Padavan f/w???ASUS???????????, ??Linux-based kernel(????BusyBox solution), ????f/w???????GUI???. Padavan f/w???????????? ????MIPS-based CPU solution??, ??????ARM-based CPU??.
Link: https://code.google.com/p/rt-n56u/
????????, ??????Padavan?????N56U?RT3662 solution???????, ???f/w???????Padavan f/w:

????: dlna, aria, base??????f/w, ???????????, ???changelog??Padavan f/w???????????????????:

????????, Padavan f/w???????????, ?????????(Hardware Acceleration)???, ????RT3xxx ASIC driver?????????? ??:

????Padavan f/w??????GUI???, ?????????????????????:

GUI???????, ?????.??Padavan f/w???QoS??, ?????????, ???Monitoring????????????.

Hardware Components

??N56U?????, ?????: RT3662F SoC, DDR2 RAM buffer, 802.11n 2.4GHz RF PHY?1Gb/s ASIC Switch logic.

????PCB???????????IC????, RT3662F??SoC????????, ?????MIPS-based CPU??, SoC????????????, ??????????? SoC????????????:

??????????, ??????PCIe lane????2.4GHz?802.11n Wireless PHY(RF/BBP/MAC): RT3092. ????(PHY port linking)?????Realtek?Switch chip: RTL8367M, SoC?Switch???host-bus???1Gb/s. RT3662??SoC?????????? Frame Engine??, Frame Engine?SoC???NPU?????, NPU??traffic??SoC?, ??fast-path??????ASIC????, ?????cpu port?slow-path??CPU?handle, ?????????(900~950Mbps).

???traffic??fast-path??, ?????packet??????ASIC?????, ??! wireless traffic?????ASIC??????, ??????CPU loading. ?Frame Engine???????????: PPE(Packet Processing Engine). ??????????????ASIC????, PPE?????NPU? ??, ??????????ethernet packet. PPE?????????:

ASIC?PPE?????????, ????f/w???driver??, driver???????????????????. ?PPE?????????IPv4 packet???, ????PPPoE ?????(without MPPE), ????????, PPE??????WAN???, ?????????PPPoE?????????(Internet). PPE????????1Gb/s?? ??. PPE???H/W QoS???, ?Padavan f/w????????QoS module??, ?????module???software-based, PPE?QoS????? ????.

Wireless??SoC????, ?????????(5GHz), ??????2.4GHz???????2.4GHz Wireless PHY(RT3092), ???Wireless??? traffic?????PPE??, ???! Wireless?Wired??????????????. ??????CPU??handle, ?????????, ?????wireless clients, ???multi-threading????(N65U???????, ???????????).

N56U?????128MB?DDR2-800 RAM, ???????, ?????RAM????, ???USB Application, ??caching?????????RAM buffer, ????CPU loading.

CPU???SoC???, ??????????, CPU????????, OS?????, packet???, ????debug?..RT3662?????MIPS-based CPU: 74Kc, clock?500MHz, ??????????????single-thread CPU, ???FPU.

CPU??????, ???????, ????300M???????, ???????! ????????VPN, ???????software-based, ?????????CPU??, ?? RT3662?74Kc, ???????(74Kf), ???????, ????????VPN?????, ?MPPE???, ?????CPU loading.

Padavan System

???Padavan???, ?????????GUI??. ??????context menu.

????????: VPN, Monitor, Wireless, LAN/WAN, Firewall. ??????????. ???????????:
?????(Russia)????????(English)

Network Map??????dashboard, ??????????, ???????????????.

???????GUI???????, ??WAN?(Inbound)????????(Administrative traffic), ???f/w??????port range.

????????, ???f/w?????????User??GUI, ??User????????, ?????????????????. ???????, ????????????, 2???????
GUI?????????, ???????????, ??????.
AP??????Padavan????????: Wireless Router Mode (Default) ? Access Point Mode (AP)

?????????Router Mode, ??????L2????,????L3/L4????????, ??IP routing, NAT, DHCP?. ?AP mode?????L2 Bridge,
??????L2??????. ??????, SPI Firewall, Routing?NAT?????????.
????????, ?PC client??DHCP???, ???Router??Router/NAT??AP/Bridge mode????????.

?Router/NAT mode????, PC cient??DHCP??(UDP, 67-68, ??), ???Router??????????????IP??client, ???DHCP
Server???????????DHCP??, ????????Router mode?Router????; ??, ?Router????AP/Bridge/Transparent mode
???, ???client??DHCP?????????DHCP Server, ?DHCP Server???????????????, ????DHCP???.

AiDisk & USB Application
AiDisk???????, ??USB Application??????, ???????N56U??USB????. ?????, ???????????, ???????????, ??????
CPU time.

????????, ???????????????, ???cached??????????:

??????USB Drive??N56U????????(Add-in Storage)??FTP??????, CPU??????????????:

???????, ????????cached memory??????, CPU???????????(CPU Usage). ????SanDisk??????16GB????, ????
4~9MB??, ????????????????:

??USB Application???, Padavan??????RBAC, ??????/??/???????, ?????????????:

Padavan??USB?????????????, ?????FTP??:

Padavan????????USB?????????: USB Printer???????????3G/4G(LTE) USB????Wireless WAN??:

???Padavan??????(USB Storage)?????????, ???????????????:

Note(s):
1. Padavan??NTFS???????(File System).

2. ?????500GB USB Drive???N56U??FTP?????I/O??:

?????, ???CPU???. I/O??15~22MB??, ?????, ??Administrative Traffic?????PPE??.
[UPDATED, 201402131744] How to use Transmission?
?Padavan????????????:Transmission, ??????????BitTorrent???P2P??, ????magnet???. ????????Padavan????
BitTorrent????P2P??????????USB??????(???????). ???????????????transmission????:

?????????, ??Torrent Transmission??, ????Incoming Port(inbound)?????WebUI????????RPC Port:

????SPI Firewall??????(Transmission)??:

?System Log?Port Forwardinh????, ?????????:

?????????Port forwarding??DNAT??, ???SPI Firewall???????????????????. ??PRC Port??Public IP??WebUI, ???????????????:

??????????????BitTorrent????????. ?????System Info?CPU monitor??????:

?WebUI?????????, ??CPU??????????:

?????CPU???????, ?torrent(s)????, ?????????, ????CPU loading??????, ??????????. Transmission????????????GUI????, ??UI???????, ?????????:

Software-based VPN

VPN Server?VPN Client????VPN?????, ???????VPN??:

???????, ??????????PPTP??L2TP, OpenVPN?????. ??VPN????software-based, ???????CPU??????:

VPN?CPU??????, N56U??????ASIC???VPN??????, ??Padavan??????, ?????????, ??????, ????x86 CPU???NAS??????(ex: SYNOLOGY, QNAP, etc...).
MPPE encryption is software processed by router CPU and is very hard, max 24-25Mbit/s. PPTP w/o MPPE ~170Mbit/s
??! ?????????, ????????, ?????????????, ??????????.
[UPDATED, 201402181941] How to setup the PPTP Server?
??VPN????Remote Network?Local Network??????????LAN?, ?????????tunnel????. ?Padavan?????VPN????, PPTP?????????, ??PPTP??????. ???PPTP???????, ????????????:

??????????????, ?????MPPE-128??, ??????????CPU loading???????. ??????????????, ????????????:

????????VPN client???IP??, ??????LAN????????, ??????????Allocate Subnet for VPN Tunnel?????, ????VPN client???????

???????, client??????????????PPTP VPN?Padavan??, ?System Log??????????:

??MPPE-128??????tunnel. ?????, Routing table?????, ?????????VPN client?routing:

?client??, Routing table?????????: routing??????????(Mertic)??:

?VPN???????????????session??, ??????IP??:

VPN?????Routing table?????default route(0.0.0.0/0)???????(Metric??), ?????????????default route, ???????? PPTP tunnel?????. Ralink RT3662????????VPN?????(enc/dec)??, ???CPU loadingk???:

???MPPE-128???tunnel?, ???????????, ???????????, ??CPU loading?????. PPTP??????, ???????????????, ????? ???????(>100M), ??????????????????. Padavan???VPN??software-based, ???????????????????, ??????????????????

???, ??????????.

Resource Monitoring
Padavan????f/w???????Monitor: CPU?Memory. ???Monitor?????????????, ?????????????????! ???????????
?????CPU??????????:

CPU Usage??????:

Memory Usage??????:

?????f/w?????, Traffic Monitor??????, ???????????????????, ???????????:

Wiresless 2.4/5GHz
Padavan?????????????: 2.4GHz?5GHz. ????Guest, Bridge, Filter, RADIUS???????????:

??Guest AP???????Guest??, ?????LAN?????????Guest?????(????). ?????Captive Portal??, ???????Guest??????
?.

Isolaion between Guest AP and LAN: ?????????LAN???.
Set AP Clients Isolated: ??Guest????? (?Guest??????????).
??Bridge??????AP?AP????????????, Pradavan??????????:

????WDS????Server-Client?????, ????????????Mesh??, ????????AP Load-balancing, ?????????????????, ?????
?.
Padavan???????RADIUS??????????, ??????RADIUS Server???, ????Windows Server, ?????AP???, ?????
RADIUS Client??????.

???RADIUS??, ??????????RADIUS?????:

??Padavan???QoS??, ???Wireless????QoS????????, ????WMM??(802.11e)???.

?Padavan???????, ?????????????(Priority), ???????????????(Queue)???, ??????????????, ????????QoS???????
(??????). ?????FortoGate??DSCP(??COS)??????:

???????(Ethernet)?????802.1P???????WMM QoS????COS??:

?????UBNT??WMM QoS?????????: UniFi - How is QoS and prioritization handled?
http://community.ubnt.com/t5/UniFi-Frequently-Asked-Questions/UniFi-How-is-QoS-and-prioritization-handled/ta-p/412487
?????????BE(Best Effort), ????????, ????, ???????FIFO(??traffic???, ??Administrative Traffic).
??DSCP, COS, TOS??QoS??????????MIS???????, ???????????????. ?Padavan????, ?????????????WMM QoS?
?. DSCP, COS, TOS?..., ???????(Hardware-based), ?????L2 switch????NPU???switch logic??????H/W QoS??. ?RT3662F SoC?Fame
Engine??????:

???SoC???5GHz??????2.4GHz?PHY(RF/BBP/MAC), ??ADC/DAC=>MAC??, ?????(packet)????????????AP/NP logic??, CPU(MIPS
74Kc)????????, ??CPU???????????:

5GHz?2.4GHz WiFi traffic?????CPU??, ?????????loading, ??????????, PPE???????traffic???CPU??. ???2.4GHz WiFi client??FTP???, ?
??CPU loading?????????:

?WAN???????Hardware offload NAT/Routing IPv4?????, ??????????WLAN?PPE??:

?Wireless client?AP(Padavan)???????, ????????! CPU(MIPS 74Kc)??????????????. ???, ?????WLAN???offload?NPU???????traffic?? WAN??(inbound), ??NAT(DNAT)??????PPE??:

?N56U???????SoC???????Wireless PHY(RF\BBP\MAC)????(Dual-band)??, ?????2.4GHz PHY(RT3092)??traffic, ??????????????? (BBP)?ADC/DAC?????MAC???????, ????TCP/IP stack??????????2.4GHz PHY??, ?????SoC?CPU(MIPS 74Kc)????????(AP/NP), ????? 5GHz?2.4GHz????, CPU???????????, ??Frame Engine??PPE?????????(Ethernet)??IPv4???????, ?????????. ?????N65U?2.4GHz PHY?? ???:

????RT3092(RF/BBP/MAC)???RT3352, ?SoC??RF3883F(MIPS 74Kc, 500MHz), ?????????????! RT3352?RT3883F????????, ???SoC. RT3352?????2.4GHz?Wireless??, ??N56U?RT3662+2.4GHz PHY(RF/BBP/MAC), 2.4GHz???????RT3352???, ???????CPU(MIPS 24Kc, 400MHz), ???????CPU???2.4GHz???????, ????CPU(Main CPU; RT3883F)??, RT3352?????????(Co-processor), ??????????CPU???????? ?. RT3883F+RT3352????CPU??, ??RT3352??2.4GHz???????, ?RT3883F???5GHZ????.

LAN&WAN Configuration

Padavan?LAN??WAN??????f/w???????, ?????????. Padavan?WAN?????????????, ??PPPoE??????VPN??:

??IPoE(??IPv4????)??PPPoE??, ??????????????PPE????, ????! VPN????????????. PPPoE???PPE????SoC???????, ???????sessions????, ????????????PPE?????.
PPTP and L2TP cannot HW_NAT offloaded for RT3662. Only IPv4/IPv6 and PPPoE (up to 900Mbit/s) => IPv6? ??????

????LAN??WAN?traffic, ???????, ?????NPU?????????. ???LAN??????????, ???????L2??(forwarding), ?????SoC, ???switch logic?????? frame(???), ???routing??????????????switch logic???SoC????, ?Padavan?????LAN=>WAN???. ??????(Internet)?????LAN???IP range(Private IPs), ??????????????table??public IP??Private IP?????, ??NAT??, ?????Fortinet???????NAT?????:

???????192.168.1.0/24???????????Public IP: 172.20.120.14??NAT????, ???????????????! ??(Header)?Source??192.168.1.x/24??? 172.20.120.14(Src Port????LAN?IP?Src Port)????, ??????????, ???SNAT(Source-NAT); ?????????Public IP, ????Gateway???Public IP? routing. ??????, ?????built-int Sniffer?????packet??, ??????????:

?????NAT???????table size??????, ????????????, ????????. N56U????RT3662F SoC, ?????????, ??????????????NAT??, ???????7~8?? sessions; ???????????: P2P, ?????.. ?SoC???Frame Engine, ????PPE???????TCP?UDP????(????), ??????ASIC?H/W NAT??, ?Padavan? WAN???????????:

?Hardware offload NAT/Routing IPv4????Disable?????H/W NAT, ???????NAT??????fast-path, ???????slow-path???CPU????, ????? ??ASIC?H/W NAT????3~4???. ??????H/W NAT??, ??System Log????????:

???????, ???H/W NAT?????????????????, ???H/W NAT????(LAN=>WAN):

????Downlink?????????, ?????????, ???; ???????CPU??, ?CPU Load????????????, ??????????????, ??????. ????H/W NAT?????????? (LAN=>WAN):

Downlink????????, ??????CPU?I/O???????, ??H/W NAT????Frame Engine?PPE??????????, ??????????????, ?????????I/O???, ??????

debug??????????H/W NAT. ????FGT200B?N56U???Traffic Monitor, ???CPU?H/W Acceleration??????????(LAN=>WAN):

??????Jumbo frame, ?FTP??????, PPE????????????????????; ??FGT200B??CPU??traffic?????????, ????CPU??????(100%), GUI??????? ????.

[UPDATED, 201402140031] PPE vs. QoS vs. Non-QoS

??????f/w??QoS??Non-QoS?PPE???????, ?QoS????????, ???????????????:

??FTP??????, ??????????, ?????:

????PPE???????????, ??CPU loading????, GUI????????. ??????QoS????CPU?????, ???QoS?, ????????QoS????, ?????????200Mbps??, ?? ??100~150Mbps?????(Internet), ??????????????(>200Mbps), CPU loading??100%, ??GUI??????????.
Note(s):
?????????, ???100(??)~150Mbps??CPU???????????????????GUI??????.

(??????????...!!)

???SNAT?????????, ????(Reversed)??????, ??NAT???table??????Client????, ??????. ??, ??????N56U????client??????, ????FTP(20, 21) ??, ????????, ???????????????????client, ?Padavan??????Port Forwarding?????.

?????????N56U?????client, ????FTP????(21), ??????????WAN?Public IP, ???WAN IP?????client??????, ???FTP??, ???port??????, ? WAN IP??LAN client????FTP port. ?System Log?Port Forwarding??????????:

?????Fortinet????????, ??Port Forwarding:

??????????172.20.120.14??Public IP, ?????????192.168.1.110????, ???????????????client???. Port Forwarding???????, 172.20.120.14<==>192.168.1.110????????80 port??Web??. ?????????172.20.120.14, ??80 port???, ??Port Forwarding????? 192.168.1.110, packet?header??DST(???)????, ????????????NAT??, ???DNAT(Destination NAT), ??????Public IP?????port(fixed port)???LAN?????client IP, ??????????, ??????Static NAT. ??????, ?????built-int Sniffer?????packet??, ??????????:

????????client????????, ?????port?Public IP????, ???DMZ(Demilitarized Zone).

??????client??DMZ, ??????, ??????WAN IP???????client. ????????????, Administrative Traffic??Port Forwarding(DNAT)???, ?????? ???DMZ???. ??????:
Administrative Traffic => Manual DNAT Traffic => DMZ Traffic
???System Log????, ??Port Forwarding table????????:

??????????????port??????, 192.168.1.1:21?10.2.150.190:21, ?????DNAT?????????????. ??????????, ??Administrative?192.168.1.1?? ?????, ???DNAT??????????????10.2.150.190:21.

??????????USB Application????????, ?????(Service), ???FTP(21), Padavan?????????DNAT?????192.168.1.1:21?Administrative?IP??? ??USB Drive, ??????Manual Port Forwarding??????Port???????client IP, ?????????Port??(Port Conflict). ?????Manual Port Forwarding?client????????, ???????????????port???????Router Service???????; ???????, ????10.2.150.190:21, ?192.168.1.1:21?FTP ?Router Service????:

Padavan??DDNS??????PPPoE??ISP??DHCP???IP??Domain Name???. ????????DDNS??:

?Padavan??LAN???MTU?????????16K, ????IPv4??????????1500bytes??Jumbo Frame:

?????MTU????16K, ???????client????Jumbo Frame?, ??????LAN????I/O???(??????).

????????LAN=>WAN???????, ????f/w?????(issue), ??????????. ??, RTL8367M????16KB?MTU??, ??RT3662F?SoC?????:

?????, ????????????, SoC???????4KB?MTU???packet. ??client????4KB?Jumbo Frame????LAN=>WAN???????????. ??Jumbo Frame?????, ??client?????IPv4????????????(1500bytes).
Note(s): Administrative Traffic?packet???Jumbo Frame, ??????USB Application???, ???client???Jumbo Frame.

???WAN??LAN??????Router(N56U)???IP?, ??????????????(????), ?????????. ???WAN IP?????, ???????0.0.0.0/0?Default Route, ?????
?????Gateway. ?System Log?Routing Table????:

10.2.129.0/24??192.168.1.0/24???WAN??LAN?????; 127.0.0.0????????loopback, ????. ????????(DST)?????????, ??????
default(0.0.0.0/0)???10.2.192.100?Gateway(UG)????, ??????Iface??????WAN?eth3??, br0??Port1~4?LAN.
??????????????Gateway??, ???LAN????, ??LAN?????Router, ????????192.168.2.0/24. ??Padavan???????, ??????????Padavan??????
?, ????????Gateway(UG, 10.2.129.100)??, ??????????(Unreachable). ?Route????????????, ?????:

???192.168.2.0/24???????192.168.1.101?Gateway(UG), ??System Log?Routing Table????:

?????????????, ??????192.168.2.0/24??????????Gateway(UG, 192.168.1.101)????. ???????????????, ??????(Unreachable)?????.

Padavan??STP(Spanning Tree Protocol)?????, ???????L2 loop????(???).

????, ????????.

IPv6 Connection
?IPv4?, IP????????8??????32???????????. ?????????, ??????????, ???????:

??IPv4??????????????, IPv6???????. ????????; ???, ??????????, ??????:

IPv6??8?16?????128???????????. ?????????, ???????????(8001.0DB8.AC10.FE01::). IPv6??????(prefix)????????(network prefix)???
ID(interface identifier). ??client???IPv6???????, ??Unicast??:

network prefix?routing prefix?subnet id??, ?interface id???????client???????, ??????. subnet id?????????????????.
?????????LAN??????IPv6????: 1234:5678:9012:0200::/56, /56?routing prefix, network prefix=64. ??8?????.
1. ??subnet id?64 - 56 = 8, ??????????.
2. ??????: ??subnet id???16??????????(:200:).
3. ???subnet id??????????????. :200: => 0000 0010 0000 0000
4. ??subnet id????????????([?] ????): 0000 0010 [0000 0000]

5. ????????, e.g., [0000 0001]~[0000 0008]??8????=>0000 0010 [0000 0001]~0000 0010 [0000 0008] => 201~208

6. ???????, ?????????IPv6??: 1234:5678:9012:201::~1234:5678:9012:208::

7. ??subnet id??????, ??network prefix(/64): 1234:5678:9012:201::/64~1234:5678:9012:208::/64

??, ??????????8?IPv6???(1234:5678:9012:201::/64~1234:5678:9012:208::/64).

Padavan??????IPv6????, ???????????IPv6??, ???IPv6??????:

??DHCPv6??????IP????: SLAAC?Stateful?DHCPv6??

SLAAC?Stateful DHCPv6?????header?????flag????(M, O flags).

DHCPv6????????????, ?????IP????, ???????SLAAC???????IPv6???WAN?????Native Static, ?????IP????LAN???????, ?????????????? (IPv6??Subnet mask??, ???prefix??).
??????PPPoE?????????Tunnel??IPv6??.
??IPv6?H/W offloading?????bug??, ????????, ????????CPU(MIPS 74Kc)?handle.

[UPDATED, 201402141253] How to setup IPv6-over-IPv4 tunnel with Tunnel Broker?

???????IP?????, ?????PPPoE???, ????IPv6???Tunnel Broker??????IPv4 tunnel??IPv6?????IPv6??, ?????????????????(Dual-stack).

?????client????, ????????Tunnel Broker???????tunnel; ????????????IPv6????????tunnel, ??????????????IPv6????. Padavan??IPv6?? ?IPv6-over-IPv4 tunnel??Tunnel Broker?IPv6????:

???Padavan??IPv6 with Tunnel Broker??, ?????Tunnel Broker?????????????, ????HE??tunnel??:

??????????, ??????5?tunnel. ????N56U??, ???????.

????tunnel??, ???????????, ???????, ???, ??, IPv6 DNS?????LAN????:

?Routed IPv6 Prefixes??????????????: ????(autoconfig, Routed /64)?????(Routed /48). ??Padavan??????. ??????????????????IPv6? ?, ??LAN?????. ???/48???????subnet id???, ??routing prefix, ?network prefix??routing prefix??subnet id(64 - 48 = 16).
?????2001:470:cdcf::/48, network prefix?64, ??subnet id(16)?, ????subnet id???????????????.
1. 2001:470:cdcf:[0000]::/48, subnet id????, ?????????, ???????: 2001:470:cdcf:[0001]::/48
2. ?????subnet id??????, ??????(/48)???/64: 2001:470:cdcf:[0001]::/64
3. 2001:470:cdcf:[0001]::/64???????IPv6???, ??????Padavan?IPv6???.

?????????Padavan?IPv6???, ??????Tunnel Broker???????WAN????:

??????MTU???, ???HE??????????(Default: 1480):

???????LAN?IPv6????, ???LAN?????:

?????LAN???????, ??2001:470:cdcf:1::/64??, LAN IPv6 Address?????Unicast??(2001:470:cdcf:1::1), ????LAN???Gateway, ?????LAN??? ??(Prefix, 64), ???????????. ??Network Map?????????:

??????????????Padavan???IPv6??????, ????FGT80C????IPv6??????:

?client???tracert????:

????????, ?????Padavan???IPv6????, ?????????(ICMP).

SPI Firewall (Stateful Packet Inspection Firewall)

Padavan?????SPI Firewall??, ??Firewall???????????, ??Filter(Port, MAC, URL), DoS, SYN Flood Prevention?.
SPI??Stateful Packet Inspection, ???traffic??(Inbound/Outbound)???(Firewall)??????????, ?????????????,??SRC, DST, SRC_Port, DST_Port, Protocol(TCP/UDP/ICMP, etc)?..., ????????????(Packet Inspection), SPI?????????????????????.

SPI?????????????(??packet), ????????????????(???)???????????. ???????????????????(Packet Inspection)????????????SPI, ?????????
???(pattern-matching, ex: White-list), ?????(Content Inspection; basic or complete content)?, ?????????????????????.

??????????????????????, ???????:

?????(Inspection)???????????, ???????????????????????L3/L4 NPU????.., CPU??????????????ASIC???????, ????????????????????.

?Padavan???????Firewall Inspection, ???????SPI??, ?????????. Padavan??SPI Firewall??????iptables????????, ???????(Allow)???(Block):

DoS Attacks Protection?????wiki:
http://zh.wikipedia.org/wiki/%E9%98%BB%E6%96%AD%E6%9C%8D%E5%8A%A1%E6%94%BB%E5%87%BB
SYN Flood Attack(DoS, ??????)?????wiki:
http://zh.wikipedia.org/wiki/SYN_flood
?Netfilter?????VPN??????ALG????????, ?????NAT Loopback. ??????: Maximum Connections; ?????PPE?????sessions??, ?????, ????
??.

??URL, MAC, LAN to WAN filter???????????; MAC Filter????????L2?????(MAC????L3??????).
Note(s):
1. ??iptables???, ????linux command??????: ??Administration?Console?SSH?CLI??, ???GUI?Console:
iptables -L -v -n