists (ACLs), modifying the ACLs a heavy task for administrators. To enable configuration without a large amount of administrators' effort, we introduce capabilities to egress ...

Keywords: Access control, Capabilities, DNS, Egress filters, Network security

11 [Behavior-based admission and access control for network security](#)

[Vanessa Frias-Martinez](#) / [Salvatore J. Stolfo](#)

January 2008

Behavior-based admission and access control for network security

Publisher: Columbia University

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Current solutions for network admission and access control typically employ manually fixed rules or roles. Admission control is based on sets of rules (policies) manually specified by the network administrator to determine the requirements that have ...

12 [An attack on the proactive RSA signature scheme in the URSA ad hoc network access control protocol](#)

[Stanislaw Jarecki](#), [Nitesh Saxena](#), [Jeong Hyun Yi](#)

October 2004

SASN '04: Proceedings of the 2nd ACM workshop on Security of ad hoc and sensor netwo

Publisher: ACM [Request Permissions](#)

Full text available: [PDF](#) (206.11 KB)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 16, Downloads (Overall): 811, Citation Count: 7

Recently, Luo, et al. in a series of papers [17, 14, 13, 18, 15] proposed a set of protocols for providing ubiquit and robust access control [URSA] in mobile ad hoc networks without relying on a centralized authority. The Uf protocol relies on the ...

Keywords: RSA, admission control, group membership, mobile ad-hoc networks, peer-to-peer, proactive cryptosystems, threshold cryptosystems

13 [Network Access Control For Dummies](#)

[Jay Kelsey](#), [Rich Campagna](#), [Denzil Wessels](#)

May 2009

Network Access Control For Dummies

Publisher: For Dummies

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Network access control (NAC) is how you manage network security when your employees, partners, and guest need to access your network using laptops and mobile devices. Network Access Control For Dummies is where you learn how NAC works, how to implement ...

14 [Autonomic control and personalization of a wireless access network](#)

[N. Bietari-Melazzi](#), [G. Di Sorte](#), [M. Femminella](#), [G. Reali](#)

July 2007

Computer Networks: The International Journal of Computer and Telecommunications Networking, Volume 51 Issue 10

Publisher: Elsevier North-Holland, Inc.

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

As ICT services are becoming more ubiquitous and mobile and access technologies grow to be more heterogeneous and complex, we are witnessing the increasing importance of two related needs: (i) users need be able to configure and personalize their ...

Keywords: Access network context, Auto-configuration of terminals, IEEE 802.11b, Load balancing, Middleware Numerical analysis, Prototype development, Service adaptability, Service personalization, Service portability, User mobility, User profile definition and handling

15 [Elliptic curve cryptography-based access control in sensor networks](#)

[Haodong Wang](#), [Bo Sheng](#), [Qun Li](#)

December 2006

International Journal of Security and Networks, Volume 1 Issue 3/4

Publisher: Inderscience Publishers

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Access control in sensor networks is used to authorise and grant users the right to access the network and data collected by sensors. Different users have different access right due to the access restriction implicated by the data security and confidentiality. ...

Keywords: ECC, WSNs, access control, elliptic curve cryptography, public key cryptography, security, wireless networks, wireless sensor networks

16 Efficient Access Control in Wireless NetworkKun Wang, Zhenguo Ding, Lihua ZhouDecember 2006 **WI-IATW '06**: Proceedings of the 2006 IEEE/WIC/ACM international conference on Web Intelligence and Intelligent Agent Technology**Publisher:** IEEE Computer SocietyFull text available:  [PDF](#) (188.31 KB)**Bibliometrics:** Downloads (6 Weeks): 0, Downloads (12 Months): 10, Downloads (Overall): 65, Citation Count: 0

To use role-based access control (RBAC) in wireless network is difficult than that in wired network. RBAC need to search relative tables to get the user's permissions. We present an access control judgment algorithm which bases on artificial neural ...

17 Automated management of network access control from design to enforcementEhab Al-Shaar

June 2010

SACMAT '10: Proceeding of the 15th ACM symposium on Access control models and technologies**Publisher:** ACMFull text available:  [PDF](#) (146.40 KB)**Bibliometrics:** Downloads (6 Weeks): 6, Downloads (12 Months): 132, Downloads (Overall): 132, Citation Count:

Recent studies show that more than 65% of the network vulnerabilities are due to misconfigured network access control. Arbor Networks in their ISP survey shows that managing access control is the top challenge in ISP networks today, which creates major ...

18 Two-Layered Access Control for Storage Area NetworkCai Tao, Ju Shi-Quang, Niu De-Jiao

August 2009

GCC '09: Proceedings of the 2009 Eighth International Conference on Grid and Cooperative Computing**Publisher:** IEEE Computer SocietyFull text available:  [Publisher Site](#)**Bibliometrics:** Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Access control is important to protect for storage area network. Current access control needed large time and space overhead, and it would make large I/O performance loss of storage area network. The artificial immune algorithm can efficiently detect ...

Keywords: storage area network, access control, the artificial immune algorithm**19** A Network Access Control Mechanism Based on Behavior ProfilesVanessa Fries-Martinez, Joseph Sherrick, Salvatore L. Stolfo, Angelos D. Keromytis

December 2009

ACSAC '09: Proceedings of the 2009 Annual Computer Security Applications Conference**Publisher:** IEEE Computer SocietyFull text available:  [Publisher Site](#)**Bibliometrics:** Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

Current Network Access Control (NAC) technologies manage the access of new devices into a network to prevent rogue devices from attacking network hosts or services. Typically, new devices are checked against a set of manually defined policies (rules) ...

Keywords: Behavior-based Network Access Control, Network Intrusion Prevention, Anomaly Detection, Concept Drift in Data Streams**20** Trusted Network Access Control in the Eduroam FederationFernando Bernal, Manuel Sanchez, Gabriel Lopez, Antonio F. Gomez-Skarmata, Oscar Canovas

October 2009

NSS '09: Proceedings of the 2009 Third International Conference on Network and System Security**Publisher:** IEEE Computer SocietyFull text available:  [Publisher Site](#)**Bibliometrics:** Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Downloads (Overall): n/a, Citation Count

In order to ensure end user devices are healthy enough to gain access to the network, providers are making use of advanced network access control solutions, which propose an evaluation of configuration information (post) about the device itself before ...

Keywords: network access control, NEA, eduroam, federation

Result page: 1 2 3 4 5 6 7 8 9 10 next

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Index of Claims 		Application/Control No. 12/273,037		Applicant(s)/Patent under Reexamination LUM ET AL.	
		Examiner HOSUK SONG		Art Unit 2435	

√ Rejected

= Allowed

— (Through numeral) Cancelled

÷ Restricted

N Non-Elected

I Interference

A Appeal

O Objected

Claim		Date									
Final	Original	8/4/11									
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Issue Classification 	Application/Control No. 12/273,037	Applicant(s)/Patent under Reexamination LUM ET AL.
	Examiner HOSUK SONG	Art Unit 2435

ISSUE CLASSIFICATION													
ORIGINAL					INTERNATIONAL CLASSIFICATION								
CLASS		SUBCLASS			CLAIMED				NON-CLAIMED				
726		1			H	04	L	9	/00				/
CROSS REFERENCES					H	04	L	9	/32				/
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				G	06	F	15	/16				/
726	2	3	15						/				/
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					/Hosuk Song/ 8/4/11					Total Claims Allowed: 31			
(Assistant Examiner) (Date)					(Primary Examiner) (Date)					O.G. Print Claim(s)		O.G. Print Fig.	
(Legal Instruments Examiner) (Date)										1		2	

☐ 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		
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Search Notes 	Application/Control No. 12/273,037	Applicant(s)/Patent under Reexamination LUM ET AL.	
	Examiner HOSUK SONG	Art Unit 2435	

SEARCHED			
Class	Subclass	Date	Examiner
726	1-4 12,15	8/4/2011	HS
726	23,24	8/4/2011	HS
713	150,153	8/4/2011	HS
713	168	8/4/2011	HS
709	225	8/4/2011	HS
709	228-229	8/4/2011	HS

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
726	1-4 12,15	8/4/2011	HS
726	23-24	8/4/2011	HS
713	150,153	8/4/2011	HS
USPGPUB see printout		8/4/2011	HS

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
EAST, foreign patent database IBM TDB	8/4/2011	HS
NPL	8/4/2011	HS

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S149	1	("7523484").PN.	USPAT; USOCR	OR	OFF	2011/08/04 08:11
S150	288	380/47.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 09:47
S151	2585	726/1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:26
S152	2538	726/2.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:26
S153	2636	726/3.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:26
S154	3701	726/4.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:26
S155	1029	726/12.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:26
S156	732	726/15.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:27
S157	1974	726/23.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:27

S158	1598	726/24.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:27
S159	1716	713/150.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:27
S160	1679	713/153.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:28
S161	4283	713/168.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:28
S162	5653	709/225.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:28
S163	4377	709/228.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:28
S164	6271	709/229.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:28
S165	3721	(security near4 policy) near5 (network\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:29
S166	1144	(security near4 policy) near5 (network\$4) and subset	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:29

S167	1014	(security near4 policy) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:30
S168	10354	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:30
S170	1236	(policy or policies or rule or parameter) same (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 10:33
S171	758	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 14:02

S172	14	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang \$6 or modif\$6 or edit\$6) near5 (port) and 726/1. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:34
S173	4	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang \$6 or modif\$6 or edit\$6) near5 (port) and 726/2. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:34
S174	11	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang \$6 or modif\$6 or edit\$6) near5 (port) and 726/3. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:36

S175	15	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 726/4. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:36
S176	2	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 726/5. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:36
S177	3	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 726/6. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:36

S178	7	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 726/12. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:37
S179	8	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 726/15. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:39
S180	18	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 726/23. ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:39

S181	0	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 726/24.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:40
S182	2	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 713/150.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:40
S183	5	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 713/153.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:40

S184	6	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 713/168.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:42
S185	27	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 709/225.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:44
S186	14	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 709/228.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:45

S187	20	(policy or policies or rule or parameter) near5 (network\$4) and subset and (gatekeep\$4 or firewall or IDS or intrusion adj3 detect\$5 adj5 system) and (reconfi\$5 or chang\$6 or modif\$6 or edit\$6) near5 (port) and 709/229.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/08/04 19:45
S188	3	(security and policy and subset and gatekeeper and reconfig\$7 and access\$4 and device and network \$4 and port).CLM.	US-PGPUB; USPAT	OR	ON	2011/08/04 19:47
S189	3	(security and policy and subset and gatekeeper and reconfig\$7 and access\$4 and device and network \$4 and port and restrict\$5).CLM.	US-PGPUB; USPAT	OR	ON	2011/08/04 19:47

8/ 5/ 2011 7:02:14 AM

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12273037	
	Filing Date		2008-11-18	
	First Named Inventor	Stacey C. Lum		
	Art Unit	2435		
	Examiner Name	Song, Hosuk		
Attorney Docket Number		INFO-002COA		

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	7194763	B2	2007-03-20	Potter et al.			
	2	7325246	B1	2008-01-29	Halasz et al.			
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	12273037
	Filing Date	2008-11-18
	First Named Inventor	Stacey C. Lum
	Art Unit	2435
	Examiner Name	Song, Hosuk
Attorney Docket Number		INFO-002COA

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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EXAMINER SIGNATURE

Examiner Signature	/Hosuk Song/	Date Considered	08/17/2011
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*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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	12273037
	Filing Date	2008-11-18
	First Named Inventor	Stacey C. Lum
	Art Unit	2435
	Examiner Name	Song, Hosuk
	Attorney Docket Number	INFO-002COA

CERTIFICATION STATEMENT

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).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ 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	/tam thanh pham/	Date (YYYY-MM-DD)	2011-08-12
Name/Print	Tam Thanh Pham	Registration Number	50,565

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or **Fax** **(571) 273-2885**

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

28661 7590
LEWIS AND ROCA LLP
1663 Hwy 395, Suite 201
Minden, NV 89423

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/273,037	11/18/2008	Stacey C. Lum	INFO-002COA	7491

TITLE OF INVENTION:

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$1055	11/22/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS

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 Lewis and Roca 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

InfoExpress, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Mountain View, California

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 enclosed:

- ☒ Issue Fee
- ☒ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 500612

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).

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Authorized Signature /tam thanh pham/

Date September 16, 2011

Typed or printed name Tam Thanh Pham

Registration No. 50,565

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Electronic Patent Application Fee Transmittal				
Application Number:		12273037		
Filing Date:		18-Nov-2008		
Title of Invention:		SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS		
First Named Inventor/Applicant Name:		Stacey C. Lum		
Filer:		TamThanh Thi Pham/Stephanie Davis		
Attorney Docket Number:		INFO-002COA		
Filed as Small 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	2501	1	755	755
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 (\$)				1055

Electronic Acknowledgement Receipt	
EFS ID:	10969383
Application Number:	12273037
International Application Number:	
Confirmation Number:	7491
Title of Invention:	SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS
First Named Inventor/Applicant Name:	Stacey C. Lum
Customer Number:	28661
Filer:	TamThanh Thi Pham/Stephanie Davis
Filer Authorized By:	TamThanh Thi Pham
Attorney Docket Number:	INFO-002COA
Receipt Date:	16-SEP-2011
Filing Date:	18-NOV-2008
Time Stamp:	18:52:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1055
RAM confirmation Number	5875
Deposit Account	500612
Authorized User	
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Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	INFO-002COA_11-09-16_ptol85b_fill.pdf	53796 796d5642009e73f7d43292e7a851a6ba33a0f8d	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31630 85695200699a30319a9b9c35330318e10e214b35c	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			85426		
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Issue Classification 	Application/Control No. 12/273,037	Applicant(s)/Patent under Reexamination LUM ET AL.
	Examiner HOSUK SONG	Art Unit 2435

ISSUE CLASSIFICATION													
ORIGINAL					INTERNATIONAL CLASSIFICATION								
CLASS		SUBCLASS			CLAIMED				NON-CLAIMED				
726		1			H	04	L	9	/00				/
CROSS REFERENCES					H	04	L	9	/32				/
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				G	06	F	15	/16				/
726	2	3	15						/				/
									/				/
									/				/
									/				/
									/				/
					/Hosuk Song/ 8/4/11					Total Claims Allowed: 31			
(Assistant Examiner) (Date)					(Primary Examiner) (Date)					O.G. Print Claim(s)		O.G. Print Fig.	
(Legal Instruments Examiner) (Date)										1		2	

☐ 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	
1	1		31	31			61			121			151			181	
2	2			32			62			122			152			182	
3	3			33			63			123			153			183	
4	4			34			64			124			154			184	
5	5			35			65			125			155			185	
6	6			36			66			126			156			186	
7	7			37			67			127			157			187	
8	8			38			68			128			158			188	
9	9			39			69			129			159			189	
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28	28			58			88			148			178			208	
29	29			59			89			149			179			209	
30	30			60			90			150			180			210	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

	15	20050278775		2005-12-15	Ross	
Change(s) applied to document, /A.J.P./ 9/26/2011	16	20060095968		~~2005-05-04~~ 05/2006	Portolani et al.	
	17	20060161970		2006-07-20	Hopen et al.	
	18	20060164199		2006-07-27	Gilde et al.	
	19	20070064689		2007-03-22	Shin et al.	
	20	20030191966		2003-10-09	Gleichauf	
	21	20080060067		2008-03-06	Kim et al.	
	22	20040193912		2004-09-30	Li et al.	
	23	20050044197		2005-02-24	Lai	
	24	20020120749		2002-08-29	Widegren et al.	
If you wish to add additional U.S. Published Application citation information please click the Add button.						
FOREIGN PATENT DOCUMENTS						

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2008-11-18
	First Named Inventor	Lum	
	Art Unit		
	Examiner Name	Unknown	
	Attorney Docket Number		PA4693US

Change(s) applied to document, /A.J.P./ 9/26/2011	20	6363489		~~2002-05-26~~ 03/2002	Comay et al.	
	21	5842002		1998-11-24	Schnurer et al.	
	22	5968176		1999-10-19	Nessett et al.	
	23	6745333		2004-06-01	Thomsen	
	24	6006259		1999-12-21	Adelman et al.	
	25	6769000		2004-07-27	Akhtar et al.	

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

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20060147043		2006-07-06	Mann et al.	
	2	20020010869		2002-01-24	Kim	
	3	20030023880		2003-01-30	Edwards et al.	



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/273,037	11/01/2011	8051460	INFO-002COA	7491

28661 7590 10/12/2011
LEWIS AND ROCA LLP
1663 Hwy 395, Suite 201
Minden, NV 89423

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

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

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

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

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

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

Stacey C. Lum, Los Altos, CA;
Yuhshiw Alice Lee, Saratoga, CA;

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12/273,037 | INFO-002COA:

SYSTEMS AND METHODS OF CONTROLLING NETWORK ACCESS

PUBLIC VIEW

Application #	Confirmation #	Attorney Docket #	Patent #
12/273,037	7491	INFO-002COA	8,051,460  Download PDF  Issued - 11/01/2011
Filing or 371 (c) date	Status		
11/18/2008	Patented Case 10/12/2011		

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1 Assignments found

Assignment 1

Reel/frame	Date recorded	Pages
021851/0159	11/18/2008	8
Conveyance		
ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). 		
Assignors	Execution date	Correspondent
LUM, STACEY C.	09/24/2004	TAM THANH PHAM C/O CARR & FERRELL LLP 2200 GENG ROAD PALO ALTO, CA 94303
LEE, YUHSHIOW ALICE	10/21/2008	
Assignee		
INFOEXPRESS, INC. 170 S. WHISMAN ROAD, SUITE B MOUNTAIN VIEW, CALIFORNIA 94041		

10 per page

Page 1 of 1 

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