

1) Family number: 33215048 (US2006184342A)

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Title: NETWORK CONFIGURATION MANAGEMENT BY MODEL FINDING

Abstract: Complex, end-to-end network services are set up via the configuration method: each component has a finite number of configuration parameters each of which is set to definite values. End-to-end network service requirements can be on connectivity, security, performance and fault-tolerance. A number of subsidiary requirements are created that constrain, for example, the protocols to be used, and the logical structures and associated policies to be set up at different protocol layers. By performing different types of reasoning with these requirements, different configuration tasks are accomplished. These include configuration synthesis, configuration error diagnosis, configuration error fixing, reconfiguration as requirements or components are added and deleted, and requirement verification. A method of performing network configuration management by model finding formalizes and automates such reasoning using a logical system called Alloy. Given a first-order logic formula and a domain of interpretation, Alloy tries to find whether the formula is satisfiable in that domain, i.e., whether it has a model. Alloy is used to build a Requirement Solver that takes as input a set of network components and requirements upon their configurations and determines component configurations satisfying those requirements. This Requirement Solver is used in different ways to accomplish the above reasoning tasks.

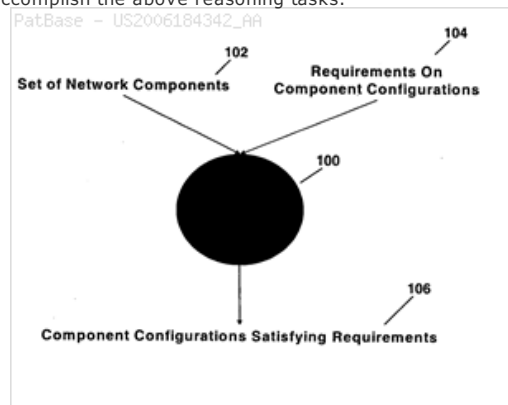
Classifications:

International (IPC 8-9): G06F17/10 (Advanced/Invention)

CPC: H04L12/4633 H04L41/0803 H04L63/0272

European: H04L12/24E1 H04L12/46E H04L41/08A T04L63/02C

US: 703/2 703/2P



Family:

Publication number	Publication date	Application number	Application date
US2006184342 AA	20060817	US20050284368	20051121

Priority:

US20040630056P 20041122 US20050284368 20051121

Probable Assignee: TT GOVERNMENT SOLUTIONS INC

Assignee(s): (std): NARAIN SANJAI

Assignee(s): TELCORDIA TECHNOLOGIES INC ; TT GOVERNMENT SOLUTIONS INC ; UBS STAMFORD BRANCH ADMINISTRATIVE AGENT AG AS ; VENCORE INC ; VENCORE LABS INC F K A TT GOVERNMENT SOLUTIONS INC ; VENCORE SERVICES AND SOLUTIONS INC F K A QINETIQ NORTH AMERICA INC ; WESTAR DISPLAY TECHNOLOGIES INC ; ANALEX CORP ; JPMORGAN CHASE BANK NA ADMINISTRATIVE AGENT AS

Inventor(s): (std): NARAIN SANJAI

Agent(s): TELCORDIA TECHNOLOGIES INC

2) Family number: 34254446 (US2007050613A)

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Title: ARCHITECTURE FOR MOBILE IPV6 APPLICATIONS OVER IPV4

Abstract: Mobile clients can execute IPv6 applications in an IPv4 environment without the need for any specialized IPv6 hardware or upgrades to the network infrastructure. The architecture provides a seamless, disruption-free connectivity experience for mobile clients. Mobile clients are automatically connected to other mobile clients irrespective of their network connectivity, whether wireless, wire line, IPv4, IPv6, public or private. Mobile clients communicate with other mobile clients using a secure, end-to-end IPv6 tunnel. This creates a persistent VPN connection between two clients using software.

Classifications:

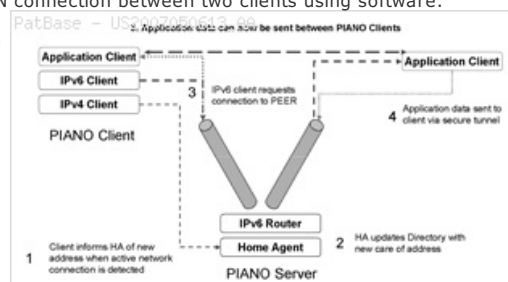
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H04W80/04 (Advanced/Invention); G06F15/16 G06F17/00 H04L29/12 H04W8/04 (Advanced/Non-invention); G06F21/00 H04L12/28 (Core/Invention)

CPC: H04L63/0272 H04L29/1233 H04L45/52 H04L61/25 H04L63/029 H04L63/0428 H04L63/08 H04L69/16 H04L69/167 H04W8/04 H04W80/04 H04W80/045

European: H04L29/06J H04L29/06J15 H04L45/52 H04L63/02C H04W80/04 H04W80/04V T04L29/12A4 T04L61/25 T04L63/02C T04L63/02E T04L63/04B T04L63/08 T04W8/04 T04W80/04V

US: 380/255 713/150 713/150P 713/150S 726/1 726/11 726/11P 726/26



Family:

Publication number	Publication date	Application number	Application date
US2007050613 AA	20070301	US20060468281	20060829
US2011023105 AA	20110127	US20100898502	20101005
US7810149 BB	20101005	US20060468281	20060829
US8976963 BB	20150310	US20100898502	20101005
WO07027958 A1	20070308	WO2006US34127	20060829

Priority:

US20050596077P 20050829 US20060468281 20060829 US20100898502 20101005

Probable Assignee: ISLAM JUNAID

Assignee(s): (std): ISLAM JUNAID ; MCFARLANE JOHN S ; WILLIAMS CARL

Inventor(s): (std): ISLAM JUNAID ; MCFARLANE JOHN S ; WILLIAMS CARL

Inventor(s): MCFARLANE JOHN

Agent(s): AKA CHAN LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

3) Family number: 38525446 (US2007234061A)

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Title: SYSTEM AND METHOD FOR PROVIDING TRANSACTIONAL SECURITY FOR AN END-USER DEVICE

Abstract: A network system comprises a transaction network operative to provide a transaction with an end user; a trusted source of a security mechanism (e.g., a start/stop trigger module, an application lockout module, a network/file I/O control module, a trusted driver manager, a keystrokes generator driver, a keystrokes deletion hook, and/or a transaction network VPN manager) for at least partially protecting an end-user device from malicious code operative thereon that attempts to capture confidential data presented during the transaction, the security mechanism being maintained by a party other than the end user; and an agent for providing the security mechanism to the end-user device to protect the end-user device during the transaction.

Classifications:

International (IPC 8-9): G06F11/00 G06F17/00 G06F21/00

G06F21/56 G06F7/04 H04L29/06 H04L29/08

H04L9/00 (Advanced/Invention);

G06F21/00 H04L9/00 (Core/Invention)

CPC: H04L63/20 G06Q20/382 G06Q30/06 H04L63/1441 G06F21/566

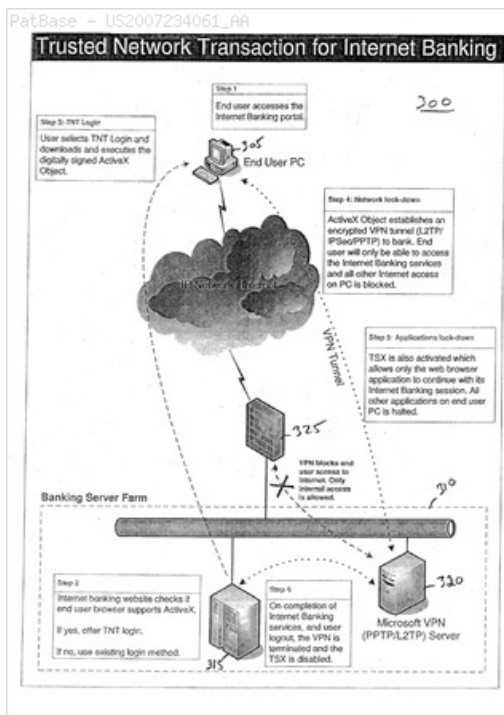
G06F2221/2119 H04L63/08 H04L63/102 H04L67/02

European: G06F21/56C G06Q20/382 G06Q30/06 H04L63/14D

H04L63/20 S06F221/2119 T04L63/08

US: 1/1 705/64 705/64S 713/168 713/178 713/178P 713/193 726/1

726/14 726/14P 726/1P 726/22 726/26 726/26P 726/27 726/5



Family:

Publication number	Publication date	Application number	Application date
US2007234061 AA	20071004	US20070694476	20070330
US2009037976 AA	20090205	US20080139422	20080613
US2009044266 AA	20090212	US20080111777	20080429
US2011209222 AA	20110825	US20110075569	20110330
US8434148 BB	20130430	US20070694476	20070330
US9112897 BB	20150818	US20080139422	20080613
WO07149140 A2	20071227	WO2007US07994	20070330
WO07149140 A3	20080410	WO2007US07994	20070330
WO09006003 A1	20090108	WO2008US67031	20080613
WO09006003 A9	20090226	WO2008US67031	20080613

Priority:

US20060787457P 20060330 US20060814828P 20060619 US20070694476 20070330
 US20070943780P 20070613 US20080111777 20080429 US20080139422 20080613
 US20110075569 20110330

Probable Assignee: ADVANCED NETWORK TECHNOLOGY LABORATORIES PTE LTD

Assignee(s): (std): ADVANCED NETWORK TECHNOLOGY LA ; ADVANCED NETWORK TECHNOLOGY LAB PTE LTD ; ANTLABS ; SOCKOL MARC A ; CHUNG HYUNG HWAN ; AUTHENTIUM INC ; TEO WEE TUCK ; TOH

TECK KANG ; SAFECENTRAL INC

Assignee(s): WONTOK INC ; SAFEGUARD DELAWARE INC ; ADVANCED NETWORK TECHNOLOGY LABORATORIES PTE LTD ; ADVANCED NETWORK TECHNOLOGY LABORATORY PTE LTD

Inventor(s): (std): TEO WEE T ; TEO WEE TUCK ; CHUNG HYUNG HWAN ; TOH TECK KANG ; SHARP JOHN C ; FREERICKS HELMUTH ; KOUZNETSOV OLEG

Agent(s): THELEN REID BROWN RAYSMAN AND STEINER LLP; SHEPPARD MULLIN RICHTER AND HAMPTON LLP; DARBY AND DARBY PC; SOCKOL MARC A ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

4) Family number: 34494466 (US2007248085A)

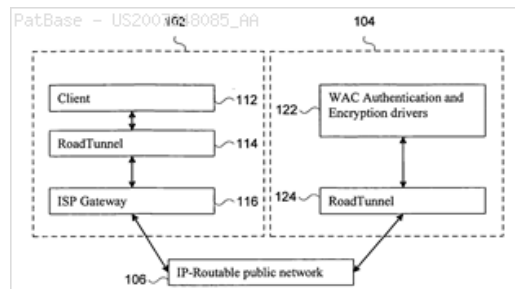
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Title: METHOD AND APPARATUS FOR MANAGING HARDWARE ADDRESS RESOLUTION

Abstract: Disclosed herein is a network device, such as a host computer, that simultaneously has two IP identities: a local IP identity on a local network (e.g., a non-virtual private network) to which the host computer is connected; and a remote IP identity on a second network (e.g., virtual private network) that is remote to the host. Only the remote IP identity is visible to the host operating system's network stack. Each IP identity has its own ARP cache and Address Resolution Protocol (ARP). The local ARP cache is managed with respect to a connection of the host to a local subnet (e.g., an Internet Service Provider (ISP) subnet) and the remote ARP cache is managed with respect to a remote subnet reachable through a gateway on the local subnet.

Classifications:

International (IPC 8-9): H04L12/46 G06F15/16 H04L12/28 H04L12/56 H04L29/10 (Advanced/Invention); G06F15/16 H04L12/28 H04L12/56 (Core/Invention)
CPC: H04L12/4679 H04L29/12028 H04L61/103 H04L61/2015 H04L63/0272
European: H04L12/46V3A H04L29/12A1A H04L29/12A3A1 H04L61/10A H04L61/20A1
US: 370/389 370/389P



Family:

Publication number	Publication date	Application number	Application date
TW200737883 A	20071001	TW20060141944	20061113
US2007248085 AA	20071025	US20060595418	20061109
WO07058981 A2	20070524	WO2006US43873	20061110
WO07058981 A3	20071213	WO2006US43873	20061110

Priority:

US20050735622P 20051112 US20060595418 20061109

Probable Assignee: E COLT SYSTEMS INC

Assignee(s): (std): CRANITE SYSTEMS ; VOLPANO DENNIS

Assignee(s): E COLT SYSTEMS INC

Inventor(s): (std): VOLPANO DENNIS ; VOLPANO DENNIS M

Inventor(s): VOLPANO DENNIS MICHAEL

Agent(s): TOWNSEND AND TOWNSEND AND CREW LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

5) Family number: 45171534 (US2010142410A)

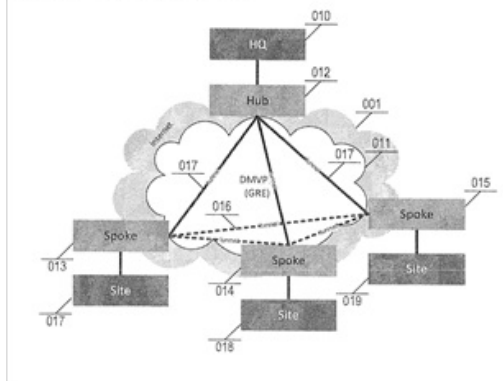
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Title: SYSTEM AND METHOD FOR PROVIDING VIRTUAL PRIVATE NETWORKS

Abstract: A computerized system and method for automatically determining customized configurations for each of a plurality of endpoints of a virtual private network (VPN) and deploying the configurations to the endpoints, comprising: accepting, using an interface, parameters required for building the configurations from a user, the configurations enabling the endpoints to process a mixture of time sensitive and non-time sensitive data, and the parameters comprising: endpoint IP addressing scheme information and network design information; automatically generating, using at least one configuration engine, complete customized endpoint configurations for the parameters, and instantiating the configurations based on endpoint hardware-specific information, with no further input required from the user; and deploying, using a scheduler, the configurations to the endpoints of the at least one VPN, wherein the VPN is an mGRE VPN using NHRP protocol.

Classifications:

International (IPC 8-9): G06F15/177 H04L12/24 H04L12/26 H04L12/28 H04L12/46 H04L12/701 H04L29/06 (Advanced/Invention); H04L29/06 (Advanced/Non-invention); H04L12/28 H04L29/06 (Core/Invention)
CPC: H04L12/4633 H04L12/4641 H04L63/0823 H04L63/164 H04L41/14 H04L45/00 H04L41/0806
European: H04L12/46E H04L12/46V H04L45/00 H04L63/02C T04L63/08C T04L63/16C
US: 1/1 370/254 370/255 370/255P

**Family:**

Publication number	Publication date	Application number	Application date
US2010142410 AA	20100610	US20090634536	20091209
US2016204983 AA	20160714	US20160997119	20160115
US9319300 BB	20160419	US20090634536	20091209
WO10068698 A2	20100617	WO2009US67384	20091209
WO10068698 A3	20100923	WO2009US67384	20091209

Priority:

US20080121127P 20081209 US20090634536 20091209 US20160997119 20160115

Probable Assignee: GLUWARE INC

Assignee(s): (std): GLUE NETWORKS INC ; GRAY JEFF ; HUYNH VAN OLIVIER

Assignee(s): GLUWARE INC

Inventor(s): (std): HUYNH VAN OLIVIER ; GRAY JEFF

Agent(s): DLA PIPER LLP US; DLA PIPER LLP; NORTON LISA K ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

6) Family number: 41930569 (US2008317011A)

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Title: VOIP MULTILINE FAILOVER

Abstract: Tools and techniques are provided to provide Voice-over-IP (VoIP) communications. On receiving a user request to initiate a telephonic connection from a local site, at which the user is using a VoIP telecommunication device which has no link failover functionality, a system establishes over wide area network links at least two tunnels between a controller at the local site and another controller. Then the system transmits VoIP traffic over at least one of the tunnels from the controller at the local site to the other controller. The system also detects failure of the primary tunnel during the call and performs failover by changing a data path during the call to transmit packets over at least one non-failed tunnel.

Classifications:

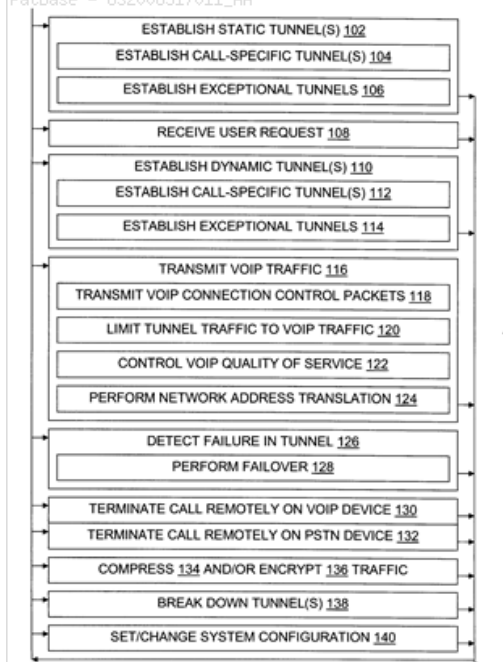
International (IPC 8-9): H04J1/02 H04L12/46 H04L12/66
H04L29/06 (Advanced/Invention);
H04L12/26 (Advanced/Non-invention);
H04J1/00 H04L12/66 (Core/Invention)

CPC: H04L65/1069 H04L12/4633 H04L43/00 H04L43/0829
H04L43/0852 H04L43/087 H04L65/1006 H04L65/80

European: H04L12/46E H04L29/06M2S1 H04L29/06M8 T04L12/26M
T04L12/26M3B1 T04L12/26M3C T04L12/26M3C3 T04L29/06M2H2
T04L43/00 T04L43/08E1 T04L43/08F T04L43/08F3

US: 370/225 370/356 370/356P

PatBase - US2008317011_AA

**Family:**

Publication number	Publication date	Application number	Application date
US2008317011 AA	20081225	US20070680593	20070228

US8995252 BB	20150331	US20070680593	20070228
WO08073569 A2	20080619	WO2007US81459	20071016
WO08073569 A3	20081113	WO2007US81459	20071016

Priority:

US20060863378P 20061029 US20060866934P 20061122 US20070891920P 20070227
US20070680593 20070228

Probable Assignee: FATPIPE NETWORKS PRIVATE LTD

Assignee(s): (std): BALASUBRAMANIAM PADMANABAN ; DATTA SANCHAITA ; FATPIPE NETWORKS ; RAGULA BHASKAR ; RAGULA SYSTEMS D B A FATPIPE N

Assignee(s): RAGULA SYSTEMS ; RAGULA SYSTEMS (D B A FATPIPE NETWORKS) ; RAGULA SYSTEMS D B A FATPIPE NETWORKS ; FATPIPE NETWORKS INDIA LTD ; FATPIPE NETWORKS PRIVATE LTD

Inventor(s): (std): BALASUBRAMANIAM PADMANABAN ; RAGULA BHASKAR ; DATTA SANCHAITA

Agent(s): OGILVIE LAW FIRM; OGILVIE JOHN W

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG UZ VC VN ZA ZM ZW

7) Family number: 42147649 (US2008219268A)

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Title: SOFTWARE CONTROL PLANE FOR SWITCHES AND ROUTERS

Abstract: A Provider Network Controller (PNC) addresses the challenges in building services across Next Generation Network (NGN) architectures and creates an abstraction layer as a bridge, or glue, between the network transport and applications running over it. The PNC is a multi-layer, multi-vendor dynamic control plane that implements service activation and Layer 0-2 management tools for multiple transport technologies including Carrier Ethernet, Provider Backbone Transport (PBT), Multi-protocol Label Switching (MPLS), Transport MPLS (T-MPLS), optical and integrated networking platforms. Decoupling transport controls and services from the network equipment simplifies service creation and provides options for carriers to choose best-in-class equipment that leverages the PNC to enable rapid creation and management of transports and services. The PNC provides Service-Oriented Architecture (SOA) interfaces to abstract transport objects expressly designed to support both wholesale and retail services, and supports service offerings with varied bandwidth and Quality of Service (QoS) requirements, thus achieving enterprise Ethernet economics.

Classifications:

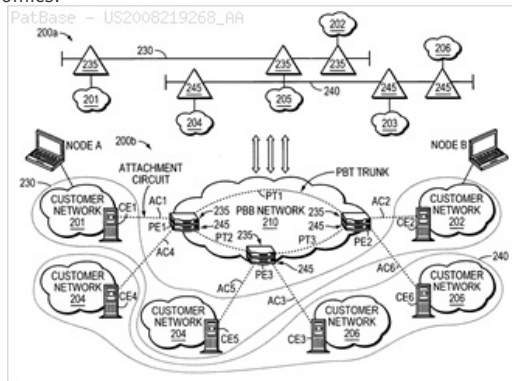
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H04L12/801 (Advanced/Invention);
G06F11/00 H04L12/46 H04L12/56 (Core/Invention)

CPC: H04L41/06 H04L41/5003 H04L43/0852 H04L45/00 H04L45/28 H04L45/308 H04L45/50 H04L45/56 H04L45/64 H04L47/2425 H04L43/0811 H04L45/22 H04L45/42 H04L12/4625 H04L12/4633 H04L45/04

European: H04L12/24D H04L12/26M3C H04L12/46B7B H04L12/46E H04L43/08C H04L43/08F H04L45/00 H04L45/04 H04L45/22 H04L45/28 H04L45/308 H04L45/42 H04L45/50 H04L45/56 H04L45/64 H04L47/24C T04L12/24S1 T04L41/06 T04L41/50A

US: 370/217 370/225 370/225S 370/351 370/395.2 370/395.200P 370/395.53 370/401



Family:

Publication number	Publication date	Application number	Application date
CN101785257 A	20100721	CN200880014455	20080229
CN101785257 B	20140723	CN200880014455	20080229
EP2122942 A2	20091125	EP20080726278	20080229
EP2122942 B1	20170830	EP20080726278	20080229
JP2010520663 T2	20100610	JP20090551739T	20080229
JP5410998 B2	20140205	JP20090551739T	20080229
US2008219268 AA	20080911	US20080074268	20080229
US8442030 BB	20130514	US20080074268	20080229
WO08108984 A2	20080912	WO2008US02707	20080229
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Priority:

US20070904259P 20070301 US20080032214 20080228 US20080032214P 20080228
US20080074268 20080229 WO2008US02707 20080229

Probable Assignee: SOAPSTONE NETWORKS INC

Assignee(s): (std): DENNISON LARRY R ; EXTREME NETWORKS INC ; SOAPSTONE NETWORKS INC

Assignee(s): AVICI SYSTEMS INC ; BANK OF MONTREAL ; SILICON VALLEY BANK

Inventor(s): (std): DENNISON LARRY R

Agent(s): LE FORESTIER ERIC; REGIMBEAU; HAMILTON BROOK SMITH AND REYNOLDS PC; BLAKELY SOKOLOFF TAYLOR AND ZAFMAN LLP; SMITH JAMES M ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

8) Family number: 31329699 (US2004225895A)

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Title: METHOD AND APPARATUS FOR PROVIDING ADAPTIVE VPN TO ENABLE DIFFERENT SECURITY LEVELS IN VIRTUAL PRIVATE NETWORKS (VPNS)

Abstract: A method and apparatus for providing at least two virtual private network VPN tunnels from a client device in a VPN network having an enterprise gateway and a network VPN gateway. The method and apparatus includes a client device having an Internet Key Exchange (IKE) module for establishing the at least two tunnels using an IKE protocol wherein a first tunnel is an end-to-end VPN tunnel to the enterprise gateway, and a second tunnel is a network-based tunnel to the network VPN gateway. An IPsec Network Driver Interface interfaces with the IKE module, which includes a security authentication database (SADB) that stores downloaded enterprise security policies respectively for each of the at least two tunnels. A routing table stores IP addresses of local presences and hosts respectively associated with the at least two tunnels, whereby packets are routed over the at least two tunnels based on the downloaded policies.

Classifications:

International (IPC 8-9): G06F15/16 G06F21/00 H04L12/46

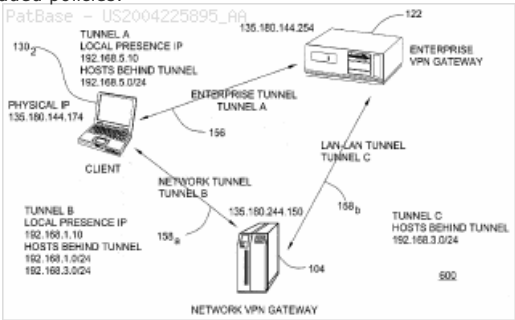
H04L29/06 H04L9/00 (Advanced/Invention);
H04L12/46 H04L29/06 H04L9/00 (Core/Invention)

International (IPC 1-7): H04L9/00

CPC: H04L12/4633 H04L63/0272 H04L63/164

European: H04L12/46E H04L29/06C6A H04L29/06S2C H04L63/02C
H04L63/16C T04L29/06C6R

US: 709/228 713/201 726/15 726/15P



Family:

Publication number	Publication date	Application number	Application date
US2004225895 AA	20041111	US20030429815	20030505
US7478427 BB	20090113	US20030429815	20030505

Priority:

US20030429815 20030505

Probable Assignee: ALCATEL LUCENT USA INC

Assignee(s): (std): ALCATEL LUCENT USA INC ; LUCENT TECHNOLOGIES INC

Assignee(s): CREDIT SUISSE AG

Inventor(s): (std): MUKHERJEE SARIT ; PAUL SANJOY ; RANGARAJAN SAMPATH ; TAKKALLAPALLI ANIL

9) Family number: 30258713 (US2004010583A)

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Title: METHOD AND APPARATUS FOR DEFINING FAILOVER EVENTS IN A NETWORK DEVICE

Abstract: A critical interface may be defined for a network device such that if the critical interface goes DOWN, the network device will perform a forced failover. IP addresses are assigned to interface groups, and interface groups are assigned to a critical interface. The critical interface will go DOWN if any one of the interface groups goes DOWN. The interface groups will not go DOWN, however, unless all members' IP addresses assigned to the interface group go DOWN. By configuring the critical interface in this manner, the network manager has increased flexibility in defining which events should and should not trigger failover of the network device. Additionally, combinations of events may be grouped to enable the network manager to take into account fairly complex failure scenarios and specify, with precision, the action to be taken by the network device under myriad possible situations.

Classifications:

International (IPC 8-9): G06F15/16 G06F15/173

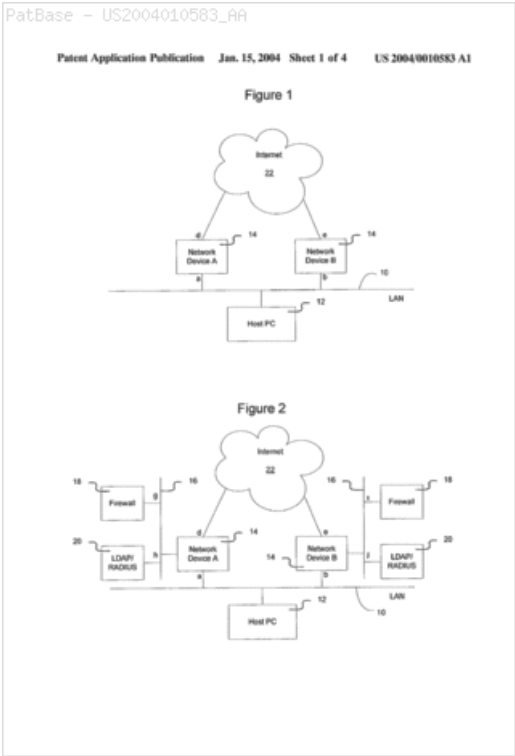
H04L12/56 (Advanced/Invention);
G06F15/16 H04L12/56 (Core/Invention)

International (IPC 1-7): G06F15/16

CPC: H04L45/00 H04L41/0663 H04L43/0817 H04L45/28 H04L45/586

European: H04L45/00 H04L45/28 H04L45/58B

US: 709/223 709/224 709/224P 709/229 709/23 709/230 709/230S



Family:

Publication number	Publication date	Application number	Application date
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US2004010583 AA	20040115	US20020192663	20020710
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Priority:

US20020192663 20020710

Probable Assignee: AVAYA INC

Assignee(s): (std): NORTEL NETWORKS LTD

Assignee(s): NORTEL NETWORKS LIMITED ; OCTEL COMMUNICATIONS LLC WAS KNOWN AS OCTEL COMMUNICATIONS CORPORATION.. ; VPMET TECHNOLOGIES INC ; GOLDMAN SACHS BANK USA COLLATERAL AGENT AS ; SIERRA HOLDINGS CORP ; AVAYA INC ; AVAYA INTEGRATED CABINET SOLUTIONS INC ; BANK OF NEW YORK MELLON TRUST CO NA ; BANK OF NEW YORK MELLON TRUST NA NOTES COLLATERAL ; BANK OF NEW YORK MELLON TRUST NA NOTES COLLATERAL AGENT AS ; CITIBANK NA ADMINISTRATIVE AGENT AS ; CITIBANK NA COLLATERAL AGENT AS ; CITICORP USA INC ADMINISTRATIVE AGENT AS

Inventor(s): (std): YU KEN ; JESURAJ RAMASAMY ; KUDUR ARUN ; CHANG SHANG

Agent(s): ANDERSON GORECKI AND MANARAS LLP

10) Family number: 51878760 (US2012250516A)

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Title: TECHNIQUE FOR USING OER WITH AN ECT SOLUTION FOR MULTI-HOMED SITES

Abstract: In one embodiment, a plurality of spoke-to-hub virtual private network (VPN) tunnels are established from a spoke router located at an edge of a spoke network to a hub network. The spoke router is configured as an optimized edge routing (OER) node. The spoke router monitors a network statistic for each of a plurality of prefixes on each of the plurality of spoke-to-hub VPN tunnels. The monitored network statistic is analyzed to determine whether a distribution of traffic between the spoke network and the hub network can be optimized. In the event the distribution of traffic between the spoke network and the hub network can be optimized, traffic is redistributed on a per-prefix basis among the plurality of spoke-to-hub VPN tunnels based on the monitored network statistic, such that at least a portion of the traffic is routed over each of the plurality of spoke-to-hub VPN tunnels.

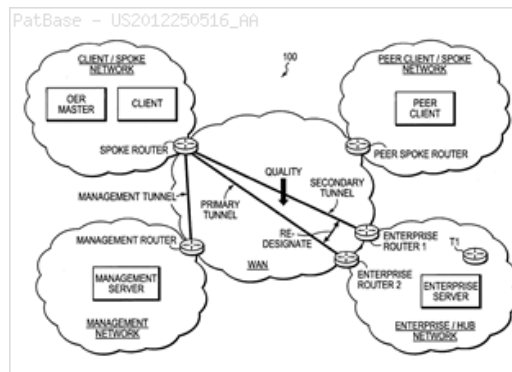
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H04L12/26 (Advanced/Invention)

CPC: H04L45/125 H04L45/22 H04L45/26 H04L63/0272 H04L45/24

US: 370/238 370/252 709/226 709/239



Family:

Publication number	Publication date	Application number	Application date
US2012250516 AA	20121004	US20120495845	20120613
US8260922 BA	20120904	US20050229421	20050916
US8706883 BB	20140422	US20120495845	20120613

Priority:

US20050229421 20050916 US20120495845 20120613

Probable Assignee: CISCO SYSTEMS INC

Assignee(s): (std): AGGARWAL GAUTAM ; BLAIR DANA ; CISCO TECH INC ; SHAH PRITAM ; THRIVIKRAMANNAIR AJITH

Assignee(s): CISCO TECHNOLOGY INC ; CISCO SYSTEMS INC

Inventor(s): (std): THRIVIKRAMANNAIR AJITH ; SHAH PRITAM ; BLAIR DANA ; AGGARWAL GAUTAM

Agent(s): CESARI AND MCKENNA LLP; NOVAK DRUCE CONNOLLY BOVE AND QUIGG LLP

11) Family number: 30258792 (US2004010731A)

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Title: METHOD AND APPARATUS FOR DEFINING FAILOVER EVENTS IN A NETWORK DEVICE

Abstract: An user may define failover events in a network device by customizing the network device's response to a failure on the network. Specifically, an user may instruct the network device to activate or deactivate one or more interfaces, or undergo any number of additional communications, upon a perceived network failure or critical interface failure. This enables the network device to initiate or terminate connectivity with one or more network devices, as well as optionally performing failover to a standby network device, to enable the network device to more smoothly handle failover procedures and transition traffic to the network device that will be responsible for communication after failover has been effected.

Classifications:

International (IPC 8-9): G06F11/00 G06F11/20 (Advanced/Invention);

G06F11/20 (Core/Invention)

International (IPC 1-7): G06F11/00

CPC: G06F11/2005

European: G06F11/20C2

US: 709/239 714/4 714/4.12 714/4.120P 714/E11.084 714/E11.084S

Figure 1

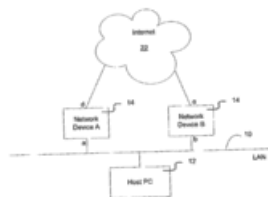
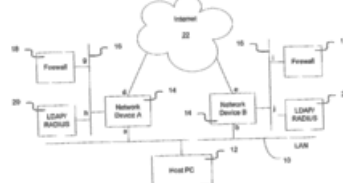


Figure 2

**Family:**

Publication number	Publication date	Application number	Application date
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US7010716 BB	20060307	US20020192252	20020710

Priority:

US20020192252 20020710

Probable Assignee: AVAYA MANAGEMENT LP**Assignee(s):** (std): NORTEL NETWORKS LTD**Assignee(s):** AVAYA HOLDINGS LTD ; AVAYA MANAGEMENT LP ; CITIBANK NA ; GOLDMAN SACHS BANK USA ; NORTEL NETWORKS LIMITED**Inventor(s):** (std): YU KEN ; CHANG SHANG**Agent(s):** JOHN C**12) Family number: 46847831 (US7801030B)**

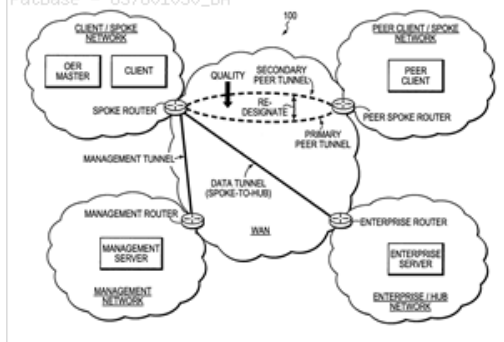
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Title: TECHNIQUE FOR USING OER WITH AN ECT SOLUTION FOR MULTI-HOMED SPOKE-TO-SPOKE SITES

Abstract: A technique dynamically creates and utilizes a plurality of multi-homed Virtual Private Network (VPN) tunnels from a client node of one spoke network to a client node of another spoke network in a computer network. According to the technique, a VPN client node, e.g., a "spoke," creates at least one VPN tunnel with an enterprise network, e.g., a "hub." Once the spoke-to-hub tunnel is established, the spoke may dynamically create a plurality of VPN tunnels with a peer spoke network, e.g., a "peer spoke." The spoke designates (e.g., for a prefix) one of the tunnels as a primary tunnel and the other tunnels as secondary tunnels, and monitors the quality (e.g., loss, delay, reachability, etc.) of all of the dynamic tunnels, such as, e.g., by an Optimized Edge Routing (OER) process. The spoke may then dynamically re-designate any one of the secondary tunnels as the primary tunnel for a prefix based on the quality of the tunnels to the peer spoke. Notably, the spoke may also dynamically load balance traffic to the peer spoke among the primary and secondary tunnels based on the quality of those tunnels.

Classifications:**International (IPC 8-9):** H04J1/16 (Advanced/Invention); H04J1/00 (Core/Invention)**CPC:** H04L2212/00 H04L63/0272 H04L12/44 H04L12/4633 H04L12/4641 H04L45/04 H04L45/121 H04L45/124 H04L45/22 H04L47/125**European:** H04L12/44 H04L12/46E H04L12/46V H04L45/04 H04L45/121 H04L45/124 H04L45/22 H04L47/12B H04L63/02C T04L212/002E**US:** 370/227 370/228 370/465

PatBase - US7801030_BA

**Family:**

Publication number	Publication date	Application number	Application date
US7801030 BA	20100921	US20050229422	20050916

Priority:

US20050229422 20050916

Probable Assignee: CISCO SYSTEMS INC

Assignee(s): (std): CISCO TECH INC

Assignee(s): CISCO TECHNOLOGY INC ; CISCO SYSTEMS INC

Inventor(s): (std): THRIVIKRAMANNAIR AJITH ; SHAH PRITAM ; BLAIR DANA ; AGGARWAL GAUTAM

Agent(s): CESARI AND MCKENNA LLP

13) Family number: 28332861 (US2002075813A)

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Title: METHOD AND APPARATUS FOR COORDINATING ROUTING PARAMETERS VIA A BACK-CHANNEL COMMUNICATION MEDIUM

Abstract: Systems and methods are described for enabling routers to coordinate via a back-channel communication medium. The information exchanged over the back-channel is used to increase the number of paths considered for the routers during route optimization. The Decision Makers may assert routes and prefixes to the routers under their control. This may be done via a Border Gateway Protocol (BGP) feed. The Decision Makers, in turn, communicate separately with one another, in order to coordinate routing policy amongst themselves. This coordination may be performed over a back-channel, which may take the form of physical or logical connections between the Decision Makers.

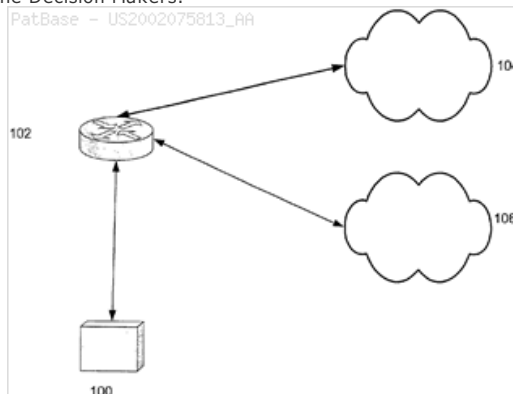
Classifications:

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H04L12/801 H04L12/803 H04L12/813 H04L12/841 H04L29/06
H04L29/08 (Advanced/Invention);
H04L12/56 (Advanced/Non-invention);
G01R31/08 G06F11/00 G06F15/16 G08C15/00 H04J1/00 H04J3/14
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H04L12/56 H04L29/06 H04L29/08 (Core/Invention);
H04L12/56 (Core/Non-invention);
H04L (Subclass/Invention)

International (IPC 1-7): G01R31/08 G06F15/16 G06F15/173 H02J
H04L12/00 H04L12/26 H04L12/28 H04L12/56 H04L29/06
CPC: H04L45/46 H04L45/12 H04L41/142 H04L43/106 H04L43/0829
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European: H04L12/14 H04L12/24A2 H04L12/24C1 H04L12/24E1B H04L12/24E1B1 H04L12/24E1B3 H04L12/24E1B3A
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US: 370/231 370/232 370/233 370/234 370/235 370/235P 370/237 370/238 370/238.1 370/238.100S 370/252 370/252P
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Family:

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Probable Assignee: AVAYA TECHNOLOGY CORP

Assignee(s): (std): AVAYA TECHNOLOGY CORP ; AVAYA INC ; BALDONADO OMAR C ; BALONADO OMAR C ; LLOYD MICHAEL A ; FINN SEAN P ; KARAM MANSOUR J ; MCGUIRE JAMES G ; KARAM MANSOUR ; LEDDY JOHN G ; FEICK WAYNE ALLEN ; LLYOD MICHAEL A ; FEICK WAYNE A ; MADAN HERBERT S ; ROUTESCIENCE TECHONOLOGIES INC ; SIDDIQI FAISAL ; VILLAYERDE JOSE MIGUEL PULIDO ; PULIDO JOSE MIGUEL ; VILLAYERDE JOSE MIGUEL PULIDO ; ROUTESCIENCE TECHNOLOGIES INC

Assignee(s): ROUTESCIENCE TECHNOLOGIES ; ROUTESCIENCE TECHNNOGIES INC ; OCTEL COMMUNICATIONS LLC WAS KNOWN AS OCTEL COMMUNICATIONS CORPORATION.. ; VPNET TECHNOLOGIES INC ; SIERRA HOLDINGS CORP ; CITIBANK NA ADMINISTRATIVE AGENT AS ; CITICORP USA INC ADMINISTRATIVE AGENT AS ; BANK OF NEW YORK MELLON TRUST NA NOTES COLLATERAL ; BANK OF NEW YORK MELLON TRUST NA NOTES COLLATERAL AGENT AS ; GOLDMAN SACHS BANK USA COLLATERAL AGENT AS ; OCTEL COMMUNICATIONS LLC ; CITIBANK NA COLLATERAL AGENT AS ; CITIBANK NA ; CITICORP USA INC ; BANK OF NEW YORK MELLON TRUST CO NA ; AVAYA INTEGRATED CABINET SOLUTIONS INC ; AVAYA TECHNOLOGY CORP BASKING RIDGE ; AVAYA TECHNOLOGY LLC

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Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW