ZyXEL

Firmware Release Note

ZyWALL 70

Release 4.01(WM.3)

Date:	**Dec. 04, 2006**
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ZyXEL ZyWALL 70 Standard Version
Release 4.01(WM.3)
Release Note

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Supported Platforms:

ZyXEL ZyWALL 70

Versions:

ZyNOS Version: V4.01(WM.3) | 12/04/2006
BootBase : V1.10 | 07/31/2006

Notes:

1. Restore to Factory Defaults Setting Requirement: No.
2. The setting of ignore triangle route is on in default ROM FILE. Triangle route network topology has potential security crisis. If you are not clear about it, please refer to Appendix for the triangle route issue.
3. When firewall turns from "off" to "on", the firewall initialization procedure will disconnect all connections running through the ZyWALL.
4. SUA/NAT address loopback feature was enabled on ZyWALL by default, however, if users do not need it, a C/I command "ip nat loopback off" could turn it off.
5. In WLAN configuration, a switch for enable / disable WLAN is added. The default value is “disable” since WLAN without any security setting is vulnerable. Please configure MAC filter, WEP and 802.1X when you enable WLAN feature.
6. When UPnP is on, and then reboot the device, Windows XP will not detect UPnP and refresh “My Network Places→Local Network”. Plug in network wire again can solve this problem.
7. For ZW5/35, the default port roles are LAN. For ZW70, the default port roles are DMZ.
8. In bridge mode, If LAN side DHCP clients want to get DHCP address from WAN side DHCP server, you need to turn on the firewall rule for BOOT_CLIENT service type in WAN→LAN direction.
9. Under Bridge Mode, all LAN ports will behave as a hub, and all DMZ ports will also behave as another hub.
10. For users using the default ROMFILE in former release, please remove “ip nat session 1300” from autoexec.net by CI command “sys edit autoexec.net”. (Upgrade from 3.62)
11. In previous 3.64 firmware, the VID value of DPD is not correct. VID change will

cause current version doesn't work with the wrong value. Please be sure to connect with devices which has updated VID, or the DPD may not work correctly.

12. In SMT menu 24.1, "WCRD" only represents the WLAN card status when you insert WLAN card into the ZyWALL. If you insert TRUBO card, you will see " WCRD" is always down.
13. If you do not want a mail to be scanned by Anti-Spam feature, you can add the mail into whitelist in eWC->Anti-Spam->Lists
14. If you want traffic redirect feature to work, you should turn on WAN ping check by "sys rn pingcheck 1". (For ZW5 only)
15. The first (first two) entry for static route is reserved for creating ZW5 (ZW35/70) WAN default route and is READ-ONLY.
16. If you had activated content filtering service but the registration service state is "Inactive"after upgrading to 4.00, please click "Service License Refresh" in "eWC->REGISTRATION->Registration" or wait until device synchronize with the myzyxel.com.
17. WAN1 and WAN2 must be different subnet.
18. In Firewall/IDP/AV/AS/BM security rule, Dial backup traffic belongs to WAN interface. (In ZW35/70, the Dial backup traffic belongs to the higher priority WAN interface, for example, if WAN1 priority is higher than WAN2, Dial backup traffic will manage by WAN1 in Firewall/IDP/AV/AS/BM security rule.)

Known Issues:

System Limitation

[Bandwidth Management]

1. Bandwidth Management doesn't work on wireless LAN.

[Content Filter]

1. Can't block ActiveX in some case. (Sometime the ActiveX block fails. This is because the ActiveX is cached in C:\WINNT\Downloaded Program Files\ If you want to test the ActiveX block functionality. Please clear the cache in windows.)

[Wireless]

1. The fragmentation threshold size support between 800~2432.

[MISC]

1. At SMT24.1, the collisions for WAN, LAN and DMZ port are not really counted.
2. Symptom: LAN host can ping Internet while LAN host change cable from LAN port to DMZ port.
   Condition:
   (1) Host connects to LAN port and gets DHCP address from router.
   (2) Unplug LAN host cable and plug it into DMZ port.
   (3) The host can still ping Internet using LAN DHCP address.
   (4) The scenario will continue about 30secs.
3. When device is writing flash, all the interrupt/service will be stopped. (Firmware upload and signature update for full version will take tens of seconds)

4. Because of the memory shortage (ZW5/P1), device have to restart when customer need to upgrade firmware sometimes.

Issues

[ALG]

1. H323&SIP does not support the server in LAN topology.
2. Currently, we do not support NAT loopback on SIP registration or proxy server, which means if your SIP client is located on LAN, your registration server address cannot use ZyWALL WAN IP to do loopback to SIP server which located on LAN.
   (1) NAT loopback for SIP server on LAN.
   (2) NAT one to one address mapping for SIP server on LAN.
   (Indeed, this should be described as the NATed WAN IP of SIP client and SIP server should be the same)
   (3) Use default server of NAT port forwarding table for SIP server on LAN.
   (4) Client A(WAN) call Client B(LAN) using LAN's IP, and the reversed way. That is you should call phone number directly to each other without the IP address.
   There issue will be improved for future plan.

[Anti-Spam]

1. Mail cannot pass through 2 devices with Anti-Spam enabled.
2. Customer need to turn off the redundant check for AS and AV for gathering more CPU resource or CPU will always reach 100%. When CPU reaches 100%, the AS/CF query will be timeout sometimes because there is no resource for it.
3. The maximum length of the mail subject is 2037 right now. The mail subject you input is 2037, but you need to add the length of (A)"subject: " and (B)"\r\n", (A)+(B) is 11 bytes. They equal to 2048.

[Bandwidth Management]

1. Bandwidth management H.323 service does not support Netmeeting H.323 application.
2. If H323/SIP ALG doesn't work, the Bandwidth management cannot manage the traffic too.

[Bridge Mode]

1. When device boots in Bridge Mode, some CI command error messages will be displayed on console. This is because some predefined CI commands in autoexec.net is forbidden to execute in Bridge Mode.
2. In the following topology, Firewall VPN to LAN ping can't be permitted.
   PC1----------DUT1--------NAT Router------PQA lab-----DUT2------PC2
   IP: 192.168.1.33 IP: 192.168.1.2 LAN: 192.168.1.1 WAN: 172.25.21.24 IP: 192.168.2.33
   GW: 192.168.1.2 WAN: 172.25.21.200 LAN: 192.168.2.1 GW: 192.168.2.1
   (1) DUT1 is on bridge mode, DUT2 is on router mode, build VPN tunnel between them.
   (2) On DUT1 enable Firewall, and set Drop for VPN to LAN, then add a firewall rule of VPN to LAN:
   Source address = 192.168.2.33

Destination Address = 192.168.1.33
Selected Service = Any (ICMP)
Action for matched Packets = Permit.

(3) Can't ping 192.168.1.33 from 192.168.2.33 and you can find "Unsupported/out-of-order ICMP: ICMP (Echo Reply)" log on log page.

Note:

(1) Here, PC1's GW is DUT1's LAN IP. With the ICMP reply packet, the destination IP is 192.168.2.33. In PC1, the packet will match the default GW (192.168.1.2) and change the destination MAC as DUT's LAN MAC. DUT receive the packet and the destination MAC is DUT's LAN, DUT thinks this packet is send to itself and the ICMP out of order happens.This is because there is no ICMP request packet for the device itself but an ICMP reply packet for DUT.
(ICMP out of order scenario, not ICMP request but with ICMP reply)

(2) If set the default GW in PC1 as 192.168.1.1, the packet's destination MAC is NAT-Device's LAN (192.168.1.1), not DUT's IP. DUT knows the packet is not for itself and ready pass through it. But the packet match the VPN rule and it will encrypted by DUT.

[Content Filter]

1. CF Denied Access Message can run script.
2. Due to add OutpostPro firewall support, some block logs can't be shown on log page when you use customization block function such as "Forbidden Web Site List" and "Keyword Blocking".
3. And the categories function can also has some issue because of the OutpostPro firewall bug fix. When user want to block some categories, such as"Search Engines/Portals", external DB search work normally the first time. But after refreshing the page or open the website again in another Browser window, only "Please contact your network administrator!!" can be showed, without the link to bluecoat.

[Firewall]

1. Some limitations on Firewall CLI configuration, (1) User can not delete specific address or custom port entry from a rule. (2) CLI doesn't support Modify and Move for rules implemented in eWC. (3) eWC can not display firewall rule field correctly if rule is added by CI command and its type is port/address range.

[UPnP]

1. Sometimes on screen the "Local Area Connection" icon for UPnP disappears. The icon shows again when restarting PC.
2. When you use MSN messenger, sometimes you fail to open special applications, such as whiteboard, file transfer and video etc. You have to wait more than 3 minutes and retry these applications.

[VPN]

1. SNMP tools get ZYWALL VPN MIB data, the index of received data are wrong if rules are larger than 1.

2. VPN rule swap does not support NAT Traversal.

[MISC]
1. The DMZ TxPkts counter increment at about 1 pkt/min even without any Ethernet cables ever connected.
2. In eWC->Statistics, Tx data for Dial Backup is not correct.
3. ZyWALL does not support WAN 1/WAN 2 on the same sub-net. (For Multiple WAN products)

Features:

Modifications in V 4.01(WM.3) | 12/04/2006
Modify for formal release.

Modifications in V 4.01(WM.3)b1 | 11/24/2006
1. [ENHANCEMENT] SPR ID: 061109533
   Enlarge mail header size from 1024 to 2048.

2. [BUG FIX] SPR ID: 060711576
   Symptom: Content filter is fail when user installs Outpost Firewall.
   Condition:
   (1) Install OutpostPro Firewall software.
   (2) Set "disable all web traffic except for trusted web sites" and enable content filter.
   (3) Enable Outpost Firewall, user can surf the website as usual.
   (4) If we disable Outpost Firewall, web surfing will be blocked besides trusted web sites.

3. [BUG FIX] SPR ID: 060810690
   Symptom: Redirect URL have not limit special character, it will caused DUT crash.
   Condition:
   (1) In eWC>CF Denied Access Message or Redirect URL, input %s%s%s%s and apply, DUT will be crash.

4. [BUG FIX] SPR ID: 060927777
   Symptom: The "Up Time" shown on the Port Statistics and Home page is quite different when the ZyWALL uptime is more than 100 hours.
   Condition:
   (1) Let ZyWALL WAN1 uptime be more than 300 hours.
   (2) Go to eWC>HOME page, the "Up Time" is "4:00:00".
   (3) Click "Port Statistics" button, the WAN1 "Up time" of pop-up window is "300.00.00".

5. [BUG FIX] SPR ID: 060420608
   Symptom: Two SIP clients cannot talk to each other when both of them are in LAN.
   Condition:
   Topology:

SIP Client_A -------(LAN) ZyWALL (WAN)----------SIP Server
SIP Clinet_B ------|
(1) Two SIP clients register on SIP server which is in the WAN.
(2) Create a call between client A and client B, they cannot hear each other.

6. [BUG FIX] SPR ID: 060419442, 060512720, 060601086
   Symptom: The VoIP client cannot hear the voice when SIP server is set behind the LAN.
   Condition:
   Topology:
   P2002A------------+-(LAN)ZW70(WAN)---------P2002B
   SIP Server--------|

   (1) Create a port forwarding rule on ZW70 to let SIP traffic of P2002B can be forwarded to SIP server.
   (2) Dial a phone call from P2002A to P2002B, P2002B can hear the voice of P2002A but P2002A cannot hear the P2002B.

7. [ENHANCEMENT]
   Symptom: SIP alg enhancement. Additional SIP ALG codes to supports SIP server on LAN or WAN
   Condition: SIP function has some issues to work correctly.
   Topology:
   (1) Client_A------(L)ZW_1(W)-----SIP Server-----(W)ZW_2(L)-----Client_B
   (2) Client_A----SIP Server----(L)ZW_1(W)-------(W)ZW_2(L)-----Client_B
   (3) SIP Server----(L)ZW_1(W)----Client_A----(W)ZW_2(L)-----Client_B
   (4) SIP Server----(L)ZW_1(W)-------(W)ZW_2(L)+-----Client_A
   +------Client_B

8. [ENHANCEMENT] SPR ID: 061102140
   Add PPTP CHAP v2 support.

9. [BUG FIX]
   AV side effect fix.

10. [BUG FIX] SPR ID: 061024810
    Symptom: Multiple PPPoE cannot use the same PPPoE session ID.
    Condition:
    Topology: ZyWALL [WAN1] --- PPPoE
    [WAN2] --- PPPoE
    (1) Set ZyWALL's WAN1 & WAN2 encapsulations are PPPoE, and connect to different PPPoE servers.
    (2) The WAN1 & WAN2 will get same PPPoE session ID sometimes, this will confuse PPPoE packet flow.

11. [BUG FIX] SPR ID: 060928848, 060928863

Symptom: Mail gets stuck when using VPN + PPPoE
Condition:
Topology:

DeviceA(PPPoE) --- DeviceB --- PC(192.168.2.33)
|
Mail Server(192.168.70.103)

(1) Device A behaves as head-quater, device B behaves as branch-office.
(2) DeviceB makes VPN tunnel to DeviceA, all traffic from PC goes through VPN tunnel to Device A then go out from DeviceA's WAN(PPPoE).
(3) DeviceA enables AS for WAN->VPN direction.
(4) PC receives mail from mail server, mail gets stuck.

12. [ENHANCEMENT] SPR ID: 060331694
    Add quick timeout mechanism for UDP sessions. This mechanism can for you to search more games in internet by some game platform. If no this mechanism the number of the game you can search is about NAT session number limited.

13. [BUG FIX] SPR ID: 061101036
    Symptom: ZyWALL does not get new rating server list after all rating server has been removed.
    Condition:
    Topology: PC---------(L)ZW5(W)----------Server
    (1) PC sends mails by Mail-Group, and receives mail by outlook.
    (2) Configure Mail-Group to max connection 64, and add attachments to 1M~2M.
    (3) Keep sending and receiving mail until there are all rating servers in the server list has been removed.
    (4) ZyWALL will never update a new rating server list after the all rating server has been removed. The ZyWALL will always query fail.

14. [BUG FIX] SPR ID: 061024840
    Symptom: SMTP authentication fails on elias.hp-interex.ch (MX V5.4 AnGc).
    Condition:
    (1) Go to eWC>LOGS>Log Settings.
    (2) Set Mail Server of E-mail Log Settings to elias.hp-interex.ch, enable SMTP Authentication and set related SMTP settings.
    (3) The device sends mail will fail on SMTP authentication.

15. [BUG FIX] SPR ID: 060822272
    Symptom: ZyWALL will not mail its LOG if the IP specified on the One-To-One Public IP.
    Condition:
    Topology:

    Mail Server----------(DMZ)ZyWALL(WAN)
    192.168.2.33 192.168.2.1 10.0.0.1
    10.0.0.2

    (1) Restore to default romfile.

(2) Set NAT type to full feature.
(3) Build a one-to-one rule for mail server in DMZ.
Local IP Global IP
192.168.2.33 <-> 10.0.0.2
(4) In the LOG setting, set mail server IP to 10.0.0.2.
(5) Then, disable the firewall and press the "Email Log Now" button to send mail.
(6) You will see the log "SMTP fail (Cannot connect to SMTP server 10.0.0.2)".

16. [BUG FIX]
Symptom: ZyWALL cannot trigger dial backup.
Condition:
Topology:
PC--(LAN)ZyWALL(dial backup)--Internet
(1) Restore default romfile.
(2) Set up dial backup.
(3) PC sets ZyWALL to be DNS proxy server.
(4) PC starts to ping a domain name, but ZyWALL do not trigger dial backup.

17. [BUG FIX] SPR ID: 061005220
Symptom: Device crashes because of mbuf double free in Anti-Spam.
Condition:
(1) System crashes sometimes on customer site.

18. [ENHANCEMENT]
Vulnerability bug: It depends on an error in verifying the PKCS-1 padding of the signed hash and we update the patch file from safeNet.

Modifications in V 4.01(WM.2) | 10/25/2006
Modify for formal release.

Modifications in V 4.01(WM.2)b1 | 10/18/2006

19. [ENHANCEMENT] SPR ID : 060815905,050414612
We change the ZyWALL break mechanism for the infected file. The ZyWALL just breaks the first infected file packet and stop track the file session in the previous mechanism. The old one has better performance, but there is a risk that it couldn't break the file with more than one virus. Now ZyWALL breaks the first infected file packet and the following file packet as well. It is safer but downs performance for handling infected files. We also fix the line-assembly bug for FTP and HTTP in this enhancement.

20. [ENHANCEMENT] SPR ID: 060809590, 060809591, 060809592.
The Anti-Spam will modify the server response string ""250[-]PIPELINING" to "250[-]PIPE******". Because ZyWALL does not the SMTP PIPELINING function.

21. [ENHANCEMENT] SPR ID: 060830643

Add an option to enable or disable the "Dynamic ACL" log in ZyWALL.
The check box is in:
(1) "eWC->LOGS->Log Settings->Dynamic ACL".
(2) SMT 24.8.
I. "sys logs load".
II. "sys logs switch dynacllog".
III. "sys logs save".
IV. "sys logs switch display".
Note: "2006-08-09 00:42:30 Firewall matches a dynamic ACL rule of an ALG session: TCP 192.168.111.2:50999 66.59.243.66:26397 ACCESS PERMITTED"
Engineer Note: The value in default ROM file is "on" in 4.01.

22. [ENHANCEMENT]
Wording changed. Out of memory when F/W upload.
(1) FTP
Was: file size too large.
Is: file size too large. Please reboot device, and try again.
(2) HTTP/HTTPS
Was: disk full!
Is: disk full! Please reboot device, and try again.

23. [ENHANCEMENT] SPR ID: 060522258
If users let "Redirect URL" in Content Filter be blank, the blocking page will be displayed on the forbidden object only.

24. [ENHANCEMENT] SPR ID: 060925662
In eWC>MAINTENANCE>Time and Date, add "Madrid" capital in "GMT+1" time zone.

25. [FEATURE CHANGE] SPR ID: 060705182, 060705183
WAS: Set "My IP" as WAN2 IP Address in VPN IKE rule, the IKE and IPSec traffic still go through WAN1 because WAN1 has higher metric than WAN2.
IS: The IKE and IPSec packets will be sent out according to "My IP" field in VPN IKE rule.
Engineer note: The bug fix only applies to multiple WAN products.

26. [BUG FIX] SPR ID: 060809598
Symptom: PC can not access the web server (www.fapa.com.pl) via our ZyWALL.
Condition:
PC---(LAN)ZyWALL(WAN)---internet
(1) Get a ZyWALL with default romfile.
(2) Let PC try to access www.fapa.com.pl.
(3) PC can not access the web server.
(4) It is OK without ZyWALL.
Special case packet flow:
Client(PC) Server(www.fapa.com.pl)

SYN ->
<- ACK = 0
<- SYN, ACK = 1
ACK = 1 ->
HTTP Get ->

27. [BUG FIX] SPR ID: 060711547
Symptom: "Don’t block Java/ActiveX/Cookies/Web proxy to trust Web site" function in content filter cannot work.
Condition:
(1) In eWC->SECURITY->CONTENT FILTER->General page, enable "Content filter" and
block "Java Applet/ActiveX/Cookies/Web Proxy".
(2) In eWC->SECURITY->CONTENT FILTER->Customization page, enable "Web site customization" and
"Don't block Java/ActiveX/Cookies/Web proxy to trusted Web sites".
Add "web.haccpsoft.it" to "Trusted Web Sites".
(3) A PC in ZYWALL's LAN side browses "http://web.haccpsoft.it:8080" website.
(4) Login in and click the date, the popup window should show a calendar instead of another login page.
(5) It is blocked by content filter.

28. [BUG FIX] SPR ID: 060607461
Symptom: After run 5 hours BT, no traffic can be forwarded by ZyWALL.
Condition:
(1) Restore to default romfile.
(2) In NAT port forwarding page, add a rule with port range from 20000 to 40000.
(3) After running about 5 hours BT, no traffic can pass through ZyWALL.

29. [BUG FIX] SPR ID: 060925635, 060727788.
Symptom: System crashes.
Condition:
(1) Enable Firewall, Content Filter, IDP, Anti-Virus and Anti-Spam
Functions, and turn on all related logs.
(2) System crashes sometimes.

30. [BUG FIX] SPR ID: 060831744
Symptom: PC cannot ping WLAN interface IP.
Condition:
Topology:
PC1(10.0.0.1)----(10.0.0.2)(WAN)ZyWALL(WLAN)(192.168.7.1)

(1) Restore default ROM file.
(2) Disable firewall feature.
(3) In SMT 24.8, type "ip nat routing 2 1".
(4) Set WLAN interface IP as "192.168.7.1".

(5) Set NAT to "Full Feature" mode.
(6) PC1 generates a PING packet to "192.168.7.1".
(7) There is no response from "192.168.7.1" and the centralized log will show "Packet without a NAT table entry blocked: ICMP(Echo)"

31. [BUG FIX] SPR ID: 060703050
    Symptom: Local PC cannot find Remote Host by NetBIOS via VPN tunnel.
    Condition:
    PC1----(WLAN)DUT-----(VPN)-----ZYWALL(LAN)----PC2
    (1) The configured romfile please refer to SPR.
    (2) PC1 cannot see PC2 by NetBIOS via VPN tunnel.

    Note: This problem only happens when policy index is not equal to IKE index.
    Engineer Note: This problem happens in 4.00 and 4.01.

32. [BUG FIX] SPR:060925632
    The firmware of 4.01's self-assigned-certificate can't be used in Mozilla-firefox

33. [BUG FIX] SPR ID: 060908449
    Symptom: The ZyWALL assigns a used IP to a DHCP client.
    Condition:
    Topology ZyWALL(LAN)------PC1,PC2
    (1) Let the PC1 get a DHCP IP(192.168.1.33).
    (2) Pull out the cable of PC1 and set PC2 to use a static IP 192.168.1.33.
    (3) Plug back the PC1, PC1 starts to get a DHCP IP, but it still gets 192.168.1.33, although the ZyWALL has asked if someone is using this IP and gets a response.
    IDP module.

Modifications in V 4.01(WM.1) | 09/07/2006
Modify for formal release.

Modifications in V4.01(WM.1)b1 | 08/31/2006

1. [ENHANCEMENT]
   Support 60 categories in content filtering.
   New categories: ""Hacking", Phishing", "Spyware/Malware Sources", "Spyware Effects/Privacy Concerns", "Open Image/Media Search", "Social Networking", "Online Storage", "Remote Access Tools", "Peer-to-Peer", "Streaming Media/MP3s" and "Proxy Avoidance".

2. [ENHANCEMENT]
   Add second time schedule setting in content filtering.

3. [ENHANCEMENT]
   Enhance the CI command "ip ifconfig".

(1) Add a new argument "mss" to configure the MSS value.
(2) After finishing the configuration, the interface information will be displayed.
Usage: ip ifconfig [iface] [ipaddr</mask bits>] <broadcast [addr]> <mtu [value]>
<mss [value]> <dynamic> <showoff>
Ex: ip ifconfig enif1 192.168.70.222/24 broadcast 192.168.70.250 mtu 1500 mss 1460

4. [ENHANCEMENT]
   Add CI command "av zipUnsupport". Processing ZIP file will destroy encrypted file if flag is on, otherwise pass it.

5. [ENHANCEMENT]
   Add a CI command to turn on or off the LDAP packet parsing in NAT module.
   Usage: "ip nat service ldap [on|off]"

6. [ENHANCEMENT]
   Add ALG type on policy route.

7. [BUG FIX]
   Symptom: ZyWALL WAN fixed 100/full negotiation fail against cisco 3550/2900.
   Condition:
   (1) Configure cisco 3550/2900 port to fixed 100/full.
   (2) Configure ZyWALL WAN to fixed 100/full.
   (3) ZyWALL WAN can not sync up; remain down.

8. [BUG FIX]
   Symptom: The DHCP table shows incorrect information.
   Condition:
   (1) Set the ZyWALL's DHCP IP Pool Starting Address is 192.168.102.146.
   (2) Add a DHCP static IP 192.168.102.22 for a PC on the LAN.
   (3) Add another PC on the LAN but this PC doesn't have a corresponding DHCP static IP rule, and then it gets 192.168.102.146 from the ZyWALL.
   (4) Go to eWC>Home>DHCP Table, the ZyWALL doesn't show 192.168.102.146, but show 192.168.103.157.

9. [BUG FIX]
   Symptom: The packet will be dropped if the device does not have the ARP entry of the receiver of this packet.
   Condition:
   (1) Clear ARP table by "CI>ip arp flush".
   (2) Send a ping to 168.95.1.1, but the PC will not get a response in the first ICMP Echo Request.
   (3) After the first ping, the rest of pings can get responses.

10. [BUG FIX]
    Symptom: PPTP can not pass through ZyWALL from time to time.
    Condition:

Topology:
PPTP server --LAN ZYWALL WAN 1--PPPoE—internet WAN 2--PPPoE--internet
(1) Choose Active/Active mode in WAN setting.
(2) Build PPPoE connection both on WAN1 and WAN2
(3) Set Port forwarding 1723 to LAN PPTP server both on WAN1 and WAN2
(4) PPTP client builds connection, and disconnect it through WAN1; then PPTP client can not builds PPTP connection through WAN2.

11. [BUG FIX]
    Symptom: ZyWALL serial cannot connect one CDMA terminal RWT FCT CDMA.24.
    Condition:
    Russia raised this issue that our ZyWALL cannot connect one kind of CDMA terminal RWT FCT CDMA.24, but it is okay when this Terminal connect to P662 and D-Link route. After check, they found when short-circuit the CTR and DTS can make it work (ZyWALL connect to the CDMA)

12. [BUG FIX]
    Symptom: Device crashes because of memory double free in Content Filter.
    Condition:
    (1) Enable Content Filter and Web site customization.
    (2) After a while, the device will crash sometimes.

13. [BUG FIX]
    Symptom: Device crashes when enable CNM agent.
    Condition:
    (1) Enable AV/IDP/CNM.
    (2) Disable AS.
    (3) Block LAN to LAN packet from Firewall.
    (4) Make LAN to LAN heavy traffic.

14. [BUG FIX]
    Symptom: Trace route fails to get response from our device.
    Condition:
    Topology:
    PC-----(LAN)ZW70(WAN)
    (1) On PC, try trace route a host(www.yahoo.com).
    (2) Trace route cannot get response from our device.

15. [BUG FIX]
    Symptom: Device crashes (software watchdog wakes up by NAT).
    Condition:
    (1) Restore default romfile.
    (2) After a while, the device will crash sometimes.

16. [BUG FIX]

Symptom: Backuping the configuration of AntiVirus is too slow.
Condition:
(1) In eWC->SECURITY->ANTI-VIRUS->Backup & Restore, click "Backup" button to backup the AntiVirus configuration.
(2) Sometimes we need to wait for the popup window for a prolonged period of time.

Modifications in V4.01(WM.0) | 08/08/2006
Modify for formal release.

Modifications in V4.01(WM.0)b5 | 07/31/2006
1. [BUG FIX]
   Symptom: Device crashes when upload F/W.
   Condition:
   Topology : PC_A == ZyWALL == P1 == PC_B
   (1) Build tunnel between PC_A and PC_B and sent TFGEN traffic(1M) between PC_A and PC_B.
   (2) Use eWC to upload F/W from ZyWALL's WAN and device crashes.
2. [BUG FIX]
   Symptom: PC in LAN side sometimes can get IP address from DHCP server in WAN side after downgrading from v4.01 with bootbase v1.09 to previous firmware version.
   Condition:
   (1) With bootbase v1.09,downgrading firmware from v4.01(WM.0)b4 to v3.62(WM.7)c0 then factory reset.
   (2) PC in LAN side sometimes can get IP address from DHCP server in WAN side.

Modifications in V4.01(WM.0)b4 | 07/11/2006
1. [BUG FIX]
   Symptom: Anti-Spam cannot work in NAT loopback situation.
   Condition:
   (1) Put PC1 and PC2 on LAN side of ZyWALL.
   (2) ZyWALL enables Anti-Spam and disables External Database.
   (3) PC2 installs the Merak Mail Server.
   (4) PC1 uses the outlook express to send mail to itself by the mail server of PC2.
   (5) When the PC1 is sending mails will cause mail stuck until timeout.
2. [BUG FIX]
   Symptom: Upload firmware by eWC will cause CPU load 100%.
   Condition:
   (1) Use GUI to upload firmware will cause CPU 100%.
   (2) It will be successful, but need more than 1 minute.
3. [BUG FIX]
   Symptom: There should be a progress page when upload F/W by eWC.
   Condition:
   (1) Goto eWC>Maintenance to upload F/W.
   (2) ZyWALL should show a progress page, but it is not.

(3) ZyWALL should display login page after reboot, but it is not.

Modifications in V 4.01(WM.0)b3 | 06/25/2006

4. [FEATURE CHANGE]
   Change log format of Spam mail.
   Was: Mail score is higher than threshold - Spam Score:<Score><Title>!<Direction>
   Is: Mail score is higher or equal than threshold - Spam
   Score:<Score><Title>!<Direction>

5. [FEATURE CHANGE]
   Change some wordings which contain "fail back" in GUI and log.
   Was: "Fail back ****".
   Is: "Fall back ****".

6. [FEATURE CHANGE]
   In eWC>BW MGMT>Class Setup page, change wording:
   WAS: "filter, to filter, (filter number)", "Filter class Search Order"
   IS: "class, to class, (class number)", "Enabled classes Search Order"

7. [FEATURE CHANGE]
   WAS: In eWC>HOME page, the memory bar will become red when the percentage of memory usage is over 90%.
   IS: In eWC>HOME page, the memory bar will become red when the percentage of memory usage is over 95%.

8. [ENHANCEMENT]
   Enlarge Anti-Spam session number from 30 to 200

9. [ENHANCEMENT]
   Microsoft cryptographic library supports only odd-sized keys for generating the RSA-modulus. Let the key number of creator primes be odd-size.
   Note: Without this enhancement, importing self-signed certificate with PKCS#12 format into MS IE sometimes will fail.

10. [ENHANCEMENT]
    (3) In eWC>HOME page, show MAC address in Network Status Table. [060606360]
    (4) Change ZyWALL eWC refresh pages to consistent with HOME page. [060606359]

11. [BUG FIX]
    Symptom: Device will crash in bridge mode AV testing.
    Condition: PC(mail client)----(LAN)DUT(WAN)----Mail Server
    (5) In bridge mode, enable AV and activate SMTP from LAN to WAN direction.
    (6) Disable Outlook SMTP authentication in PC.

(7) PC on LAN and sent out Microsoft Outlook testing mail.
(8) Device will crash immediately.

12. [BUG FIX]
Symptom: ZyWALL WLAN & DMZ ports cannot work in dynamic VLAN ports.
Condition:
(1) Restore default romfile.
(2) Set Port Roles as 1>LAN, 2>LAN, 3>DMZ, 4>WLAN.
(3) Set DMZ IP as 10.10.2.1/24, DHCP as None.
(4) Set Wireless Card bridge to WLAN.
(5) Unplug wireless card and reboot device.
(6) PC connects to DMZ port, IP is 10.10.2.100/24 and gateway is 10.10.2.1, and the PC ping 10.10.2.1 will fail.

13. [BUG FIX]
Symptom: The eWC>Firewall>Default Rule page will popup JavaScript error in router mode.
Condition:
(1) Go to eWC>FIREWALL>Default Rule page.
(2) Click Reset button, ZyWALL pop-ups a JavaScript error.

14. [BUG FIX]
Symptom: Unknown crash.
Condition:
(1) Restore default romfile.
(2) Switch device to Active/Active mode, and confirm WAN1 and WAN2 can work fine.
(3) Set WAN2 ping check point to User-defined.
(4) After a while, the device sometimes will crash.

15. [BUG FIX]
Symptom: IDP Total Sessions Scanned is wrong.
Condition:
(1) Enable AV, SMTP service and enable all directions.
(2) Enable IDP, but disable all traffic direction.
(3) Attacker sends the mail containing virus to victim via ZyWALL to check if Anti-Virus can detect viruses.
(4) In eWC>REPORTS>THREAT REPORTS, Total Sessions Scanned of IDP will count number. But it should not.

16. [BUG FIX]
Symptom: ZyWALL crashes if you try to backup Configuration AV or IDP.
Condition:
(1) Go to eWC>Security>ANTI-VIRUS(or IDP)>Backup & Restore page.
(2) Click Backup or Restore button.
(3) System will crash sometimes.

17. [BUG FIX]
Symptom: The ZyWALL should use user configured time server to do daily time adjustment.
Condition:
(1) Reboot the ZyWALL, set 'abc.abc.edu' as user defined 'Time Server Address'.
(2) The time synchronization will fail at start-up and use the default built-in time server list.
(3) The ZyWALL will always use one of built-in time servers to adjust time daily, but the ZyWALL should use user configured time server to do daily time adjustment.

18. [BUG FIX]
Symptom: The IDP should work when the traffic is "from VPN to LAN".
Condition: Topology
PCB-------ZYWALL----tunnel-----ZYWALL--------PCA
(1) Build a tunnel between PCA and PCB.
(2) Enable IDP and check the direction of "From VPN to LAN" and download a file "eicar.com" by HTTP.
(3) The IDP doesn't detect the virus.
(4) But IDP works when you choose 'From LAN to VPN'.

19. [BUG FIX]
Symptom: The device will crash when using VPN manual mode.
Condition: PC1--ZWA--ZWB--PC2
(1) Add a VPN manual mode rule in both ZWA and ZWB and make sure PC1 can ping PC2 through the VPN tunnel.
(2) PC1 ping PC2 continuously.
(3) Unplug the physical link in WAN, the VPN traffic will pass through (ZWA).
(4) ZWA will crash.

20. [BUG FIX]
Symptom: The incorrect data shows on the eWC>THREAT REPORTS>AV.
Condition:
(1) Enable AV and use Edonkey behind the ZyWALL.
(2) The incorrect data shows on the eWC>THREAT REPORTS>AV.
The detect virus name shows 'Unknown Signature' and the Occurrence is very big, even is a negative number.

21. [BUG FIX]
Symptom: Sometimes we cannot login ZyWALL by HTTP or HTTPS after enabling the password hash function.
Condition:
(1) Enable password hash function in SMT 24.8, "sys pwdHash on".
(2) After the convert of password, we can never login by HTTP or HTTPS.

Modifications in V 4.01(WM.0)b2 | 05/22/2006

1. [FEATURE CHANGE]

The multicast AH or ESP packet will not pass to the VPN module in ZyWALL.

2. [FEATURE CHANGE]

Change wording of one category name in external content filtering.

Was: Streaming Media/MP3

Is: Streaming Media/MP3/P2P

3. [FEATURE CHANGE]

WAS: In SMT 24.8, "ipsec adjTcpMss auto" will let the "IPSec adjust TCP MSS" switch to auto mode.

IS: "ipsec adjTcpMss 0" will change to auto mode.

4. [ENHANCEMENT]

(1) System Resources:

1. Some memory, which is used by running features and system process, has gone in system resource bar. Add back this part of memory in the bar.
2. Give a space between number and MB.

WAS: 19/64MB

IS: 19/64 MB

(2) Time representation:

Modify eWC>home page>Up Time as a running clock.

(3) Firmware Version

Give eWC>Homepage>Firmware Version a hyperlink to eWC>Maintenance> F/W Upload.

(4) Security Services:

1. Give eWC>Homepage>IDP/Anti-Virus Definitions a hyperlink to eWC>IDP> Update.
2. Add eWC>Homepage>IDP/Anti-Virus Expiration Date a hyperlink to eWC>Anti-Virus> Service.
3. Give eWC>Homepage>Anti-Spam Expiration Date a hyperlink to eWC>Registration> Service.
4. Give eWC>Homepage>Content Filter Expiration Date a hyperlink to WC>Registration> Service.

(5) Interfaces

1. Give each eWC>interface a hyperlink to link to the corresponding configuration page.

WAN1/WAN2 link to eWC>Network>WAN page

Dial Backup link to eWC>Network>WAN>Dial Backup page

LAN link to eWC>Network>LAN>LAN page

IP alias1/2 link to eWC>LAN>IP alias 1/2 page

WLAN link to eWC>Network>WLAN>WLAN page

IP alias1/2 link to eWC>WLAN>IP alias 1/2 page

DMZ link to eWC>Network>DMZ>DMZ page

IP alias1/2 link to eWC>DMZ>IP alias 1/2 page
(6) Remove underlines from the links in eWC>Homepage.
(7) Put eWC>Homepage a warning message for Turbo card is not installed.
(8) If there is no Turbo Card installed, the Security Services should be presented accordingly:
WAS: Intrusion Detected 0
Virus Detected 0
IS: Intrusion Detected N/A
Virus Detected N/A

5. [ENHANCEMENT]
Support dual multiple WAN devices for IPSec HA scenario.

6. [ENHANCEMENT]
Change the Anti-Spam wording in log.
WAS: "Mail Parser buffer is overflow!"
IS: "AS checking bypassed as a mail header line exceeds 1024 characters!"

7. [ENHANCEMENT]
(1) Remove the eWC check box: Enable Firewall for VPN traffic.
(2) Remove CI command "ipsec swFwScan on|off".

8. [BUG FIX][060502049]
Symptom: Device crashes when sends large number of mails.
Condition:
(1) Enable Anti-SPAM and external database.
(2) Enable Bandwidth management in WAN and DMZ.
(3) Send and receive large number of mails between DMZ and WAN interface.
(4) Device will crash.

9. [BUG FIX] [060516907]
Symptom: Traffic can’t pass VPN tunnel after a long while.
Condition:
Topology:
PC1 (192.168.1.33) --- ZW_A (192.168.70.100) ==== VPN tunnel ==== (192.168.70.200)ZW_B --- (192.168.2.33)PC2

(1) VPN configuration on ZW_A:
IKE 1:
Secure gateway: 192.168.70.200
Enable XAUTH client
SA lifetime = 180 seconds
Policy 1:
Local network: 1.1.1.1/24
Remote network: 2.2.2.2/24
Enable Nail up

SA lifetime = 28800 seconds
Policy 2:
Local network: 192.168.1.33/24
Remote network: 192.168.2.33/24
SA lifetime = 180 seconds
(2) VPN configuration on ZW_B:
IKE 1:
Secure gateway: 192.168.70.100
Enable XAUTH server
SA lifetime = 180 seconds
Policy 1:
Local network: 2.2.2.2/24
Remote network: 1.1.1.1/24
SA lifetime = 28800 seconds
Policy 2:
Local network: 192.168.2.33/24
Remote network: 192.168.1.33/24
SA lifetime = 180 seconds
(3) PC1 ping PC2
(4) After a while the Policy 2 can't be established anymore.

10. [BUG FIX][060517002]
Symptom: Some wordings in "eWC->ANTI-VURUS" are not correct.
Condition:
(1) Go to "eWC->ANTI-VIRUS->General".
(2) The wording "POP3 (TCP/UDP 110)" should be "POP3 (TCP 110)"
(3) The wording "SMTP (TCP/UDP 25)" should be "POP3 (TCP 25)"

11. [BUG FIX][060423782]
Symptom: The device can't enable multiple proposal in IKE rule.
Condition:
(1) Add an IKE rule using "Preshare key" as authentication type.
(2) Add another IKE rule using "Certificate" as authentication type, different preshare key and enable the multiple proposal.
(3) This IKE rule cannot save.

12. [BUG FIX][060515863]
Symptom: In eWC>HOME>Network Status>more page, wireless cannot get correct port status.
Condition:
(1) Insert G-110 wireless card.
(2) Switch device to bridge mode.
(3) Go to eWC>HOME>Network Status>more page.
(4) The "Port Status" of Wireless Card is 100M/Full, but SMT is 54M.
(5) The "Port Status" of WLAN Interface has no any information.

13. [BUG FIX][060427219]
Symptom: In PPTP encapsulation, enable VPN, AV and AS, PC can not receive the mail via VPN tunnel.
Condition:

PC1(mail-server:argosoft1.8)--(DMZ)ZW70(WAN:PPPoE)---(WAN:PPTP)ZW5(LAN) ------PC2(Outlook Express)
(1) Establish a VPN tunnel between ZW70 and ZW5.
(2) In ZW70, enable AV, disable AS.
(3) In ZW5, enable AS.
(4) PC2 can't receive the mail from PC1.

14. [BUG FIX][060424803]
Symptom: ZyWALL crashes after changing MAC address.
Condition:
(1) Take a registered device and reboot it.
(2) After device boot up, use CLI "sys my serviceR" to refresh the registration.
(3) When you get the "Service refresh successfully" message, use the CLI "sys atwz 0000aazzzzzz" (Change the MAC address you want) to change the MAC address.
(4) Device will crash when rebooting.

15. [BUG FIX][060509567]
Symptom: Bridge mode Network Status Bridge Port loss DMZ port.
Condition:
Bridge mode in GUI Home> Network Status>More> Bridge Port loss DMZ port.

16. [BUG FIX][060509570]
Symptom: VPN rule swap fails on phase one ID check.
Condition:
Topology:
(LAN) Bridge_A (WAN)=======(WAN) Bridge_B(LAN)

(1) On Bridge_A, add a VPN rule:
IKE: Static rule, enable XAUTH and set as client mode.
Local ID: Type=DNS Content = d.c.b.a
Peer ID: Type=DNS Content = a.b.c.d
IPSEC Policy: Local=Single 1.1.1.1, Peer=Single 2.2.2.2
(2) On Bridge_B, add two VPN rules:
1. Rule one:
IKE: Static rule, XAUTH is disabled.
Local ID: Type=DNS Content = a.a.a.a
Peer ID: Type=DNS Content = b.b.b.b
IPSEC: Local=Single 3.3.3.3, Remote=Single 4.4.4.4
2. Rule two:
IKE: Dynamic rule, enable XATUH and set as server mode.
Local ID: Type=DNS Content = d.c.b.a

Peer ID: Type=DNS Content = a.b.c.d
IPSEC Policy: Local=Single 1.1.1.1, Remote=Single 2.2.2.2

(3) Dial VPN tunnel from Bridge_A to Bridge_B, the VPN tunnel will fail to build up by phase one ID mismatch.

17. [BUG FIX][060426102]
Symptom: User can't receive mail through VPN tunnel when WAN is in PPTP encapsulation.
Condition:
Topology:
PC1 (mail client) --- ZW5 (PPTP) === VPN tunnel === ZW70 ---- PC2 (mail server)

(1) Establish VPN tunnel between ZW5 and ZW70.
(2) ZW5's WAN is PPTP, enable AS.
(3) ZW70's WAN can be any encapsulation type, disable AS.
(4) PC1 receives mail from PC2 but it fails.

18. [BUG FIX][060503068]
Symptom: Asymmetrical route cannot work.
Condition:
Topology as follows:
PC (A) ---- [L]DUT(B)[W] ------- Internet --- HTTP server(D)(66.102.7.104)
| |
-- [L]Router(C)[W] --- Internet

1. DUT configures a static route that forwarding packets of destination IP 66.102.7.104 through internal link to Router(C).
PC (A)'s default route entry is DUT (B).
Router (c) is NAT enabled.
2. PC (A) establishes HTTP connection to HTTP server (D).
a. SYN Packet: A -> B (LAN) -> C (LAN) -> C (WAN) -> D.
b. SYN ACK Packet: D -> C (WAN) -> C (LAN) -> A.
c. ACK Packet: A -> B (LAN), and DUT drop it.

19. [BUG FIX][060502057]
Symptom: Trigger port can't be reconnected.
Condition:
Topology:
PC1
(192.168.1.33)------(LAN)ZyWALL(WAN:192.168.70.175)-----PC2(192.168.70.176)

(1) Reset to default romfile.
(2) Go to eWC>WAN>WAN1, set WAN IP Address=192.168.70.175.
(3) Go to eWC>NAT>Port Triggering>WAN1 Interface>Index 1, set Name=ftp, Incoming Start Port=21, incoming End Port=110, Trigger Start Port=21,Trigger End Port=21.
(4) Disable Firewall.

(5) PC1 ftp to PC2, and then PC2 ftp to PC1.
(6) PC2 disconnects ftp session and then reconnects to PC1 will be fail, while PC1 ftp session still connected.

20. [BUG FIX][060424820]
Symptom: GUI popup java script error in eWC>NAT>NAT Overview
Condition:
(1) Go to eWC>NAT>NAT, change Max concurrent session per host to 500 and press key "Enter".
(2) ZyWALL popup java script error.
(3) The status bar shows "spSave () fail with Error -6103".

21. [BUG FIX][060502036]
Symptom: The eWC>DNS>DHCP cannot get WAN2 DNS.
Condition:
(1) Restore default romfile.
(2) WAN2 connects to DHCP server and gets IP and DNS successfully.
(3) Go to eWC>DNS>DHCP page, the IP field cannot get WAN2 DNS.

22. [BUG FIX][060427214]
Symptom: Redundant gateway sometimes can’t be saved if it's in domain name format.
Condition:
(1) Create an IKE rule with IPSEC HA is enabled.
(2) Configure a non-exist domain name as redundant gateway.
(3) Let Domain Name Update Timer query this non-exist domain name. It will fail.
(4) Try to modify the domain name with a correct one and save it.
(5) Several minutes later, users will find the domain name has not been changed; it's still the old one.

23. [BUG FIX][060329452]
Symptom: In eWC>VPN, VPN Rules page shows incorrect domain name.
Condition:
(1) Go to eWC>DNS>DDNS, set a WAN domain name as "123456789.123456789.123456789.123456789.123456789.123456789.123".
(2) Go to eWC>VPN, create a VPN rule using My domain as 123456789.123456789.123456789.123456789.123456789.123456789.123".
(3) While applying the setting, VPN Rules page shows incorrect domain name.

24. [BUG FIX][060420654]
Symptom: Wireless client still can scan wireless network after disabled wireless card.
Condition:
(1) Plug in G100/G110 wireless card.
(2) Go to eWC/Network/Wireless Card/Wireless Card, enable wireless card and set ESSID as "testWlan".
(2) Wireless Client can scan the "testWlan" network by Odyssey tool.
(3) Disable wireless card.

(4) Wireless Client still can scan the "testWlan" network by Odyssey tool.

25. [BUG FIX][060426084]
Symptom: ZyWALL crashes when setting NAT address mapping rules.
Condition:
(1) Go to eWC＞NAT＞Address Mapping page.
(2) Add a new rule, configure
Type= Many-to-Many-Overload,
Local Start IP= 1.1.1.1
Local End IP= 3.3.3.3
Global Start IP= 4.4.4.4
Global End IP= 5.5.5.5
(3) Click "Apply" button, then ZyWALL crashes.

26. [BUG FIX][060424869]
Symptom: Change WAN IP in GUI, the "Private" option in SMT11.1->Edit IP will be set as "NO".
Condition:
(1) Go to SMT11.1, configure Encapsulation as "PPPoE" or "PPTP".
(2) Go to SMT11.1->Edit IP, change "Private" to "Yes".
(3) Go to eWC->WAN->WAN1, set IP as static IP address.
(4) Go to SMT11.1->Edit IP, the value of "Private" will become "No".

27. [BUG FIX][060426102]
Symptom: NAT Many-to-Many Overload rule cannot be set in eWC.
Condition:
(1) Go to eWC>NAT>Address Mapping page, click "Insert" button.
(2) In NAT - ADDRESS MAPPING page, select Type= Many-to-Many Overload.
(3) Click the "Apply" button, and the status shows "Extra characters were detected in the item".

28. [BUG FIX][060424823]
Symptom: NAT historical high NAT session per host will over one session than Max concurrent session per host.
Condition:
(1) Go to eWC>NAT>NAT overview, change Max concurrent sessions per host to 500.
(2) Use BluePortScan to do port scan.
(3) Historical high session per host is 501.

29. [BUG FIX][060423784]
Symptom: Anti-Spam cannot work in NAT loop back situation.
Condition:
(1) Put PC1 and PC2 on LAN side of ZyWALL.
(2) ZyWALL enables Anti-Spam and disables External Database.
(3) PC2 installs the Merak Mail Server.

(4) PC1 uses the outlook express to send mail to itself by the mail server of PC2.
(5) When the PC1 is sending mails will cause mail stuck until timeout.

30. [BUG FIX][060412729]
Symptom: Device responds an invalid sysObjectID value while SNMP browsing.
Condition:
(1) Restore default romfile.
(2) MIB browser connects to device and will get invalid value enterprises.890.1.2(prestige).

31. [BUG FIX][060420625]
Symptom: VPN can be successfully built up with wrong IPSec rule.
Condition:
Topology:
(LAN) ZyWALL_A (WAN)=======(WAN) Bridge_B (LAN)

(1) On ZyWALL A, add a VPN rule:
IKE: Static rule, enable XAUTH and set as client mode.
IPSEC Policy: Local=Single 1.1.1.1, Remote=Single 2.2.2.2
(2) On Bridge_B, add two VPN rules:
1. Rule one:
IKE: Static rule, enable XAUTH and set as server mode.
IPSEC: Local=Single 3.3.3.3, Remote=Single 4.4.4.4
2. Rule two:
IKE: Dynamic rule. XATUTH is disabled.
IPSEC Policy: Local=Single 1.1.1.1, Remote=Single 2.2.2.2
(3)Dial VPN tunnel from ZyWALL_A to Bridge_B, the VPN tunnel will be successfully
built up with Bridge_B's rule two.

32. [BUG FIX][060411623]
Symptom: The eWC>Firewall>Default Rule page will pup up JavaScript error in bridge mode.
Condition:
(1) Go to eWC>FIREWALL>Default Rule page.
(2) Click Reset button, ZyWALL pup up JavaScript error.

33. [BUG FIX][060425022]
Symptom: Device crash (Soft watchdog starts up.)
Condition:
(1) Firewall+NAT+AV+IDP+AS+AS black list+LB
(2) LAN has a mail client、mail server；DMZ has a mail client、2 mail server；WLAN has a mail client. All of them are on IxLoad
(3) Run IxLoad 10 minutes，device crash

34. [BUG FIX][060418336]

Symptom: Traffic can’t go out after use the tfgen tool.
Condition:
(1) Restore default rom file.
(2) In LAN, use the TfGen with following setting.
Utilization: 40000
Destination: 168.95.1.1
Port: 777
After use the tfgen, all the traffic from LAN can’t go outside.

Modifications in V 4.01(WM.0)b1 | 04/24/2006

1. [ENHANCEMENT]
   (1) Add UTM reports for IDP/AV/AS.
   (2) Change linkage from GUI>Logs>Reports to GUI>UTM Reports>System Reports.
   (3) Re-layout UTM Home GUI for ZyWALL 4.01.
2. [ENHANCEMENT]
   Add redundant IPSec gateway (IPSec HA).
3. [ENHANCEMENT]
   IPSec traffic can be managed by security rule (IDP/AV/AS/FW/CF/BM)
4. [FEATURE CHANGE]
   Was: IPSec auto-build tunnel command can only build tunnels with same secure gateway IP.
   Is: Users can automatically build VPN tunnels with incremental secure gateway IP addesses.
   Usage of CLI command: ipsec build<secure gateway> <local IP address>
   <remote IP address> <Nailed-Up> <num> <Control ping> in which
5. [ENHANCEMENT]
   Add direction matrix setting in Firewall/AV/AS/IDP.
6. [ENHANCEMENT]
   Chage weighting of Anti SPAM servers based on average time and fail rate.
7. [ENHANCEMENT]
   (1) Add CI command to see the runtime data for AntiSpam.
   "as display runtimedata <all|black|white> [all|ip|mime|email|subject]"
   (2) Wildcard support for subject and email fields in black list and white list.
   1. Support "*" to indicate match any character 0 or more times.
   2. It is case-insensitive.
   3. The maximum length of the email and subject fields is 63 characters.
8. [ENHANCEMENT]
   Add PKCS12 for ZyNOS.
9. [ENHANCEMENT]
   WLAN Zone enhancement.
   (1) ZyWALL has an independent WLAN Zone interface, no matter WLAN card.
   (2) WLAN card is not the independent WLAN interface.
   (3) WLAN card can be bridged to LAN, DMZ and WLAN Zone interface.
10. [ENHANCEMENT]

support WLAN in "ip nat routing" CI command. Turn on this option for LAN/DMZ/WLAN, packets will be routed when it cannot match any NAT rule.

11. [ENHANCEMENT].
    Add a CI command "ip alg ftpPortNum [port number]" to support a different port number on FTP ALG. This port is an additional FTP ALG port, the original FTP port(21) still works. Note: This CI command will not save to SPT, so user will need to put into autoexec.net if they want to keep the setting.

12. [ENHANCEMENT]
    Consolidate "Router reply ICMP packet" log.
    (1) Router reply ICMP packet: ICMP(Port Unreachable).
    (2) Router reply ICMP packet: ICMP(Host Unreachable).
13. [ENHANCEMENT]
    Add a CI command "sys arp ackGratuitous", let ZyWALL to support gratuitous ARP request and update MAC mapping on ARP table for the sender of this ARP request. There are two subcommands under "ackGratuitous":
    (1) "active [yes|no]": Let ZyWALL accept gratuitous ARP request.
    (2) "forceUpdate [on|off]" If zywall ARP table already had target IP address ARP entry, forceUpdate option will update the exist MAC mapping to new one.
14. [FEATURE CHANGE]
    WAS: The ZyWALL uses a fixed NTP server list with 10 NTP servers to adjust the system time.
    IS: Use 0.pool.ntp.org, 1.pool.ntp.org, 2.pool.ntp.org instead of specific NTP servers to adjust the system time.
    The pool.ntp.org is a virtual cluster of timeservers, it uses a round robin way to provide different NTP server to clients.

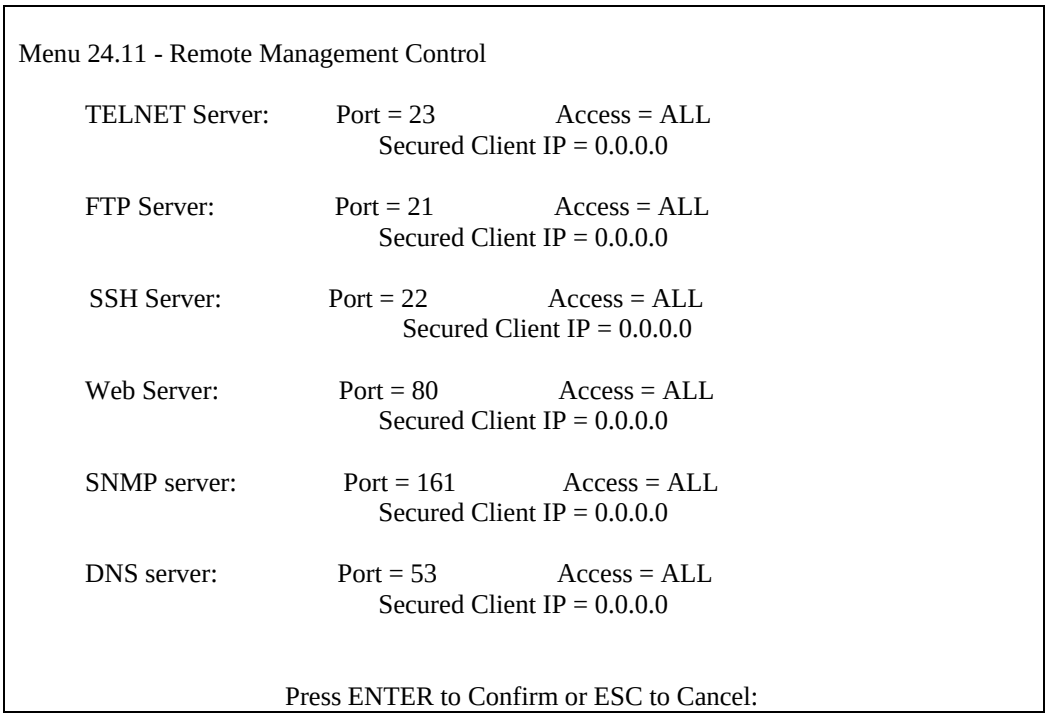
Appendix 1 Remote Management Enhancement (Add SNMP & DNS Control)

New function

(1) You can change the server port.
(2) You can set the security IP address for each type of server.
(3) You can define the rule for server access. (WAN only/LAN only, None, ALL).
(4) The secure IP and port of the SNMP server is read only
(5) The port of the SNMP and DNS server is read only.
(6) The default server access of the SNMP and DNS is ALL.

Modification

(1) The default value for Server access rule is **ALL**.
(2) Under the default setting: You can setup the Menu 15 to forwarding the server to LAN IP address. Thus you can configure the router through the WAN and you don't need to modify the server management or filter.



Appendix 2 Trigger Port

Introduction

Some routers try to get around this "one port per customer" limitation by using "triggered" maps. Triggered maps work by having the router watch ***outgoing*** data for a specific port number and protocol. When the router finds a match, it remembers the IP address of the computer that sent the matching data. When the requested data wants to come back ***in*** through the firewall, the router uses the port mapping rules that are linked to the trigger, and the IP address of the computer that "pulled" the trigger, to get the data back to the proper computer.

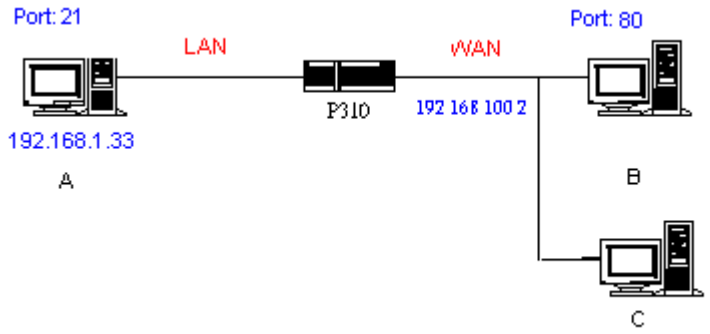
These triggered events can be timed so that they erase the port mapping as soon as they are done with the data transfer, so that the port mapping can be triggered by another Client computer. This gives the ***illusion*** that multiple computers can use the same port mapping at the same time, but the computers are really just taking turns using the mapping.

How to use it

Following table is a configuration table.

Name	Incoming	Trigger
Napster	**6699**	**6699**
Quicktime 4 Client	**6970-32000**	**554**
Real Audio	**6970-7170**	**7070**
User	**1001-1100**	**1-100**

How it works



For example, you are running a FTP Server on port 21 of machine A. And you may want this server accessible from the Internet without enabling NAT-based firewall. There are one Web Server on port 80 of machine B and another client C on the Internet.

(1) As Prestige receives a packet from a local client A destined for the outside Internet machine B, it will check the destination port in the TCP/UDP header to see if it matches the setting in "Trigger Port" (80). If it matches, Prestige records the source IP of A (192.168.1.33) in its internal table.

(2) Now client C (or client B) tries to access the FTP server in machine A. When Prestige to forward any un-requested traffic generated from Internet, it will first check the rules in port forwarding set. When no matches are found, it will then check the

"Incoming Port". If it matches, Prestige will forward the packet to the recorded IP address in the internal table for this port. (This behavior is the same as we did for port forwarding.)

(3) The recorded IP in the internal table will be cleared if machine A disconnect from the sessions that matches the "Trigger Port".

Notes

(1) Trigger events can't happen on data coming from ***outside*** the firewall because the NAT router's sharing function doesn't work in that direction.

(2) Only one computer can use a port or port range at a time on a given real (ISP assigned) IP address.

Appendix 3 Hard-coded packet filter for "NetBIOS over TCP/IP" (NBT)

The new set C/I commands is under "sys filter netbios" sub-command. Default values of any direction are “Forward”, and trigger dial is “Disabled”.

There are two CI commands:
(1) "sys filter netbios disp": It will display the current filter mode.

Example ouput:

```
============== NetBIOS Filter Status ==============
        LAN to WAN:         Block
        WAN to LAN:         Forward
        IPSec Packets:      Forward
        Trigger Dial:       Disabled
```

(2) "sys filter netbios config <type> {on|off}": To configure the filter mode for each type. Current filter types and their description are:

Type	Description	Default mode
0	LAN to WAN	Forward
1	WAN to LAN	Forward
6	IPSec pass through	Forward
7	Trigger dial	Disabled

Example commands:
sys filter netbios config 0 on => block LAN to WAN NBT packets
sys filter netbios config 1 on => block WAN to LAN NBT packets
sys filter netbios config 6 on => block IPSec NBT packets
sys filter netbios config 7 off => disable trigger dail

Appendix 4 Traffic Redirect/Static Route Application Note

Why traffic redirect/static route be blocked by ZyWALL

ZyWALL is the ideal secure gateway for all data passing between the Internet and the LAN. For some reasons (load balance or backup line), users want traffics be re-routed to another Internet access devices while still be protected by ZyWALL. The network topology is the most important issue. Here is the common example that people misemploy the LAN traffic redirect and static route.

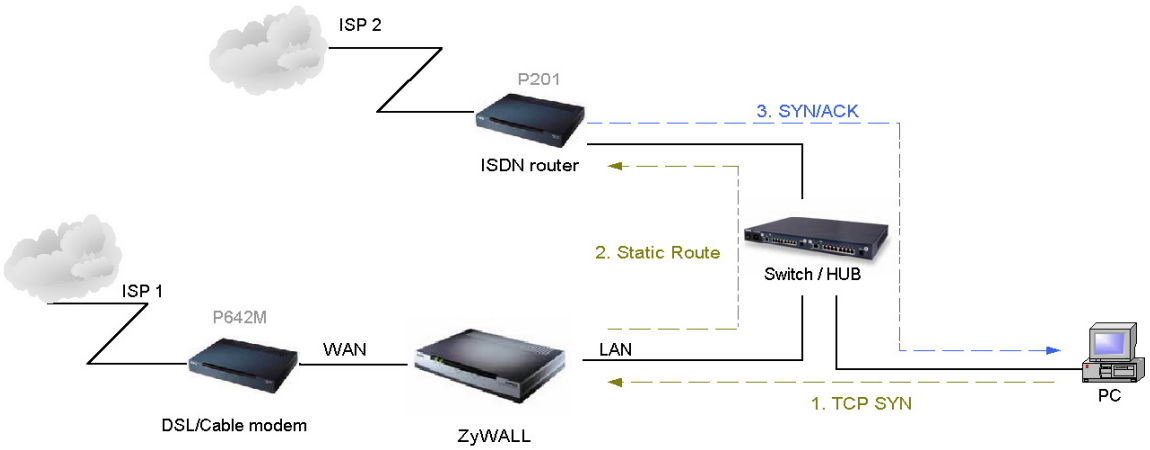


Figure 5-1 Triangle Route

Figure 5-1 indicates the triangle route topology. It works fine with turn off firewall. Let's take a look into the perspective toward this situation.

Step 1. PC sends outgoing traffics through ZyWALL because default gateway assigned to it.

Step 2. Then, ZyWALL will redirect the traffics to another gateway (ISDN/Router) as we expect.

Step 3. But the return traffics do not go through ZyWALL because the gateway (say, P201) and the PC are on the same IP network. **Any traffic will easily inject into the protected network area through the unprotected gateway**.

Step 4. When firewall turns on, it could be worse. ZyWALL will check the outgoing traffics by ACL and create dynamic sessions to allow legal return traffics. For Anti-DoS reason, ZyWALL will send RST packets to the PC and the peer because it never received TCP SYN/ACK packet.

That causes all of outgoing TCP traffics being reset!

How traffic redirect/static route works under protection - Solutions

(1) Gateway on alias IP network

IP alias allows you to partition a physical network into different logical IP networks over the same Ethernet interface. The ZyWALL supports three logical LAN interfaces via its single physical Ethernet interface with the ZyWALL itself as the gateway for each LAN network. Division of protected LAN and the other gateway into different subnets will trigger the incoming traffic back to ZyWALL and it can work as

normal function.

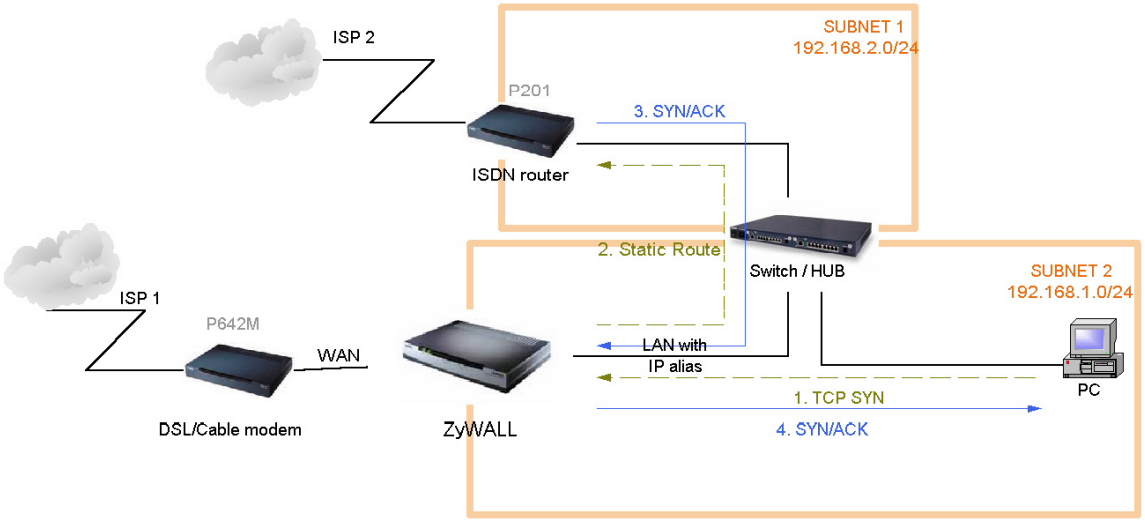


Figure 5-2 Gateway on alias IP network

(2) Gateway on WAN side

A working topology is suggested as below.

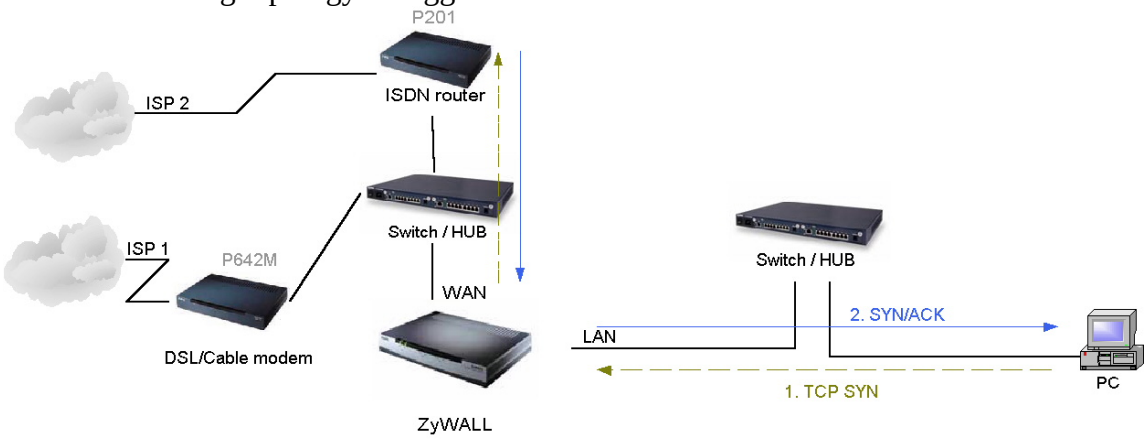


Figure 5-3 Gateway on WAN side

Appendix 5 IPSec FQDN support

ZyWALL A----------Router C (with NAT) ----------ZyWALL B
(WAN) (WAN) (LAN) (WAN)

If ZyWALL A wants to build a VPN tunnel with ZyWALL B by passing through Router C with NAT, A can not see B. It has to secure gateway as C. However, ZyWALL B will send it packet with its own IP and its ID to ZyWALL A. The IP will be NATed by Router C, but the ID will remain as ZyWALL B sent.

In FQDN design, all three types, IP, DNS, E-Mail, can set ID content. For ID type is DNS or E-mail, the behavior is simple. ZyWALL A and ZyWALL B only checks the ID

contents are consistent and they can connect.

Basically the story is the same when ID type is IP. If user configures ID content, then ZyWALL will use it as a check. So the ID content also has to match each other. For example, ID type and ID content of incoming packets must match “Peer ID Type” and “Peer ID content”. Or ZyWALL will reject the connection.

However, user can leave “ID content” blank if the ID type is IP. ZyWALL will put proper value in it during IKE negotiation. This appendix describes all combinations and behaviors of ZyWALL.

We can put all combinations in to these two tables:

(Local ID Type is IP):

Configuration		**Run-time status	
My IP Addr	Local ID Content	My IP Addr	Local ID Content
0.0.0.0	*blank	My WAN IP	My WAN IP
0.0.0.0	a.b.c.d (it can be 0.0.0.0)	My WAN IP	a.b.c.d (0.0.0.0, if user specified it)
a.b.c.d (not 0.0.0.0)	*blank	a.b.c.d	a.b.c.d
a.b.c.d (not 0.0.0.0)	e.f.g.h (or 0.0.0.0)	a.b.c.d	e.f.g.h (or 0.0.0.0)

*Blank: User can leave this field as empty, doesn’t put anything here.
**Runtime status: During IKE negotiation, ZyWALL will use “My IP Addr” field as source IP of IKE packets, and put “Local ID Content” in the ID payload.

(Peer ID Type is IP):

Configuration		*Run-time check
Secure Gateway Addr	Peer ID Content	
0.0.0.0	blank	Just check ID types of incoming packet and machine’s peer ID type. If the peer’s ID is IP, then we accept it.
0.0.0.0	a.b.c.d	System checks both type and content
a.b.c.d	blank	1. System will check the ID type and the content. 2. The contents will match only if the ID content of coming packet is a.b.c.d because system will put Secure Gateway Address as Peer ID content.
a.b.c.d	e.f.g.h	1. System will check the ID type and the content. 2. The contents will match only if the ID content of coming packet is e.f.g.h.

*Runtime Check: During IKE negotiation, we will check ID of incoming packet and see if it matches our setting of “Peer ID Type” and “Peer ID Content”.

Summary:

1. When Local ID Content is blank which means user doesn't type anything here, during IKE negotiation, my ID content will be "My IP Addr" (if it's not 0.0.0.0) or local's WAN IP.
2. When "Peer ID Content" is not blank, ID of incoming packet has to match our setting. Or the connection request will be rejected.
3. When "Secure Gateway IP Addr" is 0.0.0.0 and "Peer ID Content" is blank, system can only check ID type. This is a kind of "dynamic rule" which means it accepts incoming request from any IP, and these requests' ID type is IP. So if user put a such kind of rule in top of rule list, it may be matched first. To avoid this problem, we will enhance it in the future.

Appendix 6 Embedded HTTPS proxy server

HTTPS (Hypertext Transfer Protocol over Secure Socket Layer, or HTTP over SSL) is a Web protocol developed by Netscape and built into its browser that encrypts and decrypts user page requests as well as the pages that are returned by the Web server. HTTPS is really just the use of Netscape's Secure Socket Layer (SSL) as a sublayer under its regular HTTP application layering.

The ZyWALL's embedded HTTPS proxy server is basically an SSL server which performs SSL transactions, on behalf of the embedded HTTP server, with an SSL client such as MSIE or Netscape. As depicted by the figure below, when receiving a secure HTTPS request from an SSL-aware Web browser, the HTTPS proxy server converts it into a non-secure HTTP request and sends it to the HTTP server. On the other hand, when receiving a non-secure HTTP response from the HTTP server, the HTTPS proxy server converts it into a secure HTTPS response and sends it to the SSL-aware Web browser.

By default, the HTTPS proxy server listens on port 443 instead of the HTTP default port 80. If the ZyWALL's HTTPS proxy server port is changed to a different number, say 8443, then the URL for accessing the ZyWALL's Web user interface should be changed to https://hostname:8443/ accordingly.

Appendix 7 Multiple WAN Access

Because of the expansion of broad band service, the bandwidth is more and more cheap. Some of audio and video applications become usable, such as VoIP and video conference. The company will subscribe several links for different application. They may use it for VoIP, Backup line, Load sharing, and extend bandwidth. Thus they will need a device to manage these kinds of application.

The ZyWALL has two independent WAN ports, so it offers the ability to configure a secondary WAN port for highly reliable network connectivity and robust performance. The user can connect WAN 1 to one ISP(or network), and connect the other to a second

ISP(or network). This secondary WAN port can be used in “active-active” load sharing or fail-over configuration providing a highly efficient method for maximizing total network bandwidth.

The default mode of the WAN 2 interface is “Active-Passive” or “Fail-Over” mode, that is the secondary WAN will automatically “bring-up” when the first WAN fails. The user can enter eWC/WAN/General page to select WAN to “Active/Active” mode. At “Active/Active” mode, ZyWALL can access internet through WAN 1 and WAN 2 simultaneously. The user also can setup policy route rule and static route rule to specify the traffic to certain link. ZyWALL Connectivity Check will check the connectivity of WAN 1, WAN 2 and Traffic Redirect. Please notice that even at the “Active/Active” mode, WAN 2 is still the backup line of WAN 1, and WAN 1 is also the backup line of WAN 2.

The user can use policy routing to specify the WAN port that specific services go through. If one WAN port’s connection goes down, the ZyWALL can automatically send its traffic through the other WAN port, if the user allows this traffic to use the other WAN port.

The ZyWALL NAT feature allows the user to give two separate sets of rules(NAT Mapping rules and Port Forwarding rules) for WAN 1 and WAN 2.

The DDNS also has the high availability feature based on Multiple WAN. That is the ZyWALL can use the other WAN interface for domain names if the original configured WAN interface goes down.

Appendix 8 Wi-Fi Protected Access

Wi-Fi Protected Access(WPA) is a subset of the IEEE 802.11i. WPA improves data encryption by using TKIP, MIC and IEEE 802.1X. Because WPA applies 802.1X to authenticate WLAN users by using an external RADIUS server, so you can not use the Local User Database for WPA authentication.

For those users in home or small office, they have no RADIUS server, WPA provides the benefit of WPA through the simple “WPA-PSK”. Pre-Shared Key(PSK) is manually entered in the client and ZyWALL for authentication. ZyWALL will check the client PSK and allow it join the network if it’s PSK is matched. After the client pass the authentication, ZyWALL will derived and distribute key to the client, and both of then will use TKIP process to encrypt exchanging data.

Appendix 9 IPSec IP Overlap Support

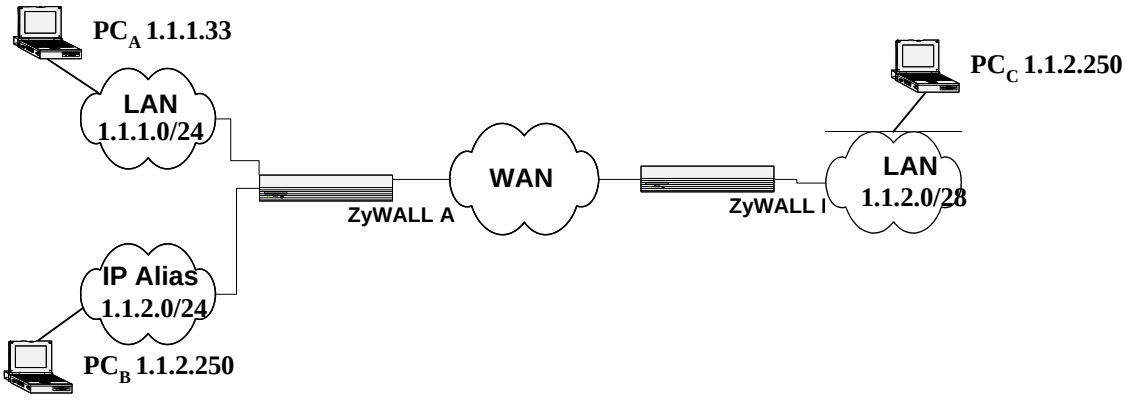


Figure 1

The ZyWALL uses the network policy to decide if the traffic matches a VPN rule. But if the ZyWALL finds that the traffic whose local address overlaps with the remote address range, it will be confused if it needs to trigger the VPN tunnel or just route this packet.

So we provide a CI command "ipsec swSkipOverlapIp" to trigger the VPN rule. For example, you configure a VPN rule on the ZyWALL A as below:

Local IP Address Start= 1.1.1.1 End= 1.1.2.254
Remote IP Address Start= 1.1.2.240 End = 1.1.2.254

You can see that the Local IP Address and the remote IP address overlap in the range from 1.1.2.240 to 1.1.2.254.

(1) Enter "ipsec swSkipOverlapIp off":
To trigger the tunnel for packets from 1.1.1.33 to 1.1.2.250. If there is traffic from LAN to IP Alias (Like the traffic from PC_A to PC_B in Figure 1), the traffic still will be encrypted as VPN traffic and routed to WAN, you will find their traffic disappears on LAN.
(2) Enter "ipsec swSkipOverlapIp on":
Not to trigger the tunnel for packets from 1.1.1.33 to 1.1.2.250. Even the tunnel has been built up, the traffic in this overlapped range still cannot be passed.

[Note]
If you configure a rule on the ZyWALL A whose
Local IP Address Start= 0.0.0.0
Remote IP Address Start= 1.1.2.240 End = 1.1.2.254
No matter swSkipOverlapIp is on or off, any traffic from any interfaces on the ZyWALL A will match the tunnel. Thus swSkipOverlapIp is not applicable in this case.

Appendix 10 VPN Local IP Address Limitation

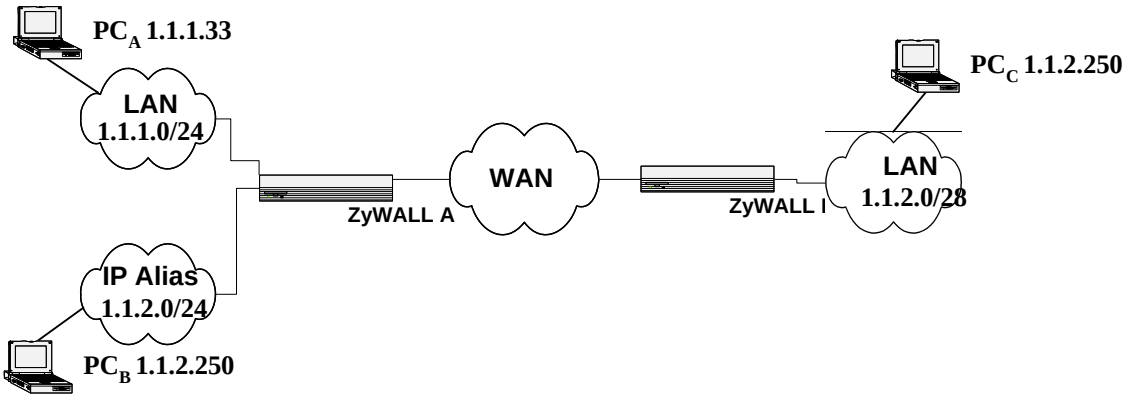


Figure 1

There is a limitation when you configure the VPN network policy to use any Local IP address. When you set the Local address to 0.0.0.0 and the Remote address to include any interface IP of the ZyWALL at the same time, it may cause the traffic related to remote management or DHCP between PCs and the ZyWALL to work incorrectly. This is because the traffic will all be encrypted and sent to WAN.

For example, you configure a VPN rule on the ZyWALL A as below:

Local IP Address Start= 1.1.1.1 End= 1.1.2.254
Remote IP Address Start= 1.1.2.240 End = 1.1.2.254

ZyWALL LAN IP = 1.1.1.10

ZyWALL LAN IP falls into the Local Address of this rule, when you want to manage the ZyWALL A from $PC_{A,}$ you will find that you cannot get a DHCP Client IP from the ZyWALL anymore. Even if you set your IP on PC_A as static one, you cannot access the ZyWALL.

Appendix 11 VPN rule swap limitation with VPN Client on XAuth

Example 1:

ZyWALL (WAN)---------- VPN Client
(IP:1.1.1.1) (IP:1.1.1.2)

ZyWALL VPN Rule: Two IKE rule	
➢ Dynamic IKE rule: Security Gateway: 0.0.0.0 X-Auth: Server I. Policy one: - Name: “Rule_A” - Local: 192.168.2.0/24 - Remote: 0.0.0.0	➢ Static IKE rule: Security Gateway: 1.1.1.2 X-Auth: None I. Policy one: - Name: “Rule_B” - Local: 192.168.1.0/24 - Remote: 1.1.1.2/32

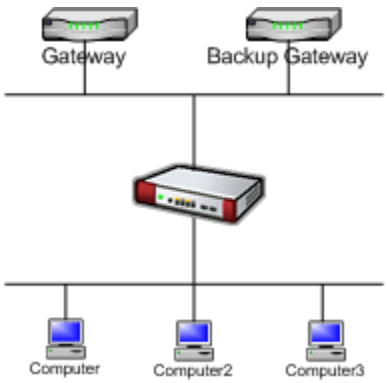
ZyXEL VPN Client
Security Gateway: 1.1.1.1 Phase one Authentication method: Preshare Key Remote: 192.168.1.0/24

In example 1, user may wonder why ZyWALL swap to dynamic rule even VPN client only set authentication method as “Preshare Key” not “Preshare Key+XAuth”. The root cause is that currently ZyXEL VPN Cient will send XAuth VID no matter what authentication mode that him set. Because of the XAuth VID, ZyWALL will swap to dynamic rule.

This unexpected rule swap result is a limitation of our design. For ZyWALL, when we got initiator’s XAuth VID in IKE Phase One period, we know initiator can support XAuth. To take account of security, we will judge that initiator want to do XAuth, and we will search one matched IKE Phase One rule with XAuth server mode as the top priority. To our rule swap scheme, we search static rule first then dynamic rule. In example 1, we will find the static rule, named “Rule_B”, to build phase one tunnel at first. After finished IKE phase one negotiation, we known initiator want to do XAuth. Since Rule_B has no XAuth server mode, we try to search another rule with correct IKE Phase One parameter and XAuth server mode. The search result will lead us to swap rule to dynamic rule, named “Rule_A”. Thus to build VPN tunnel will fail by Phase Two local ip mismatch.

To avoid this scenario, the short-term solution is that we recommend user to set two IKE rule with different Phase One parameter. The long-term solution is that VPN Client needs to modify the XAuth VID behavior. VPN Client should not send XAuth VID when authentication method is “Preshare key”, but send XAuth VID when authentication method is “Preshare key+XAuth”.

Appendix 12 The mechanism of Gratuitous ARP in the ZyWALL



In the past, if the ZyWALL gets a gratuitous ARP it will not update the sender's MAC mapping into its ARP table. In current design, if you turn on 'ip arp ackGratuitous active yes', the ZyWALL will response such packet depends on two case: 'ip arp ackGratuitous forceUpdate on' or 'ip arp ackGratuitous forceUpdate off'. if you turn

on forceUpdate, then the ZyWALL gets gratuitous ARP, it will force to update MAC mapping into the ARP table, otherwise if turn off forceUpdate, then the ZyWALL gets gratuitous ARP, it will update MAC mapping into the ARP table only when there is no such MAC mapping in the ARP table.

Give an example for its purpose, there is a backup gateway on the network as the picture. One day, the gateway shuts down and the backup gateway is up, the backup gateway is set a static IP as original gateway's IP, it will broadcast a gratuitous ARP to ask who is using this IP. If ackGratuitous is on, the ZyWALL receive the gratuitous ARP from the backup gateway, it will also send an ARP request to ask who is using this IP. Once the ZyWALL gets a reply from backup gateway, it will update its ARP table so that the ZyWALL can keep a correct gateway ARP entry to forward packets. If ackGratuitous is off, the ZyWALL will not keep a correct gateway ARP entry to forward packets.

There is one thing need to be noticed: update the ARP entry might still have dangers more or less if there is a spoofing attack. So we suggest if you have no opportunity to meet the problem, you can turn off ackGratuitous. forceUpdate on will be more dangerous than forceUpdate off because it update ARP table even when ARP entry is existing.

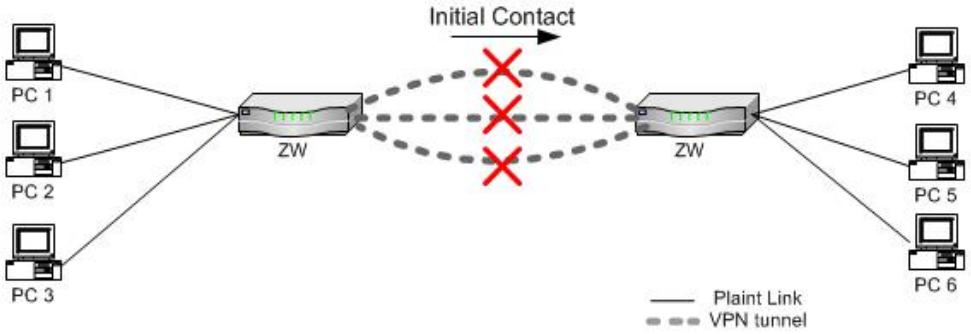
Appendix 13 The mechanism when the ZyWALL receives a IKE packets with IC

[RFC 2407]The INITIAL-CONTACT(IC) status message may be used when one side wishes to inform the other that this is the first SA being established with the remote system. The receiver of this Notification Message might then elect to delete any existing SA's it has for the sending system under the assumption that the sending system has rebooted and no longer has access to the original SA's and their associated keying material.

The ZyWALL has two ways to delete SA when it receives IC, it is switched by a global option 'ipsec initContactMode gateway/tunnel':

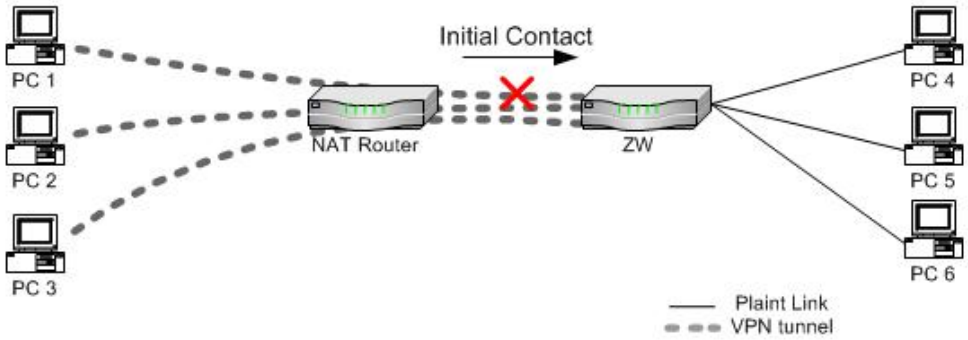
(1)ipsec initContactMode gateway

When the ZyWALL receives a IKE packets with IC, it deletes all tunnels with the same secure gateway IP. It is default option because the ZyWALL is site to site VPN device. Take the picture 1 as example, there are three VPN tunnels are created between ZWA and ZWB, but ZWA reboots for some reasons, and after rebooting, the ZWA will send a IKE with IC to the ZWB, then the ZWB will delete all existing tunnels whose security gateway IP is the same as this IKE's one and build a new VPN tunnel for the sender.



(2)ipsec initContactMode tunnel

When the ZyWALL receives a IKE packets with IC, it deletes only one existing tunnel, whose security gateway IP is not only the same as this IKE's one and also its phase 2 ID(network policy) should match. It is suitable when your tunnel is created from a VPN peer to ZyWALL and there are more than two this kind of VPN peers build tunnels behind the same NAT router. Take the picture 2 as example, PC 1, PC2 and PC3 has it's own VPN software to create tunnels with ZW. Suppose that the PC1, PC2 and PC3 separately create different tunnels with ZW for the traffic to PC4, PC5 and PC6, once the PC1 reboots for some reasons, and after rebooting, the PC1 sends a IKE with IC to the ZWB, then the ZWB will only delete the tunnel which is used by PC1 and PC4 and build a new VPN tunnel for it. So other tunnels will not be disconnected.



Appendix 14 The topologies ZyWALL doesn’t surpportted:

Previously, the ZyWALL supports most of SIP topologies except:

(1) SIP server on the ZyWALL’s LAN/DMZ/WLAN.

(2) Two SIP clients behind the ZyWALL and talk to each other.

Now we have solved these two problems, all directions of SIP calls can work. You can refer to the Figure 1, all of the SIP clients in the picture can register to the SIP server behind the ZyWALL and any two SIP clients can talk to each other.

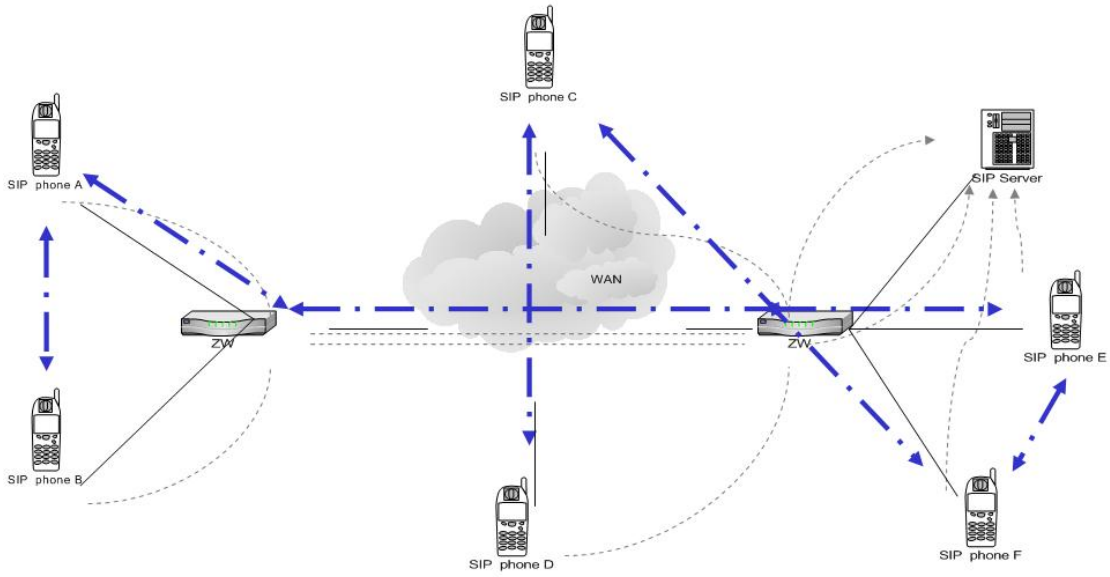


Figure 1.

But there are still some limitations remain that we need to overcome in the future. **When you deploy your SIP server on LAN for SIP service, please make sure that prevent your topology from any case listed as below**.

(1) When SIP client is on LAN, do not use NAT lookback on SIP server.

When there is a SIP server on the LAN, for those SIP clients on WAN, we can set a port forwarding rule or address mapping rule to let them to use WAN IP to access the SIP server behind the ZyWALL, but for those SIP clients which is behind the ZyWALL, please just use the SIP server's LAN IP and **DON'T** use the public IP as their SIP server IP, the ZyWALL doesn't support such a loopback case on SIP registration/proxy server.

For instance, in Figure 2, there is a SIP server on LAN, and there are also two SIP phones E and F on LAN want to talk to each other. Although there is a NAT port forwarding rule for outside SIP clients to use 211.72.158.200 to connect to SIP server, but please let phone E and F use SIP server's LAN IP 192.168.1.200 to connect to SIP server directly.

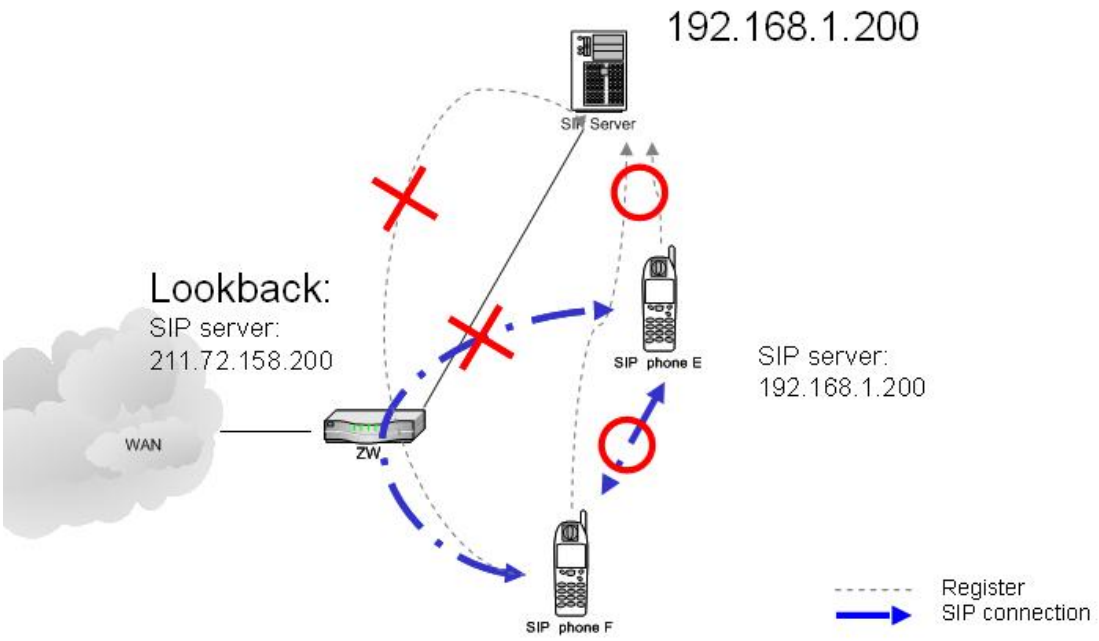


Figure 2.

(2) Try not use different global IPs for SIP client and SIP server on NAT.
Currently, there are still some limitations when use different global IPs for SIP client and SIP server. For instance, in Figure 3, SIP server and a SIP client B are on the same LAN. If we use different global IP for SIP server and the SIP client, the SIP client A which is behind another NAT router will fail to communication with SIP client B.

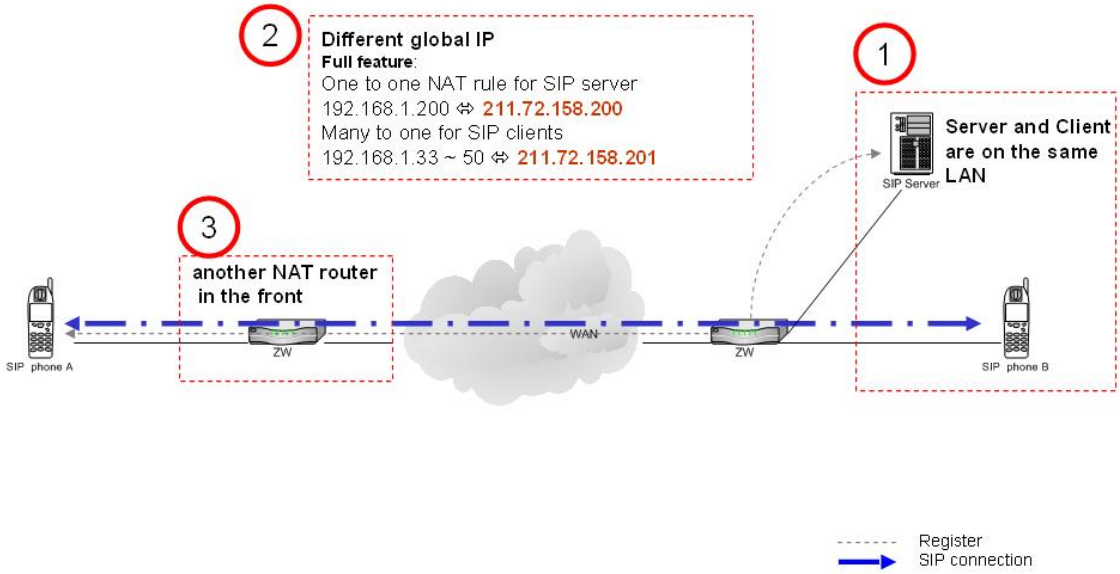


Figure 3.

(3) We do not support that SIP client sends ACK directly to a peer client.
For instance, in Figure 4, when SIP phone A want to send ACK request direct to SIP phone B, because of the limitation, this ACK request will not successfully transmit to SIP

phone B. Thus will be fail on call setup. This limitation is SIP client related issue, some SIP clients will send ACK request direct to the remote clients, some may send through proxy server.

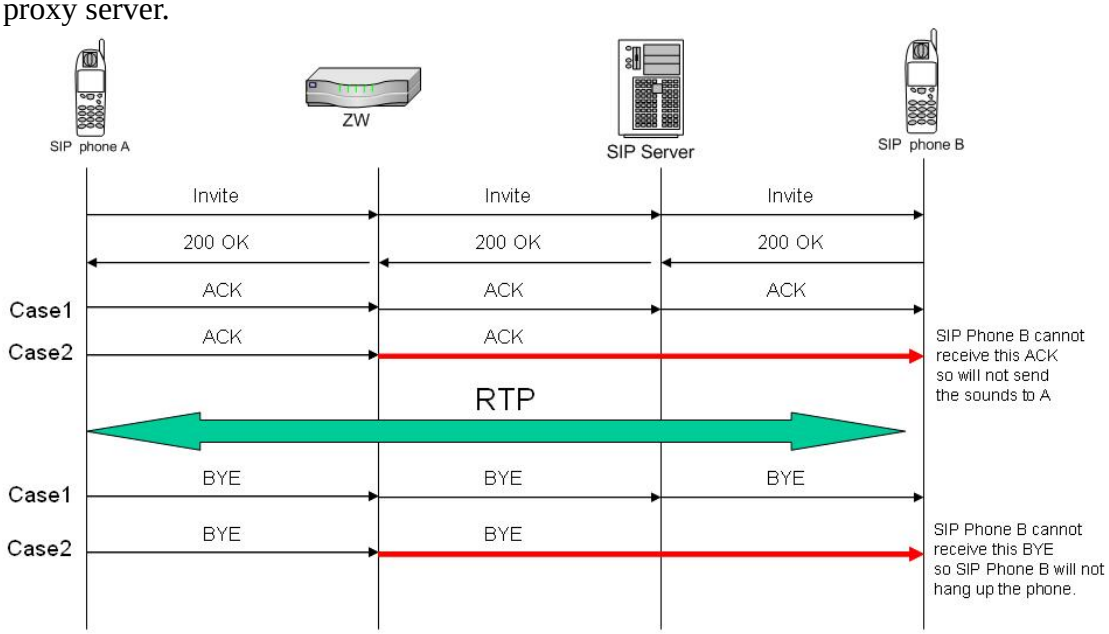


Figure 4.

(4) We do not support multiple SIP proxies in the middle of way.

We haven't implemented or take care on this kind topology (Figure 5), so the result is still unknown.

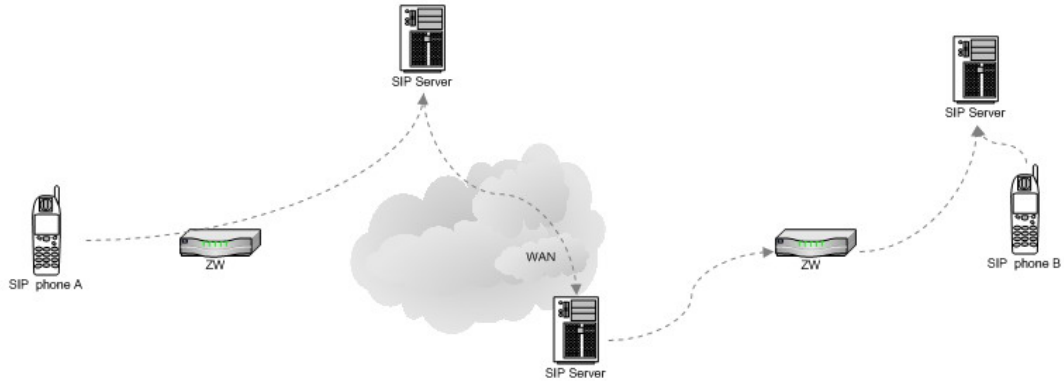


Figure 5

Annex A CI Command List

Last Updated: 2006/04/18

Command Class List Table		
System Related Command	Exit Command	Device Related Command
Ethernet Related Command	POE Related Command	PPTP Related Command
AUX Related Command	Configuration Related Command	IP Related Command
IPSec Related Command	PPP Related Command	Bandwidth Management
Firewall Related Command	Certificate Management (PKI) Command	Load Sharing Command
Bridge Related Command	myZyXEL.com Command	Anti-Spam Command
IDP Command	Anti-Virus Command	

System Related Command Home

Command				Description
sys				
	atsh			Display system information
	cbuf			
		display	[a|f|u]	display cbuf a: all f: free u: used
		cnt		cbuf static
			Display	display cbuf static
			Clear	clear cbuf static
	baud		<1..5>	change console speed
	callhist			
		display		display call history
		remove	<index>	remove entry from call history
	clear			clear the counters in GUI status menu
	countrycode		[countrycode]	set country code
	datetime		[year month date]	set/display date
	domainname			display domain name
	edit		<filename>	edit a text file
	enhanced			return OK if commands are supported for PWC purposes
	errctl		[level]	set the error control level 0:crash no save,not in debug mode (default) 1:crash no save,in debug mode 2:crash save,not in debug mode 3:crash save,in debug mode
	event			
		display		display tag flags information
		trace		display system event information
			display	display trace event
			clear <num>	clear trace event
	extraphnum			maintain extra phone numbers for outcalls
		add	<set 1-3> <1st phone num> [2nd phone num]	add extra phone numbers
		display		display extra phone numbers
		node	<num>	set all extend phone number to remote node <num>
		remove	<set 1-3>	remove extra phone numbers
		reset		reset flag and mask
	feature			display feature bit

	fid			
		display		display function id list
	firmware			display ISDN firmware type
	hostname		[hostname]	display system hostname
	iface			
		disp	[#]	display iface list
	interrupt			display interrupt status
	logs			
		category		
			access [0:none/1:log/2:alert/3:both]	record the access control logs
			attack [0:none/1:log/2:alert/3:both]	record and alert the firewall attack logs
			display	display the category setting
			error [0:none/1:log/2:alert/3:both]	record and alert the system error logs
			ipsec [0:none/1:log/2:alert/3:both]	record the access control logs
			ike [0:none/1:log/2:alert/3:both]	record the access control logs
			javablocked [0:none/1:log]	record the java etc. blocked logs
			mten [0:none/1:log]	record the system maintenance logs
			packetfilter [0:none/1:log]	record the packet filter logs
			pki [0:none/1:log/2:alert/3:both]	record the pki logs
			tcpreset [0:none/1:log]	record the tcp reset logs
			upnp [0:none/1:log]	record upnp logs
			urlblocked [0:none/1:log/2:alert/3:both]	record and alert the web blocked logs
			urlforward [0:none/1:log]	record web forward logs
		clear		clear log
		display	[access|attack|error|ipsec|ike|javablocked|mten|packetfilter|pki|tcpreset|urlblocked|urlforward]	display all logs or specify category logs
		dispSvrIP		Display the IP address of email log server and syslog server
		errlog		
			clear	display log error
			disp	clear log error
			online	turn on/off error log online display
		load		load the log setting buffer
		mail		
			alertAddr [mail address]	send alerts to this mail address
			display	display mail setting
			logAddr [mail address]	send logs to this mail address
			schedule display	display mail schedule
			schedule hour [0-23]	hour time to send the logs
			schedule minute [0-59]	minute time to send the logs
			schedule policy [0:full/1:hourly/2:daily/3:weekly/4:none]	mail schedule policy
			schedule week [0:sun/1:mon/2:tue/3:wed/4:thu/5:fri/6:sat]	weekly time to send the logs
			server [domainName/IP]	mail server to send the logs
			subject [mail subject]	mail subject
		save		save the log setting buffer
		syslog		
			active [0:no/1:yes]	active to enable unix syslog
			display	display syslog setting

			facility [Local ID(1-7)]	log the messages to different files
			server [domainName/IP]	syslog server to send the logs
		updateSvrIP	<minute>	If there is one parameter <minute>, it will change the dns timer task timeout value. Otherwise, do dns resolve to find email log server and syslog server IP.
		consolidate		
			switch <0:on|1:off>	active to enable log consolidation
			period	consolidation period (seconds)
			msglist	display the consolidated messages
		switch		
			bmlog <0:no|1:yes>	active to enable broadcast/multicast log
			display	display switch setting
			trilog <0:no|1:yes>	active to enable triangle route log
		lastAlert	<index>	display the last #index alert in the centralized log.
	mbuf			
		link	link	list system mbuf link
		pool	<id> [type][num]	list system mbuf pool
		status		display system mbuf status
		disp	<address>[1|0]	display mbuf status
		cnt		
			disp	display system mbuf count
			clear	clear system mbuf count
		debug	[on|off]	
	md5		<string>	This command will hash the string by MD5. Tha maximum length of the string is 64.
	memwrite		<address> <len> [data list ...]	write some data to memory at <address>
	memutil			
		usage		display memory allocate and heap status
		mqueue	<address> <len>	display memory queues
		mcell	mid [f|u]	display memory cells by given ID
		msecs	[a|f|u]	display memory sections
		mtstart	<n-mcell>	start memory test
		mtstop		stop memory test
		mtalloc	<size> [n-mcell]	allocate memory for testing
		mtfree	<start-idx> [end-idx]	free the test memory
	mode	<router/bridge>		switch router and bridge mode
	model			display server model name
	mwan			
		load		Load the multiple wan common data to the memory
		mode	<0:Active/Passive|1:Active/Active>	Change the Multiple WAN operation mode.
		Save		Save the configuration
		Disp		Display the data
	ProbeType		[icmp | arp]	DHCP server probing type
	proc			
		display		Display all process information. State: process state. Pri: priority, a_usg: accumulated cpu usage, p_usg: profiling cpi usage.(take count after do clear command). Size: (lowest available stack size)/(total stack size).
		stack	[tag]	display process's stack by a give TAG
		pstatus		display process's status by a give TAG

		clear		Restart cpu usage measurement. (Result will be in p_usg column from display command.
	pwc			sends information to PWC via telnet
	pwdHash		<on | off> [newPassword] [oldPassword]	The password saved in ROM file can be hashed by MD5.
	queue			
		display	[a|f|u] [start#] [end#]	display queue by given status and range numbers
		ndisp	[qid]	display a queue by a given number
	quit			quit CI command mode
	reboot		[code]	reboot system code = 0 cold boot, = 1 immediately boot = 2 bootModule debug mode
	reslog			
		disp		display resources trace
		clear		clear resources trace
	rn			
		load	<entry no.>	load remote node information
		disp	<entry no.>(0:working buffer)	display remote node information
		nat	<none|sua|full_feature>	config remote node nat
		nailup	<no|yes>	config remote node nailup
		mtu	<value>	set remote node mtu
		accessblock	[1|0]	Enable/disable block specific remote note packet.
		trigger	[on|off]	
		save	[entry no.]	save remote node information
	smt			not support in this product
	stdio		[second]	change terminal timeout value
	time		[hour [min [sec]]]	display/set system time
	timer			
		disp		display timer cell
	tos			
		display		display all runtime TOS
		listPerHost		display all host session count
		debug	[on|off]	turn on or off TOS debug message
		sessPerHost	<number>	configure session per host value
		timeout		
			display	display all TOS timeout information
			icmp <idle timeout>	set idle timeout value
			igmp <idle timeout>	set idle timeout value
			tcpsyn <idle timeout>	set idle timeout value
			tcp <idle timeout>	set idle timeout value
			tcpfin <idle timeout>	set idle timeout value
			udp <idle timeout>	set idle timeout value
			gre <idle timeout>	set idle timeout value
			esp <idle timeout>	set idle timeout value
			ah <idle timeout>	set idle timeout value
			other <idle timeout>	set idle timeout value
		tempTOSDisplay		display temporal TOS records.
		tempTOSTimeout	[timeout value]	set/display temporal timeout value
	trcdisp	parse, brief, disp		monitor packets
	trclog			

		switch	[on|off]	set system trace log
		online	[on|off]	set on/off trace log online
		level	[level]	set trace level of trace log #:1-10
		type	<bitmap>	set trace type of trace log
		disp		display trace log
		clear		clear trace
		call		display call event
		encapmask	[mask]	set/display tracelog encapsulation mask
	trcpacket			
		create	<entry> <size>	create packet trace buffer
		destroy		packet trace related commands
		channel	<name> [none|incoming|outgoing|bothway]	<channel name>=enet0,sdsl00, fr0 set packet trace direction for a given channel
		string		enable smt trace log
		switch	[on|off]	turn on/off the packet trace
		disp		display packet trace
		udp		send packet trace to other system
			switch [on|off]	set tracepacket upd switch
			addr <addr>	send trace packet to remote udp address
			port <port>	set tracepacket udp port
		parse	[[start_idx], end_idx]	parse packet content
		brief		display packet content briefly
	syslog			
		server	[destIP]	set syslog server IP address
		facility	<FacilityNo>	set syslog facility
		type	[type]	set/display syslog type flag
		mode	[on|off]	set syslog mode
	version			display RAS code and driver version
	view		<filename>	view a text file
	wdog			
		switch	[on|off]	set on/off wdog
		cnt	[value]	display watchdog counts value: 0-34463
	romreset			restore default romfile
	pwderrtm		[minute]	Set or display the password error blocking timeout value.
	mrd			
		atwe	<mac> [country code] [debug flag] [featurebit]	configure mac, country code, debug flag, featurebit in the boot module
		atse		generate the engeneering debug flag password seed
		aten	<password>	enter the engeneering debug flag password
		atfl	<0:1>	set engeneering debug flag
		atsh		show mrd setting
	server			
		access	<telnet|ftp|web|icmp|snmp|dns> <value>	set server access type
		load		load server information
		disp		display server information
		port	<telnet|ftp|web|snmp> <port>	set server port
		save		save server information
		secureip	<telnet|ftp|web|icmp|snmp|dns> <ip>	set server secure ip addr
		certificate	<https|ssh> [certificate name]	set server certificate
		auth_client	<https> [on|off]	specifies whether the server authenticates the

				client
	fwnotify			
		load		load fwnotify entry from spt
		save		save fwnotify entry to spt
		url	<url>	set fwnotify url
		days	<days>	set fwnotify days
		active	<flag>	turn on/off fwnotify flag
		disp		display firmware notify information
		check		check firmware notify event
		debug	<flag>	turn on/off firmware notify debug flag
	spt			
		dump		dump spt raw data
			root	dump spt root data
			rn	dump spt remote node data
			user	dump spt user data
			slot	dump spt slot data
		set	<offset> <len> <value...>	set spt value in memory address
		save		save spt data
		size		display spt record size
		clear		clear spt data
	cmgr			
		trace		
			disp <ch-name>	show the connection trace of this channel
			clear <ch-name>	clear the connection trace of this channel
		data	<ch-name>	show channel connection related data
		cnt	<ch-name>	show channel connection related counter
	socket			display system socket information
	filter			
		clear		clear filter statistic counter
		disp		display filter statistic counters
		sw	[on|off]	set filter status switch
		rule	<iface>	display iface filter flag
		set	<set>	display filter rule
		addNetBios		add netbios filter
		removeNetBios		remove netbios filter
		netbios		
			disp	display netbios filter status
			config <0:Between LAN and WAN, 1: Between LAN and DMZ, 2: Between WAN and DMZ, 3:IPSec passthrough, 4:Trigger Dial> <on|off>	config netbios filter
		blockbc	[on|off]	set/display broadcast filter mode
	roadrunner			
		debug	<level>	enable/disable roadrunner service 0: diable <default> 1: enable
		display	<iface name>	display roadrunner information iface-name: enif0, wanif0
		restart	<iface name>	restart roadrunner
		logout	<iface name>	logout roadrunner
		set	<iface name>	set roadrunner
	ddns			
		debug	<level>	enable/disable ddns service
		display	<iface name>	display ddns information

		restart	<iface name>		restart ddns
		logout	<iface name>		logout ddns
	cpu				
		display			display CPU utilization
	upnp				
		active	[0:no/1:yes]		Activate or deactivate the saved upnp settings
		config	[0:deny/1:permit]		Allow users to make configuration changes. through UPnP
		display			display upnp information
		firewall	[0:deny/1:pass]		Allow UPnP to pass through Firewall.
		load			save upnp information
		reserve	[0:no/1:yes]		Reserve UPnP NAT rules in flash after system bootup.
		save			save upnp information
	threatReport				
		idp			
			active		Active/inactive threat report functionality for IDP
			dump		Dump all entry in memory
			flush		Flush all data and update time stamp
			summary		Show summary
			statistic	id	Show top N statistic records for id field
			statistic	src	Show top N statistic records for source IP field
			statistic	dst	Show top N statistic records for destination IP field
		av			
			active		Active/inactive URM report functionality for AV
			dump		Dump all entry in memory
			flush		Flush all data and update time stamp
			summary		Show summary
			statistic	id	Show top N statistic records for id field
			statistic	src	Show top N statistic records for source IP field
			statistic	dst	Show top N statistic records for destination IP field
		as			
			active		Active/inactive threat report functionality for AS
			dump		Dump all entry in memory
			flush		Flush all data and update time stamp
			summary		Show summary
			statistic	sender	Show top N statistic records for sender mail address field
			statistic	src	Show top N statistic records for source IP field
			statistic	score	Show score distribution for AS
	atmu				Show multiboot client version

Exit Command Home

Command				Description
exit				exit smt menu

Device Related Command Home

Command				Description
dev				

	channel			
		name	<all|use>	list channel name
		drop	<channel_name>	drop channel
		disp	<channel_name> [level]	display channel
		threshold	<channel_name> [number]	set channel threshold
	dial		<node#>	dial to remote node

Ethernet Related Command Home

Command				Description
ether				
	config			display LAN configuration information
	driver			
		cnt		
			disp <name>	display ether driver counters
			clear <name>	clear ether driver counters
		iface	<ch_name> <num>	send driver iface
		ioctl	<ch_name>	Useless in this stage.
		mac	<ch_name> <mac_addr>	Set LAN Mac address
		reg	<ch_name>	display LAN hardware related registers
		rxmod	<ch_name> <mode>	set LAN receive mode. mode: 1: turn off receiving 2: receive only packets of this interface 3: mode 2+ broadcast 5: mode 2 + multicast 6: all packets
		status	<ch_name>	see LAN status
		init	<ch_name>	initialize LAN
	version			see ethernet device type
	pkttest			
		disp		
			packet <level>	set ether test packet display level
			event <ch> [on|off]	turn on/off ether test event display
		sap	[ch_name]	send sap packet
		arp	<ch_name> <ip-addr>	send arp packet to ip-addr
	test		<ch_id> <test_id> [arg3] [arg4]	do LAN test
	ipmul		<num>	only receive ip multicast and broadcast packet
	pncconfig		<ch_name>	do pnc config
	mac		<src_ch> <dest_ch> <ipaddr>	fake mac address
	edit			
		load	<ether no.>	load ether data from spt
		mtu	<value>	set ether data mtu
		speed	<speed>	set ether data speed
		save		save ether data to spt
	dynamicPort			
		dump		display the relation between physical port and channel.
		set	<port> <type>	set physical port belongs to which channel.
		spt		display channel setting stored in SPT.

POE Related Command Home

Command				Description
poe				
	debug		[on|off]	switch poe debug
	retry			

		count	[count]	set/display poe retry count
		interval	[interval]	set/display poe retry interval
	status		[ch_name]	see poe status
	master			
		promiscuous	[on|off]	provide pppoe server list to client
		easy	[on|off]	response for no service name request
	service			
		add	<service-name>	add poe service
		show		show poe service
	dial		<node>	dial a remote node
	drop		<node>	drop a pppoe call
	channel			
		enable	<channel>	enable a channel to carry pppoe traffic
		disable	<channel>	disable a pppoe channel
		show		show pppoe channel
	padt		[limit]	set/display pppoe PADT limit
	inout		<node_name>	set call direction to both
	ippool		[ip] [cnt]	set/display pppoe ippool information
	ether		[rfc|3com]	set /display pppoe ether type
	proxy	disp		Display PPPoE proxy client session table
		active	[on | off]	Turn on / off PPPoE proxy function
		debug	[on | off]	Turn on / off PPPoE proxy debug function
		time	<interval>	Set the time out interval, it's a count. Actual time is count * 5 seconds.
		init		Initialize PPPoE proxy client session table
		flush		Clear PPPoE proxy client session table

PPTP Related Command Home

Command				Description
pptp				
	debug		[on|off]	switch pptp debug flag
	dial		<rn-name>	dial a remote node
	drop		<rn-name>	drop a remote node call
	tunnel		<tunnel id>	display pptp tunnel information
	enque		[size]	set pptp max en-queued size

AUX Related Command Home

Command				Description
aux				
	atring		<device name>	Command the AT command to the device.
	clearstat		<device name>	reset channel statistics
	cnt			
		disp	<device name>	display aux counter information
		clear	<device name>	clear aux counter information
	cond			
		disp	<device name>	display aux condition information
		clear	<device name>	clear aux condition information
	config			display aux config, board, line, channel information
	data			
	drop		<device name>	disconnect
	event			
		disp		aux event trace display
		clear		aux event trace clear

	init		<device name>	initialize aux channel
	mstatus		<device name>	display modem last call status
	mtype		<device name>	display modem type
	netstat		<device name>	prints upper layer packet information
	rate		<device name>	show tx rx rate
	ringbuf			
		cmd		
			clear <device name>	clear ringbuffer
			disp <device name>	display ringbuffer
		data		
			clear	clear command ringbuffer
			disp <start> <len>	display command ringbuffer
	signal		<device name>	show aux signal
	speed		<device name> <type> [value]	display/set aux speed
	usrmdn	flag	[1|0]	Enable/disable USR modem capability.

Configuration Related Command Home

Command					Description
config					The parameters of config are listed below.
edit	firewall	active <yes|no>			Activate or deactivate the saved firewall settings
	custom-service <entry#>	name <string>			Configure selected custom-service with name = <string>
		ip-protocol < icmp | tcp | udp | tcp/udp | user-defined>			Configure IP Protocol Type for selected custom-service
		port-range <start port> <end port>			When ip-protocol = “tcp | udp | tcp/udp “. configure port range for custom-service entry #. For single port configuration, start port equals to end port.
		user-defined-ip <1~65535>			When ip-protocol = “user-defined”. Configure user defined IP protocol.
		icmp-type <0~255>			When ip-protocol = “icmp”, configure ICMP type.
		icmp-code <0~255>			When ip-protocol = “icmp”, configure ICMP code. This field is optional for ICMP.
retrieve	firewall				Retrieve current saved firewall settings
save	firewall				Save the current firewall settings
	custom-service <entry#>				Save the custom service entry specified by <entry#>
	anti-spam				Save current AntiSpam settings
	all				Save all working SPT buffer into flash.
display	firewall				Displays all the firewall settings
		set <set#>			Display current entries of a set configuration; including timeout values, name, default-permit, and number of rules in the set.
		set <set#>	rule <rule#>		Display current entries of a rule in a set.
		attack			Display all the attack alert settings in PNC
		e-mail			Display all the e-mail settings in PNC
		?			Display all the available sub commands

	custom-service				Display all configured custom services.
	custom-service <entry #>				Display custom service <entry #>
	anti-spam				Display AntiSpam settings
edit		e-mail	mail-server <mail server IP>		Edit the mail server IP to send the alert
			return-addr <e-mail address>		Edit the mail address for returning an email alert
			e-mail-to <e-mail address>		Edit the mail address to send the alert
			policy <full | hourly |daily | weekly>		Edit email schedule when log is full or per hour, day, week.
			day <sunday | monday | tuesday | wednesday | thursday | friday | saturday>		Edit the day to send the log when the email policy is set to Weekly
			hour <0~23>		Edit the hour to send the log when the email policy is set to daily or weekly
			minute <0~59>		Edit the minute to send to log when the email policy is set to daily or weekly
			Subject <mail subject>		Edit the email subject
		attack	send-alert <yes|no>		Activate or deactivate the firewall DoS attacks notification emails
			block <yes|no>		Yes: Block the traffic when exceeds the tcp-max-incomplete threshold
					No: Delete the oldest half-open session when exceeds the tcp-max-incomplete threshold
			block-minute <0~255>		Only valid when sets 'Block' to yes. The unit is minute
			minute-high <0~255>		The threshold to start to delete the old half-opened sessions to minute-low
			minute-low <0~255>		The threshold to stop deleting the old half-opened session
			max-incomplete-high <0~255>		The threshold to start to delete the old half-opened sessions to max-incomplete-low
			max-incomplete-low <0~255>		The threshold to stop deleting the half-opened session
			tcp-max-incomplete <0~255>		The threshold to start executing the block field
		set <set#>	name <desired name>		Edit the name for a set
			default-permit <forward|block>		Edit whether a packet is dropped or allowed when it does not match the default set
			icmp-timeout <seconds>		Edit the timeout for an idle ICMP session before it is terminated
			udp-idle-timeout <seconds>		Edit the timeout for an idle UDP session before it is terminated
			connection-timeout <seconds>		Edit the wait time for the SYN TCP sessions before it is terminated
			fin-wait-timeout <seconds>		Edit the wait time for FIN in concluding a TCP session before it is terminated
			tcp-idle-timeout <seconds>		Edit the timeout for an idle TCP session before it is terminated
			pnc <yes|no>		PNC is allowed when 'yes' is set even there is a

					rule to block PNC
			log <yes|no>		Switch on/off sending the log for matching the default permit
			logone <yes|no>		Switch on/off for one packet that create just one log message.
			rule <rule#>	permit <forward|block>	Edit whether a packet is dropped or allowed when it matches this rule
				active <yes|no>	Edit whether a rule is enabled or not
				protocol <0~255>	Edit the protocol number for a rule. 1=ICMP, 6=TCP, 17=UDP...
				log <none|match|not-match|both>	Sending a log for a rule when the packet none|matches|not match|both the rule
				alert <yes|no>	Activate or deactivate the notification when a DoS attack occurs or there is a violation of any alert settings. In case of such instances, the function will send an email to the SMTP destination address and log an alert.
				srcaddr-single <ip address>	Select and edit a source address of a packet which complies to this rule
				srcaddr-subnet <ip address> <subnet mask>	Select and edit a source address and subnet mask if a packet which complies to this rule.
				srcaddr-range <start ip address> <end ip address>	Select and edit a source address range of a packet which complies to this rule.
				destaddr-single <ip address>	Select and edit a destination address of a packet which complies to this rule
				destaddr-subnet <ip address> <subnet mask>	Select and edit a destination address and subnet mask if a packet which complies to this rule.
				destaddr-range <start ip address> <end ip address>	Select and edit a destination address range of a packet which complies to this rule.
				tcp destport-single <port#>	Select and edit the destination port of a packet which comply to this rule. For non-consecutive port numbers, the user may repeat this command line to enter the multiple port numbers.
				tcp destport-range <start	Select and edit a destination port range of a packet which comply to this rule.

				port#> <end port#>	
				udp destport-single <port#>	Select and edit the destination port of a packet which comply to this rule. For non-consecutive port numbers, users may repeat this command line to enter the multiple port numbers.
				udp destport-range <start port#> <end port#>	Select and edit a destination port range of a packet which comply to this rule.
				desport-custom <desired custom port name>	Type in the desired custom port name
				custom-ip <desired custom service name>	Type in the desired User Defined IP Protocol custom service.
				custom-icmp <desired custom service name>	Type in the desired ICMP custom service
	anti-spam				
		action	<0|1>		Set the action for Spam Mail: add tag(0) or discard mail(1).
		markString	<spam tag>		Set the Spam tag string. This tag will add to the subject of spam mail.
		externDB	<0|1>		Enable(1)/Disable(0) External Database Query.
		query	<0|1>		Set the action for no spam score: add tag(0) ot discard mail(1).
		queryString	<no spam score tag>		Set the tag string for no spam score. This tag will add to the subject of spam mail.
		threshold	<threshold>		Set the spam score threshold. If the spam score is higher than this threshold, this mail will be judge as spam mail.
		switch	<0|1>		Enable(1)/Disable(0) AntiSpam function.
		whiteRule	<0|1>		Enable(1)/Disable(0) AntiSpam White Rule Filter.
		blackRule	<0|1>		Enable(1)/Disable(0) AntiSpam Black Rule Filter.
		phishingString	<Phishing tag>		Set the phishing tag string. This tag will add to the subject of spam mail.
		rule	<rule number>	ip <index> active <0|1> address <ip address> netmask <netmask>	Set the While(1)/Black(2) Rule IP Filter. The <index> is start from 0.
				email <index> active <0|1> data <email	Set the While(1)/Black(2) Rule Email Filter. The <index> is start from 0.

				address>	
				mime <index> active <0|1> header <MIME Header> value <MIME Value>	Set the While(1)/Black(2) Rule MIME Filter. The <index> is start from 0.
delete	firewall	e-mail			Remove all email alert settings
		attack			Reset all alert settings to defaults
		set <set#>			Remove a specified set from the firewall configuration
		set <set#>	rule <rule#>		Remove a specified rule in a set from the firewall configuration
	anti-spam	blackRule			Remove the AntiSpam Black Rule.
		whiteRule			Remove the AntiSpam White Rule.
insert	firewall	e-mail			Insert email alert settings
		attack			Insert attack alert settings
		set <set#>			Insert a specified rule set to the firewall configuration
		set <set#>	rule <rule#>		Insert a specified rule in a set to the firewall configuration
cli					Display the choices of command list.
debug	<1|0>				Turn on|off trace for firewall debug information.

IP Related Command Home

Command				Description
ip				
	address		[addr]	display host ip address
	alias		<iface>	alias iface
	aliasdis		<0|1>	disable alias
	alg			
		disp		Show ALG enable disable status
		enable	<ALG_FTP|ALG_H323|ALG_SIP>	Enable ALG command
		disable	<ALG_FTP|ALG_H323|ALG_SIP>	Disable ALG command
		siptimeout	<timeout in second> or 0 for no timeout	Configure SIP timeout command
		ftpPortNum	[port number]	Support a different port number on FTP ALG.
	arp			
		status	<iface>	display ip arp status
		add	<hostid> ether <ether addr>	add arp information
		resolve	<hostid>	resolve ip-addr
		replydif	[<0:No|1:yes>]	reply different inteface ip-addr's arp request
		drop	<hostid> [hardware]	drop arp
		flush		flush arp table
		publish		add proxy arp
		period	< value: 30~3000>	Set arp period.
		attpret	<on|off>	Switch receive APR from the different network or not.
		force	<on|off>	Switch the time out function of the APR.
		gratuitous	<on|off>	Switch the duplicate IP address detection based on Gratuitous ARP

		ackGratuitous	active [yes|no]	Let DUT accept gratuitous ARP request.
			forceUpdate [on|off]	Update the exist MAC mapping to new one.
	dhcp		<iface>	
		client		
			release	release DHCP client IP
			renew	renew DHCP client IP
		mode	<server|relay|none|client>	set dhcp mode
		relay	server <serverIP>	set dicp relay server ip-addr
		reset		reset dhcp table
		server		
			probecount <num>	set dhcp probe count
			dnsserver <IP1> [IP2] [IP3]	set dns server ip-addr
			winsserver <winsIP1> [<winsIP2>]	set wins server ip-addr
			gateway <gatewayIP>	set gateway
			hostname <hostname>	set hostname
			initialize	fills in DHCP parameters and initializes (for PWC purposes)
			leasetime <period>	set dhcp leasetime
			netmask <netmask>	set dhcp netmask
			pool <startIP> <numIP>	set dhcp ip pool
			renewaltime <period>	set dhcp renew time
			rebindtime <period>	set dhcp rebind time
			reset	reset dhcp table
			server <serverIP>	set dhcp server ip for relay
			dnsorder [router|isp]	set dhcp dns order
			release <entry num>	release specific entry of the dhcp server pool
		status	[option]	show dhcp status
		static		
			Delete <num>|all	delete static dhcp mac table
			display	display static dhcp mac table
			update <num> <mac> <ip>	update static dhcp mac table
	dns			
		query		
			address <ipaddr> [timeout]	resolve ip-addr to name
			Debug <num>	enable dns debug value
			Name <hostname> [timeout]	resolve name to multiple IP addresses
			Status	display dns query status
			Table	display dns query table
		server	<primary> [secondary] [third]	set dns server
		stats		
			Clear	clear dns statistics
			Disp	display dns statistics
		table		display dns table
		default	<ip>	Set default DNS server
		system		
			display	display dns system information
			edita <record idx> <name> <0:FQDN|1:wildcard> <0:from ISP group|1:user defined> <isp group idx|ip address>	edit dns A record
			editns <record idx> <*|domain name> <0:from ISP|1:user defined(public)|2: user defined(private)> <isp group idx|dns	edit dns NS record

			server ip>	
			inserta <before record idx|-1:new> <name> <0:FQDN|1:wildcard> <0:from ISP group|1:user defined> <isp group idx|ip address>	insert dns A record
			insertns <before record idx|-1:new> <*|domain name> <0:from ISP|1:user defined(public)|2: user defined(private)> <isp group idx|dns server ip>	insert dns NS record
			movea <record idx> <record idx>	move dns A record
			movens <record idx> <record idx>	move dns NS record
			dela <record idx>	delete DNS A record
			delns <record idx>	delete DNS NS record
		system cache		
			disp <0:none|1:name|2:type|3:IP|4:refCnt|5:ttl> [0:increase|1:decrease]	display DNS cache table
			flush	flush DNS cache
			negaperiod <second(60 ~ 3600)>	set negative cache period
			negative <0: disable|1: enable>	enable/disable dns negative cache
			positive <0: disable|1: enable>	enable/disable dns positive cache
			ttl <second(60 ~ 3600)>	set positive cache maximum ttl
	Httpd			
		debug	[on|off]	set http debug flag
	icmp			
		echo	[on|off]	set icmp echo response flag
		data	<option>	select general data type
		status		display icmp statistic counter
		trace	[on|off]	turn on/off trace for debugging
		discovery	<iface> [on|off]	set icmp router discovery flag
	ifconfig		[iface] [ipaddr] [broadcast <addr> |mtu <value>|dynamic]	configure network interface
	ping		<hostid>	ping remote host
	route			
		status	[if]	display routing table
		add	<dest_addr|default>[/<bits>] <gateway> [<metric>]	add route
		addiface	<dest_addr|default>[/<bits>] <gateway> [<metric>]	add an entry to the routing table to iface
		drop	<host addr> [/<bits>]	drop a route
		flush		flush route table
		lookup	<addr>	find a route to the destination
		errcnt		
			disp	display routing statistic counters
			clear	clear routing statistic counters
	status			display ip statistic counters
	stroute			
		display	[rule # | buf]	display rule index or detail message in rule.
		load	<rule #>	load static route rule in buffer
		save		save rule from buffer to spt.
		config		
			name <site name>	set name for static route.
			destination <dest addr>[/<bits>]	set static route destination address and gateway.

			<gateway> [<metric>]	
			mask <IP subnet mask>	set static route subnet mask.
			gateway <IP address>	set static route gateway address.
			metric <metric #>	set static route metric number.
			private <yes|no>	set private mode.
			active <yes|no>	set static route rule enable or disable.
	adjTcp		<iface> [<mss>]	adjust the TCP mss of iface
	adjmss		[mss]	adjust all system TCP mss of iface
	udp			
		status		display udp status
	rip			
		accept	<gateway>	drop an entry from the RIP refuse list
		activate		enable rip
		merge	[on|off]	set RIP merge flag
		refuse	<gateway>	add an entry to the rip refuse list
		request	<addr> [port]	send rip request to some address and port
		reverse	[on|off]	RIP Poisoned Reverse
		status		display rip statistic counters
		trace		enable debug rip trace
		mode		
			<iface> in [mode]	set rip in mode
			<iface> out [mode]	set rip out mode
		dialin_user	[show|in|out|both|none]	show dialin user rip direction
	tcp			
		ceiling	[value]	TCP maximum round trip time
		floor	[value]	TCP minimum rtt
		irtt	[value]	TCP default init rtt
		kick	<tcb>	kick tcb
		limit	[value]	set tcp output window limit
		max-incomplete	[number]	Set the maximum number of TCP incomplete connection.
		mss	[value]	TCP input MSS
		reset	<tcb>	reset tcb
		rtt	<tcb> <value>	set round trip time for tcb
		status	[tcb] [<interval>]	display TCP statistic counters
		syndata	[on|off]	TCP syndata piggyback
		trace	[on|off]	turn on/off trace for debugging
		window	[tcb]	TCP input window size
	samenet		<iface1> [<iface2>]	display the ifaces that in the same net
	uninet		<iface>	set the iface to uninet
	telnet		<host> [port]	execute telnet clinet command
	tftp			
		support		pritn if tfpt is support
		stats		display tftp status
	traceroute		<host> [ttl] [wait] [queries]	send probes to trace route of a remote host
	xparent			
		join	<iface1> [<iface2>]	join iface2 to iface1 group
		break	<iface>	break iface to leave ipxparent group
	anitprobe		<0|1> 1:yes 0:no	set ip anti-probe flag
	forceproxy		<display|set> [on|off] [servicePort] [proxyIp] [proxyport]	enable TCP forceproxy
	ave			anti-virus enforce
	urlfilter			
		bypass	[LAN/DMZ/WAN] [ON/OFF]	Let lan to lan(for example) packet bypass

				content filter.
		enable		enable/disable url filter function
		reginfo		
			display	display urlfilter registration information
			name	set urlfilter registration name
			eMail <size>	set urlfilter registration email addr
			country <size>	set urlfilter registration country
			clearAll	clear urlfilter register information
		category		
			display	display urlfilter category
			webFeature [block/nonblock] [activex/java/cookei/webproxy]	block or unblock webfeature
			logAndBlock [log/logAndBlock]	set log only or log and block
			blockCategory [block/nonblock] [all/type(1-14)]	block or unblock type
			timeOfDay [always/hh:mm] [hh:mm]	set block time
			clearAll	clear all category information
		listUpdate		
			display	display listupdate status
			actionFlags [yes/no]	set listupdate or not
			scheduleFlag [pending]	set schedule flag
			dayFlag [pending]	set day flag
			time [pending]	set time
			clearAll	clear all listupdate information
		exemptZone		
			display	display exemptzone information
			actionFlags [type(1-3)][enable/disable]	set action flags
			add [ip1] [ip2]	add exempt range
			delete [ip1] [ip2]	delete exempt range
			reset	clear exemptzone information
		customize		
			display	display customize action flags
			actionFlags [filterList/disableAllExceptTrusted/ unblockRWFToTrusted/keywordBlo ck/fullPath/caseInsensitive/fileNam e][enable/disable]	set action flags
			logFlags [type(1-3)][enable/disable]	set log flags
			add [string] [trust/untrust/keyword]	add url string
			delete [string] [trust/untrust/keyword]	delete url string
			reset	clear all information
		logDisplay		display cyber log
		ftplist		update cyber list data
		listServerIP	<ipaddr>	set list server ip
		listServerName	<name>	set list server name
		general		
			enable	enable/disable url filter function
			display	display content filer’s general setting
			webFeature	[block/nonblock] [activex/java/cookei/webproxy]
			timeOfDay[always/hh:mm] [hh:mm]	set block time
			exemptZone display	display exemptzone information

			exemptZone actionFlags [type(1-3)][enable/disable]	set action flags
			exemptZone add [ip1] [ip2]	add exempt range
			exemptZone delete [ip1] [ip2]	delete exempt range
			exemptZone reset	clear exemptzone information
			reset	reset content filter's general setting
		webControl		
			enable	enable cbr_filter
			display	display cbr_filter's setting
			logAndBlock [log/block/both]	set log or block on matched web site
			category	set blocked categories
			serverList display	display current cbr_filter servers
			serverList refresh	refresh cbr_filter servers
			queryURL [url][Server/localCache]	query url need to block or forward according the database on server or local cache
			cache display	display the local cache entries
			cache delete [entrynum/All]	delete the local cache entries
			cache timeout [hour]	Set timeout value of cache entries
			blockonerror [log/block][on/off]	choose log or block when server is unavailable
			unratedwebsite[block|log][on|off]	hoose log or block for unrated web site
			waitingTime [sec]	set waiting time for server
			reginfo display	display the license key with cerberian
			reginfo refresh	Check whether device had been registered and write the original license key to flash
			zssw	change the zssw's URL
	tredir			
		failcount	<count>	set tredir failcount
		partner	<ipaddr>	set tredir partner
		target	<ipaddr>	set tredir target
		timeout	<timeout>	set tredir timeout
		checktime	<period>	set tredir checktime
		active	<on|off>	set tredir active
		save		save tredir information
		disp		display tredir information
		debug	<value>	set tredir debug value
	rpt			
		active	[0:lan|1:dmz][1:yes|0:no]	active report
		start	[0:lan|1:dmz]	start report
		stop	[0:lan|1:dmz]	stop report
		url	[0:lan|1:dmz] [num]	top url hit list
		ip	[0:lan|1:dmz] [num]	top ip addr list
		srv	[0:lan|1:dmz] [num]	top service port list
	dropIcmp		[0 | 1]	to drop ICMP fragment packets
	nat			
		period	[period]	set nat timer period
		port	[port]	set nat starting external port number
		checkport		verify all server tables are valid
		timeout		
			gre [timeout]	set nat gre timeout value
			iamt [timeout]	set nat iamt timeout value
			generic [timeout]	set nat generic timeout value
			reset [timeout]	set nat reset timeout value
			tcp [timeout]	set nat tcp timeout value

			tcpother [timeout]	set nat tcp other timeout value
			udp [port] <value>	set nat udp timeout value of specific port
			display	display all the timeout values
		update		create nat system information from spSysParam
		iamt	<iface>	display nat iamt information
		lookup	<rule set>	display nat lookup rule
		loopback	[on|off]	turn on/off nat loopback flag
		reset	<iface>	reset nat table of an iface
		server		
			disp	display nat server table
			load <set id>	load nat server information from ROM
			save	save nat server information to ROM
			clear <set id>	clear nat server information
			edit active <yes|no>	set nat server edit active flag
			edit svrport <start port> [end port]	set nat server server port
			edit intport <start port> [end port]	set nat server forward port
			edit remotehost <start ip> [end ip]	set nat server remote host ip
			edit leasetime [time]	set nat server lease time
			edit rulename [name]	set nat server rule name
			edit forwardip [ip]	set nat server server ip
			edit protocol [protocol id]	set nat server protocol
			edit clear	clear one rule in the set
		service		
			irc [on|off]	turn on/off irc flag
			xboxlive [on|off]	turn on/off xboxlive flag
			sip debug	enable/disable sip debug flag
			sip display	display the sip call buffer
			aol [on|off]	Turn on/off aol flag
		resetport		reset all nat server table entries
		incikeport	[on|off]	turn on/off increase ike port flag
		session	[session per host]	set nat session per host value
		deleteslot	<iface> <slot>	delete specific slot of iface
		debug		
			natTraversal [on|off]	set NAT traversal debug flag
			hash [on|off]	set NAT hash table debug flag
			session [on|off]	set NAT session debug flag
		hashtable	<enifX, X=0, 1, 2, …>	show the NAT hash table of enifX
		natTable	[enifX, X=0, 1, 2, …]	show the NAT global information
		simulation	<enifX, X=0, 1, 2, …>	for engineer debug only
		acl		
			display	display all NAT acl set and rule information
			load <set number>	load a specific acl of set number
			move <set#> <rule# from> <rule# to>	Move specific acl rule to specific position.
			save <set number>	save a specific acl of set number
		routing	[0:LAN|1:DMZ] [0:no|1:yes]	set NAT routing attributes
		historicalCHigh		Display the historical highest count of concurrent NAT sessions
		historicalHigh		Display the historical highest count of NAT sessions based on per host.
	igmp			
		debug	[level]	set igmp debug level
		forwardall	[on|off]	turn on/off igmp forward to all interfaces flag
		querier	[on|off]	turn on/off igmp stop query flag

		iface		
			<iface> grouptm <timeout>	set igmp group timeout
			<iface> interval <interval>	set igmp query interval
			<iface> join <group>	join a group on iface
			<iface> leave <group>	leave a group on iface
			<iface> query	send query on iface
			<iface> rsptime [time]	set igmp response time
			<iface> start	turn on of igmp on iface
			<iface> stop	turn off of igmp on iface
			<iface> ttl <threshold>	set ttl threshold
			<iface> v1compat [on|off]	turn on/off v1compat on iface
		robustness	<num>	set igmp robustness variable
		status		dump igmp status
	pr			
		clear		clear ip pr table counter information
		disp		display policy route set and rule information
		move		move specific policy route rule to another rule
		dispCnt		dump ip pr table counter information
		switch		turn on/off ip pr table counter flag

IPSec Related Command Home

Command				Description
ipsec				
	debug	type	<0:Disable | 1:Original on|off | 2:IKE on|off | 3: IPSec [SPI]|on|off | 4:XAUTH on|off | 5:CERT on|off | 6: All>	Turn on|off trace for IPsec debug information
		level	<0:None | 1:User | 2:Low | 3:High>	Set the debug level. Higher number means more detailed.
		display		Show debugging information, include type and level.
	route	dmz	<on|off>	After a packet is IPSec processed and will be sent to DMZ side, this switch is to control if this packet can be applied IPSec again.
		lan	<on|off>	After a packet is IPSec processed and will be sent to LAN side, this switch is to control if this packet can be applied IPSec again.
				Remark: Command available since 3.50(WA.3)
		wan	<on|off>	After a packet is IPSec processed and will be sent to WAN side, this switch is to control if this packet can be applied IPSec again.
		wan2	<on|off>	After a packet is IPSec processed and will be sent to WAN2 side, this switch is to control if this packet can be applied IPSec again.
		wlan	<on|off>	After a packet is IPSec processed and will be sent to WLAN side, this switch is to control if this packet can be applied IPSec again.
	show_runtime	sa		display runtime phase 1 and phase 2 SA information
		spd		When a dynamic rule accepts a request and a tunnel is established, a runtime SPD is created according to peer local IP address. This command is to show these runtime SPD.

		list		Display brief runtime phase 1 and phase 2 SA information
	switch	<on|off>		As long as there exists one active IPSec rule, all packets will run into IPSec process to check SPD. This switch is to control if a packet should do this. If it is turned on, even there exists active IPSec rules, packets will not run IPSec process.
	timer	chk_conn.	<0~255>	- Adjust auto-timer to check if any IPsec connection has “only outbound traffic but no inbound traffic” for certain period. If yes, system will disconnect it.
				- Interval is in minutes
				- Default is 2 minuets
				- 0 means never timeout
		update_peer	<0~255>	- Adjust auto-timer to update IPSec rules which use domain name as the secure gateway IP.
				- Interval is in minutes
				- Default is 30 minutes
				- 0 means never update
		chk_input	<0~255>	- Adjust input timer to check if any IPSec connection has no inbound traffic for a certain period. If yes, system will disconnect it.
				- Interval is in minutes
				- Default is 2 minuets
				- 0 means never timeout
	updatePeerIp			Force system to update IPSec rules which use domain name as the secure gateway IP right away.
	dial	<policy index>		Initiate IPSec rule <policy index> from ZyWALL box
	enable	<on|off>		Turn on/off IPSec feature
	ikeDisplay	<rule #>		Display IKE rule #, if no rule number assigned, this command will show current working buffer. NOTE: If working buffer is null, it will show error messages. Please ADD or EDIT an IKE rule before display.
	ikeAdd			Create a working buffer for IKE rule.
	ikeEdit	<rule #>		Edit an existing IKE rule #
	ikeSave			Save working buffer of IKE rule to romfile.
	ikeList			List all IKE rules
	ikeDelete	<rule #>		Delete IKE rule #
	ikeConfig	name	<string>	Set rule name (max length is 31)
		negotiationMode	<0:Main | 1:Aggressive>	Set negotiation mode
		natTraversal	<Yes| No>	Enable NAT traversal or not.
		multiPro	<Yes|No>	Enable multiple proposals in IKE or not
		lcIdType	<0:IP | 1:DNS | 2:Email>	Set local ID type
		lcIdContent	<string>	Set local ID content
		myIpAddr	<IP address>	Set my IP address
		peerIdType	<0:IP | 1:DNS | 2:Email>	Set peer ID type
		peerIdContent	<string>	Set peer ID content
		secureGwAddr	<IP address | Domain name>	Set secure gateway address or domain name
		authMethod	<0:PreSharedKey | 1:RSASignature | 2:preShare Key+XAUTH |	Set authentication method in phase 1 in IKE

			3:RSASignature+XAUTH>	
		preShareKey	<ASCII | 0xHEX>	Set pre shared key in phase 1 in IKE
		certificate	<certificate name>	Set certificate file if using RSA signature as authentication method.
		encryAlgo	<0:DES | 1:3DES | 2:AES>	Set encryption algorithm in phase 1 in IKE
		authAlgo	<0:MD5 | 1:SHA1>	Set authentication algorithm in phase 1 in IKE
		saLifeTime	<seconds>	Set sa life time in phase 1 in IKE
		keyGroup	<0:DH1 | 1:DH2>	Set key group in phase 1 in IKE
		xauth	type <0:Client Mode | 1:Server Mode>	Set client or server mode.
			username <name>	Set xauth user name
			password <password>	Set xauth password
			radius <username> <password>	Ser radius username and password
		ha	enable <on|off>	Enable / disable IPSec HA
			redunSecGwAddr <IP address | Domain name>	Configure redundant remote secure gateway address or domain name
			failback enable <on|off>	Enable or disable “Fail back to primary secure gateway when possible”
			failback interval <number>	Configure the check interval for fail back detection
			failover display	Display current fail over detection method
			failover dpd <on|off>	Enable / disable fail over by DPD
			failover outputIdleTime <on|off>	Enable / disable fail over by output idle timer
			failover pingCheck <on|off>	Enable / disable fail over by ping check
	ipsecDisplay	<rule #>		Display IPSec rule #, if no rule number assigned, this command will show current working buffer. NOTE: If working buffer is null, it will show error messages. Please ADD or EDIT an IPSec rule before display.
	ipsecAdd			Create a working buffer for IPSec rule.
	ipsecEdit	<rule #>		Edit IPSec rule #
	ipsecSave			Save working buffer of IPSec rule to romfile.
	ipsecList			List all IPSec rules
	ipsecDelete	<rule #>		Delete IPSec rule #
	ipsecConfig	name	<string>	Set rule name. (max length is 31)
		active	<Yes | No>	Set active or not
		saIndex	<index>	Bind to which IKE rule.
		multiPro	<Yes | No>	Enable multiple proposals in IPSec or not
		nailUp	<Yes | No>	Enable nailed-up or not
		activeProtocol	<0:AH | 1:ESP>	Set active protocol in IPSec
		encryAlgo	<0:Null | 1:DES | 2:3DES | 3:AES>	Set encryption algorithm in IPSec
		encryKeyLen	<0:128 | 1:192 | 2:256>	Set encryption key length in IPSec
		authAlgo	<0:MD5 | 1:SHA1>	Set authentication algorithm in IPSec
		saLifeTime	<seconds>	Set sa life time in IPSec
		encap	<0:Tunnel | 1:Transport>	set encapsulation in IPSec
		pfs	<0:None | 1:DH1 | 2:DH2>	set pfs in phase 2 in IPSec

		antiReplay	<Yes | No>	Set anitreplay or not
		controlPing	<Yes|No>	Enable control ping or not
		logControlPing	<Yes|No>	Enable logging control ping events or not
		controlPingAddr	<IP>	Set control ping address
		protocol	<1:ICMP | 6:TCP | 17:UDP>	Set protocol
		lcAddrType	<0:single | 1:range | 2:subnet>	Set local address type
		lcAddrStart	<IP>	Set local start address
		lcAddrEndMask	<IP>	Set local end address or mask
		lcPortStart	<port>	Set local start port
		lcPortEnd	<port>	Set local end port
		rmAddrType	<0:single | 1:range | 2:subnet>	Set remote address type
		rmAddrStart	<IP>	Set remote start address
		rmAddrEndMask	<IP>	Set remote end address or mask
		rmPortStart	<port>	Set remote start port
		rmPortEnd	<port>	Set remote end port
	policyList			List all IPSec policies
	manualDisplay	<rule #>		Display manual rule #
	manualAdd			Add manual rule
	manualEdit	<rule #>		Edit manual rule #
	manualSave			Save IPSec rules
	manualList			List all IPSec rule
	manualDelete	<rule #>		Delete IPSec rule #
	manualConfig	name	<string>	Set rule name
		active	<Yes | No>	Set active or not
		myIpAddr	<IP address>	Set my IP address
		secureGwAddr	<IP address>	Set secure gateway
		protocol	<1:ICMP | 6:TCP | 17:UDP>	Set protocol
		lcAddrType	<0:single | 1:range | 2:subnet>	Set local address type
		lcAddrStart	<IP>	Set local start address
		lcAddrEndMask	<IP>	Set local end address or mask
		lcPortStart	<port>	Set local start port
		lcPortEnd	<port>	Set local end port
		rmAddrType	<0:single | 1:range | 2:subnet>	Set remote address type
		rmAddrStart	<IP>	Set remote start address
		rmAddrEndMask	<IP>	Set remote end address or mask
		rmPortStart	<port>	Set remote start port
		rmPortEnd	<port>	Set remote end port
		activeProtocol	<0:AH | 1:ESP>	Set active protocol in manual
		ah	encap <0:Tunnel | 1:Transport>	Set encapsulation in ah in manual
			spi <decimal>	Set spi in ah in manual
			authAlgo <0:MD5 | 1:SHA1>	Set authentication algorithm in ah in manual
			authKey <string>	Set authentication key in ah in manual
		esp	encap <0:Tunnel | 1:Transport>	Set encapsulation in esp in manual
			spi <decimal>	Set spi in esp in manual
			encryAlgo <0:Null | 1:DES | 2:3DES>	Set encryption algorithm in esp in manual
			encryKey <string>	Set encryption key in esp in manual
			authAlgo <0:MD5 | 1:SHA1>	Set authentication algorithm in esp in manual
			authKey < string>	Set authentication key in esp in manual
	manualPolicyList			List all manual policy
	swSkipOverlapIp		<on|off>	- When a VPN rule with remote range overlaps with local range, the switch decides if a local to local packet should

				apply this rule. - Default value is “off” which means “no skip”.
	swFwScan	<on|off>		Enable / disable to skip firewall packet inspection for IPSec packet.
	swIdpScan	<on|off>		Enable / disable the IDP for IPSec packet.
	swAvScan	<on|off>		Enable / disable the Anti Virus for IPSec packet.
	swAsScan	<on|off>		Enable / disable the Anti Spam for IPSec packet.
	swCfScan	<on|off>		Enable / disable the Content Filter for IPSec packet.
				-
				-
				-
				-
				-
				-
				-
				-
	adjTcpMss		<off|auto|user defined value>	After a tunnel is established, system will automatically adjust TCP MSS. After all tunnels are drops, the MSS will adjust to the original value. The default value is auto.
	ha	pingRetryCnt	<value> (1~10)	Ping retry fail tolerence
		debug	<on|off|runtime|spt>	On: turn on debug message Off: turn on debug message Runtime: show runtime data structure Spt: show SPT record data
	Drop		<policy index>	Drop an active tunnel.
	swSkipPPTP		[on|off]	Enable / disable to skip PPTP packets to go in ipsec tunnel.
	initContactMode		<gateway|tunnel>	Set initial contact mode to base on tunnel or gateway. Change to tunnel mode can support multiple VPN client which located at same NAT router.
	async	active	<on|off>	Enable / disable the asynchronous mode
		utility		Crypto engine utility rate
		queue	<on|off>	Enable / disable the asynchronous queue function
		display		Asynchronous mode function status
		debug	<on|off>	Show asynchronous debug message
	swDevTri		<on|off>	Enable / disable device trigger tunnel

PPP Related Command Home

Command				Description
ppp				
	bod			
		remote	<iface>	show remote bod information
		reset		reset bod
		setremote	<iface>	set remote bod
		status	<wan_iface>	show wan port bod status
		clear	<wan_iface>	clear wan port bod data
		on		set bod flag on

		off		set bod flag off
		node	<node> <dir>	config the statistic method for remote node bod traffic data
		debug	[on|off]	show bod debug flag
		cnt		
			disp	show bod state
			clear	clear bod state
	ccp		[on|off]	set/display dial-in ccp switch
	lcp			
		acfc	[on|off]	set address/control field compression flag
		pfc	[on|off]	set protocol field compression flag
		mpin	[on|off]	set incoming call MP flag
		callback	[on|off]	set callback flag
		bacp	[on|off]	set bandwidth allocation control flag
		echo		
			retry <retry_count>	set/display retry count to send echo-request
			time <interval>	set/display time interval to send echo-request
	ipcp			
		close		close connection on ppp interface
		list	<iface>	show ipcp state
		open		open fsm link
		timeout	[value]	set timeout interval when waiting for response from remote peer
		try		
			configure [value]	set/display fsm try config
			failure [value]	set/display fsm try failure
			terminate [value]	set/display fsm try terminate
		compress	[on|off]	set compress flag
		slots	[slot_num]	set number of slots
		idcompress	[on|off]	set/display slot id compress
		address	[on|off]	set/display ip one address option
	mp			
		default		show link default flag
			rotate	set link default to rotate
			split	set link default to split
		split	[0|1]	set/display link split
		rotate	[0|1]	set/display link rotate
		sequence		set/display mp start sequence
	configure			
		ipcp		
			compress [on|off]	enable/disable compress
			slots [slot_num]	select number of slots
			idcompress [on|off]	enable/disable slot id compress
			address [on|off]	set/display ip one address option
		atcp		apple talk feature not supported anymore
		ccp		
			ascend [on|off]	set/display ascend stac flag
			history <count>	set/display stac history count
			check [argv]	set/display stac check mode
			reset <mode>	set/display stac reset mode
			pfc [on|off]	set/display pfc flag
			debug [on|off]	set/display ccp debug flag
	iface			

			<iface> ipcp	show the ipcp status of the given iface
			<iface> ipxcp	show the ipxcp status of the given iface
			<iface> atcp	
			<iface> ccp [reset|skip|flush]	show the ccp status of the given iface
			<iface> mp	show the mp status of the given iface
	show		<channel>	show the ppp channel status
	fsm			
		trace		
			break [num] [count] [flag]	set the fsm log break value
			clear	clear the fsm log data
			disp	display the fsm log data
			filter [mask] [protocol]	set the fsm log filter value
		tdata		
			filter [protocol1] [protocol2] …	set the fsm filter data
			disp	display the fsm data
			clear	clear the fsm data
		struc		dump fsm data structure
	delay		[inteval]	set the delay timer for sending first PPP packet after call answered

Firewall Related Command Home

Command					Description
sys	Firewall				
		acl			
			disp		Display specific ACL set # rule #, or all ACLs.
		active	<yes|no>		Active firewall or deactivate firewall
		cnt			
			disp		Display firewall log type and count.
			clear		Clear firewall log count.
		dynamicrule			SUPPORT_DYNAMIC_PORT
			timeout		Set dynamic ACL rule timeout value
		dos			
			smtp		Set SMTP DoS defender on/off
			display		Display SMTP DoS defender setting.
			ignore		Set if firewall ignore DoS in lan/wan1/wan2/dmz/wlan/vpn
		ignore			
			logBroadcast	<from> <to> <on|off>	Set ignore log broadcast flag. The <from> and <to> parameters include lan/wan1/wan2/dmz/wlan/vpn.
			triangle		Set if firewall ignore triangle route in lan/wan/dmz/wlan
		schedule			
			load [set # rule #]		Load firewall ACL schedule by rule.
			display		Display ACL schedule in buffer.
			save		Save buffer date and update runtime firewall ACL rule.
			week		
				monday [on/off]	Set schedule on or off by day – Monday.
				tuesday [on/off]	Set schedule on or off by day – Tuesday.
				wednesday [on/off]	Set schedule on or off by day – Wednesday.
				thursday [on/off]	Set schedule on or off by day – Thursday.

				friday [on/off]	Set schedule on or off by day – Friday.
				saturday [on/off]	Set schedule on or off by day – Saturday.
				sunday [on/off]	Set schedule on or off by day – Sunday.
				allweek [on/off]	Quick set schedule on or off by week.
			timeOfDay [always/hh:mm]		Set firewall ACL schedule block time of day.

Certificate Management (PKI) Command Home

Command				Description
certificates				
	my_cert			
		create		
			self_signed <name> <subject> [key size]	Create a self-signed local host certificate. <name> specifies a descriptive name for the generated certificate. <subject> specifies a subject name (required) and alternative name (required). The format is "subject-name-dn;{ip,dns,email}=value". If the name contains spaces, please put it in quotes. [key size] specifies the key size. It has to be an integer from 512 to 2048. The default is 1024 bits.
			request <name> <subject> [key size]	Create a certificate request and save it to the router for later manual enrollment. <name> specifies a descriptive name for the generated certification request. <subject> specifies a subject name (required) and alternative name (required). The format is "subject-name-dn;{ip,dns,email}=value". If the name contains spaces, please put it in quotes. [key size] specifies the key size. It has to be an integer from 512 to 2048. The default is 1024 bits.
			scep_enroll <name> <CA addr> <CA cert> <auth key> <subject> [key size]	Create a certificate request and enroll for a certificate immediately online using SCEP protocol. <name> specifies a descriptive name for the enrolled certificate. <CA addr> specifies the CA server address. <CA cert> specifies the name of the CA certificate. <auth key> specifies the key used for user authentication. If the key contains spaces, please put it in quotes. To leave it blank, type "". <subject> specifies a subject name (required) and alternative name (required). The format is "subject-name-dn;{ip,dns,email}=value". If the name contains spaces, please put it in quotes. [key size] specifies the key size. It has to be an integer from 512 to 2048. The default is 1024 bits.
			cmp_enroll <name> <CA addr> <CA cert> <auth key> <subject> [key size]	Create a certificate request and enroll for a certificate immediately online using CMP protocol. <name> specifies a descriptive name for the enrolled certificate. <CA addr> specifies the CA server address. <CA cert> specifies the name of the CA certificate. <auth key> specifies the id and key used for user authentication. The format is "id:key". To leave the id and key blank, type ":". <subject> specifies a subject name (required) and alternative name (required). The format is "subject-name-dn;{ip,dns,email}=value". If the name

				contains spaces, please put it in quotes. [key size] specifies the key size. It has to be an integer from 512 to 2048. The default is 1024 bits.
		import [name]		Import the PEM-encoded certificate from stdin. [name] specifies the descriptive name (optional) as which the imported certificate is to be saved. For my certificate importation to be successful, a certification request corresponding to the imported certificate must already exist on ZyWALL. After the importation, the certification request will automatically be deleted. If a descriptive name is not specified for the imported certificate, the certificate will adopt the descriptive name of the certification request.
		export <name>		Export the PEM-encoded certificate to stdout for user to copy and paste. <name> specifies the name of the certificate to be exported.
		view <name>		View the information of the specified local host certificate. <name> specifies the name of the certificate to be viewed.
		verify <name> [timeout]		Verify the certification path of the specified local host certificate. <name> specifies the name of the certificate to be verified. [timeout] specifies the timeout value in seconds (optional). The default timeout value is 20 seconds.
		delete <name>		Delete the specified local host certificate. <name> specifies the name of the certificate to be deleted.
		list		List all my certificate names and basic information.
		rename <old name> <new name>		Rename the specified my certificate. <old name> specifies the name of the certificate to be renamed. <new name> specifies the new name as which the certificate is to be saved.
		def_self_signed [name]		Set the specified self-signed certificate as the default self-signed certificate. [name] specifies the name of the certificate to be set as the default self-signed certificate. If [name] is not specified, the name of the current self-signed certificate is displayed.
		replace_factory		
	ca_trusted			
		import <name>		Import the PEM-encoded certificate from stdin. <name> specifies the name as which the imported CA certificate is to be saved.
		export <name>		Export the PEM-encoded certificate to stdout for user to copy and paste. <name> specifies the name of the certificate to be exported.
		view <name>		View the information of the specified trusted CA certificate. <name> specifies the name of the certificate to be viewed.
		verify <name> [timeout]		Verify the certification path of the specified trusted CA certificate. <name> specifies the name of the certificate to be verified. [timeout] specifies the timeout value in seconds (optional). The default timeout value is 20 seconds.
		delete <name>		Delete the specified trusted CA certificate. <name> specifies the name of the certificate to be deleted.

		list		List all trusted CA certificate names and basic information.
		rename <old name> <new name>		Rename the specified trusted CA certificate. <old name> specifies the name of the certificate to be renamed. <new name> specifies the new name as which the certificate is to be saved.
		crl_issuer <name> [on|off]		Specify whether or not the specified CA issues CRL. <name> specifies the name of the CA certificate. [on|off] specifies whether or not the CA issues CRL. If [on|off] is not specified, the current crl_issuer status of the CA.
	remote_trusted			
		import <name>		Import the PEM-encoded certificate from stdin. <name> specifies the name as which the imported remote host certificate is to be saved.
		export <name>		Export the PEM-encoded certificate to stdout for user to copy and paste. <name> specifies the name of the certificate to be exported.
		view <name>		View the information of the specified trusted remote host certificate. <name> specifies the name of the certificate to be viewed.
		verify <name> [timeout]		Verify the certification path of the specified trusted remote host certificate. <name> specifies the name of the certificate to be verified. [timeout] specifies the timeout value in seconds (optional). The default timeout value is 20 seconds.
		delete <name>		Delete the specified trusted remote host certificate. <name> specifies the name of the certificate to be deleted.
		list		List all trusted remote host certificate names and basic information.
		rename <old name> <new name>		Rename the specified trusted remote host certificate. <old name> specifies the name of the certificate to be renamed. <new name> specifies the new name as which the certificate is to be saved.
	dir_service			
		add <name> <addr[:port]> [login:pswd]		Add a new directory service. <name> specifies a descriptive name as which the added directory server is to be saved. <addr[:port]> specifies the server address (required) and port (optional). The format is "server-address[:port]". The default port is 389. [login:pswd] specifies the login name and password, if required. The format is "[login:password]".
		delete <name>		Delete the specified directory service. <name> specifies the name of the directory server to be deleted.
		view <name>		View the specified directory service. <name> specifies the name of the directory server to be viewed.
		edit <name> <addr[:port]> [login:pswd]		Edit the specified directory service. <name> specifies the name of the directory server to be edited. <addr[:port]> specifies the server address (required) and port (optional). The format is "server-address[:port]". The default port is 389. [login:pswd] specifies the login name and password, if required. The format is "[login:password]".
		list		List all directory service names and basic information.
		rename <old name> <new		Rename the specified directory service. <old name> specifies the name of the directory server to be renamed.

		name>		<new name> specifies the new name as which the directory server is to be saved.
	cert_manager			
		reinit		Reinitialize the certificate manager.

Bandwidth management Related Command Home

Command						Description
bm						
	interface	lan	enable	<bandwidth xxx>		Enable bandwidth management in LAN with bandwidth xxx bps. If the user doesn't set the bandwidth, the default value is 100Mbps.
				<wrr|prr>		Select fairness-based(WRR) or priority-based(PRR) mechanism. the default value is fairness-based.
				<efficient>		Enable work-conserving feature.
			disable			Disable bandwidth management in LAN
		wan	enable	<bandwidth xxx>		Enable bandwidth management in WAN with bandwidth xxx bps. If the user doesn't set the bandwidth, the default value is 100Mbps.
				<wrr|prr>		Select fairness-based(WRR) or priority-based(PRR) mechanism. the default value is fairness-based.
				<efficient>		Enable work-conserving feature.
			disable			Disable bandwidth management in WAN
		dmz	enable	<bandwidth xxx>		Enable bandwidth management in DMZ with bandwidth xxx bps. If the user doesn't set the bandwidth, the default value is 100Mbps.
				<wrr|prr>		Select fairness-based(WRR) or priority-based(PRR) mechanism. the default value is fairness-based.
				<efficient>		Enable work-conserving feature.
			disable			Disable bandwidth management in DMZ
		wlan	enable	<bandwidth xxx>		Enable bandwidth management in WLAN with bandwidth xxx bps. If the user doesn't set the bandwidth, the default value is 100Mbps.
				<wrr|prr>		Select fairness-based(WRR) or priority-based(PRR) mechanism. the default value is fairness-based.
				<efficient>		Enable work-conserving feature.
			disable			Disable bandwidth management in WLAN
	class	lan	add #	bandwidth xxx	<name xxx>	Add a class with bandwidth xxx bps in LAN. The name is for users' information.
					<priority x>	Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The default value is 3.
					<borrow on|off>	The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The default value is off.
			mod #	<bandwidth xxx>		Modify the parameters of the class in LAN. The bandwidth is unchanged if the user doesn't set a new value.

				<name xxx>		Set the class' name.
				<priority x>		Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The priority is unchanged if the user doesn't set a new value.
				<borrow on|off>		The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The borrow is unchanged if the user doesn't set a new value.
			del #			Delete the class # and its filter and all its children class and their filters in LAN.
		wan	add #	bandwidth xxx	<name xxx>	Add a class with bandwidth xxx bps in WAN. The name is for users' information.
					<priority x>	Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The default value is 3.
					<borrow on|off>	The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The default value is off.
			mod #	<bandwidth xxx>		Modify the parameters of the class in WAN. The bandwidth is unchanged if the user doesn't set a new value.
				<name xxx>		Set the class' name.
				<priority x>		Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The priority is unchanged if the user doesn't set a new value.
				<borrow on|off>		The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The borrow is unchanged if the user doesn't set a new value.
			del #			Delete the class # and its filter and all its children class and their filters in WAN.
		dmz	add #	bandwidth xxx	<name xxx>	Add a class with bandwidth xxx bps in DMZ. The name is for users' information.
					<priority x>	Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The default value is 3.
					<borrow on|off>	The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The default value is off.
			mod #	<bandwidth xxx>		Modify the parameters of the class in DMZ. The bandwidth is unchanged if the user doesn't set a new value.
				<name xxx>		Set the class' name.
				<priority x>		Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The priority is unchanged if the user doesn't set a new value.
				<borrow on|off>		The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The borrow is unchanged if the user doesn't set a new value.
			del #			Delete the class # and its filter and all its children class and their filters in DMZ.
		wlan	add #	bandwidth xxx	<name xxx>	Add a class with bandwidth xxx bps in WLAN. The name is for users' information.
					<priority x>	Set the class' priority. The range is between 0

						(the lowest) to 7 (the highest). The default value is 3.
					<borrow on|off>	The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The default value is off.
			mod #	<bandwidth xxx>		Modify the parameters of the class in WLAN. The bandwidth is unchanged if the user doesn't set a new value.
				<name xxx>		Set the class' name.
				<priority x>		Set the class' priority. The range is between 0 (the lowest) to 7 (the highest). The priority is unchanged if the user doesn't set a new value.
				<borrow on|off>		The class can borrow bandwidth from its parent class when the borrow is set on, and vice versa. The borrow is unchanged if the user doesn't set a new value.
			del #			Delete the class # and its filter and all its children class and their filters in WLAN.
	filter	lan	add #	Daddr <mask Dmask> Dport Saddr <mask Smask> Sport protocol		Add a filter for class # in LAN. The filter contains destination address (netmask), destination port, source address (netmask), source port and protocol. You may set the value as 0 if you do not care the item.
			del #			Delete a filter which belongs to class # in LAN.
		wan	add #	Daddr <mask Dmask> Dport Saddr <mask Smask> Sport protocol		Add a filter for class # in WAN. The filter contains destination address (netmask), destination port, source address (netmask), source port and protocol. You may set the value as 0 if you do not care the item.
			del #			Delete a filter which belongs to class # in WAN.
		dmz	add #	Daddr <mask Dmask> Dport Saddr <mask Smask> Sport protocol		Add a filter for class # in DMZ. The filter contains destination address (netmask), destination port, source address (netmask), source port and protocol. You may set the value as 0 if you do not care the item.
			del #			Delete a filter which belongs to class # in DMZ.
		wlan	add #	Daddr <mask Dmask> Dport Saddr <mask Smask> Sport protocol		Add a filter for class # in WLAN. The filter contains destination address (netmask), destination port, source address (netmask), source port and protocol. You may set the value as 0 if you do not care the item.
			del #			Delete a filter which belongs to class # in WLAN.
	show	interface	lan			Show the interface settings of LAN
			wan			Show the interface settings of WAN
			dmz			Show the interface settings of DMZ
			wlan			Show the interface settings of WLAN
		class	lan			Show the classes settings of LAN
			wan			Show the classes settings of WAN
			dmz			Show the classes settings of DMZ
			wlan			Show the classes settings of WLAN
		filter	lan			Show the filters settings of LAN
			wan			Show the filters settings of WAN
			dmz			Show the filters settings of DMZ

			wlan			Show the filters settings of WLAN
		statistics	lan			Show the statistics of the classes in LAN
			wan			Show the statistics of the classes in WAN
			dmz			Show the statistics of the classes in DMZ
			wlan			Show the statistics of the classes in WLAN
	monitor	lan	<#>			Monitor the bandwidth of class # in LAN. If the class is not specific, all the classes in LAN will be monitored. The first time you key the command will set it on; the second time you will set it off, and so on.
		wan	<#>			Monitor the bandwidth of class # in WAN. If the class is not specific, all the classes in WAN will be monitored. The first time you key the command will set it on; the second time you will set it off, and so on.
		dmz	<#>			Monitor the bandwidth of class # in DMZ. If the class is not specific, all the classes in DMZ will be monitored. The first time you key the command will set it on; the second time you will set it off, and so on.
		wlan	<#>			Monitor the bandwidth of class # in WLAN. If the class is not specific, all the classes in WLAN will be monitored. The first time you key the command will set it on; the second time you will set it off, and so on.
	moveFilter	<channName>	<from>	<to>		User can move BWM filter order via this command. <channName>: lan, wan/wan1, dmz, wan2, wlan <from>: filter index <to>: filter index
	config	save				Save the configuration.
		load				Load the configuration.
		clear				Clear the configuration.
	vpnTraffic			<on|off>		Change BWM classifier do classify based on inner protocol header or IPSec header.
	packetBased			<on|off>		Change BWM classifier based on stream based or packet based

Load Sharing Command [Home]

Command				Description
ls				
	band	<up|down>	<WAN1 bandwidth+WAN2 bandwidth>	It is used to configure the bandwidth parameters. The CI format is ls band <method(up, down)|WAN1 loading bandwidth |WAN2 bandwidth. Ex: “ls band up 100 200” will configure the Load Sharing function dispatch the loading between WAN1 and WAN2 with 100K and 200K upstream loading.
	wrr		<Weight of WAN1> + <Weight of WAN2>	It is used to configure the weight parameters. The CI

				format is ls wrr <Weight of WAN1> + <Weight of WAN2>. The valid numver of weight is 0~10 Ex: “ls wrr 10 5” will configure the weight of the WAN1 to be 10, weight of the WAN2 to be 5.
	spillover		< upper bandwidth of primary WAN >	It is used to configure the spillover upper bandwidth of primary WAN. Ex: “ls spillover 100”, the router will send the traffic to secondary WAN when the primary WAN bandwidth exceeds 100Kbps.
	mode		<1:Least Load First|2:WRR|3:Spillover|255:None>	Change the dispatch mode. 1 is for dispatch packets by Dynamic Load Balancing, 2 is for dispatch packets by WRR, 3 is dispatch packets by Spillover. And 255 is for disable the Load Sharing function.
	timeframe		<10~600>	Change the Time Frame number. The valid number of it is 10~600
	disp			Display the Load Sharing configuration data
	debug			Debug CI commands
		online	<on|off>	To toggle the debug message on or off. This command is useful for debugging.

Bridge Related Command Home

Command				Description
bridge				
	mode		<1/0> (enable/disable)	turn on/off (1/0) LAN promiscious mode
	blt			related to bridge local table
		disp	<channel>	display blt data
		reset	<channel>	reset blt data
		traffic		display local LAN traffic table
		monitor	[on|off]	turn on/off traffice monotor. Default is off.
		time	<sec>	set blt re-init interval
	brt			related to bridge route table
		disp	[id]	display brt data
		reset	[id]	reset brt data
	cnt			related to bridge routing statistic table
		disp		display bridge route counter
		clear		clear bridge route counter
	Iface			Related to “bridge mode” access interface
		active	<yes/no>	Active bridge mode iface or not
		address	[ip]	Remote access IP address
		dns1	[ip]	First DNS server
		dns2	[ip]	Second DNS server
		dns3	[ip]	Third DNS server
		mask	[network mask]	Network mask
		gateway	[gateway ip]	Network gateway
		display		Display whole interface information
	Stat			related to bridge packet statistic table

		disp		display bridge route packet counter
		clear		clear bridge route packet counter
	Disp			display bridge source table
	fcs		<BriFcsCtl>	set bridge fcs control flag
	rstp			
		bridge		
			enable	enable this device RSTP function
			disable	disable this device RSTP function
			priority [pirority]	set RSTP pirority
			maxAge [max age]	set RSTP max age
			helloTime [hello time]	set hello time
			forwardDelay [forwarding delay]	set forwarding delay
			version <STP:0|RSTP:2>	switch STP or RSTP
		port		
			enable <Port_NO>	enable RSTP on this port
			disable <Port_NO>	disable RSTP on this port
			pathCost <Port_NO> [path cost]	set path cost on this port
			pirority <Port_NO> [pirority]	set pirority on this port
			edgePort <Port_NO> <True:1|False:0>	set edge or non-edge on this port
			p2pLink <Port_NO> <Auto:2|True:1|False:0>	set per to per link on this port
			mcheck <Port_NO>	set migrate check on this port
		disp		display RSTP information
		trace		turn on debug/trace message
		state		display RSTP information

myZyXEL.com Command Home

Command				Description
sys				
	myZyxelCom			
		checkUserName	<username>	Check the username exists or not
		register	<username> <password> <email> <countryCode>	Inout the registration information, include username, password, email, and country code.
		trialService	<service>, 1 : CF, 2 : 3in1, 3 : CF + 3in1	Input the service that to be tried.
		serviceUpgrade	<licence key>	Inout license key that you want to let service from trial to standard
		serviceRefresh	NULL	Refresh the myZyXEL.com service status
		display	NULL	Display all myZyXEL.com setting
		serviceDisplay	NULL	Display all service status, include expired day.

IDP Command Home

Command					Description
idp					IDP CI commands
	display				Display the enable setting and the protected interface setting
	load				Load the enable setting and the protected interface setting
	config				Config the enable setting and the protected interface setting
		enable	<on|off>		Config the enable setting.
		lan-lan	<on|off>		Config the protected interface setting.

		lan-wan	<on|off>		Config the protected interface setting.
		lan-dmz	<on|off>		Config the protected interface setting.
		lan-wan2	<on|off>		Config the protected interface setting.
		lan-wlan	<on|off>		Config the protected interface setting.
		wan-lan	<on|off>		Config the protected interface setting.
		wan-wan	<on|off>		Config the protected interface setting.
		wan-dmz	<on|off>		Config the protected interface setting.
		wan-wan2	<on|off>		Config the protected interface setting.
		wan-wlan	<on|off>		Config the protected interface setting.
		dmz-lan	<on|off>		Config the protected interface setting.
		dmz-wan	<on|off>		Config the protected interface setting.
		dmz-dmz	<on|off>		Config the protected interface setting.
		dmz-wan2	<on|off>		Config the protected interface setting.
		dmz-wlan	<on|off>		Config the protected interface setting.
		wan2-lan	<on|off>		Config the protected interface setting.
		wan2-wan	<on|off>		Config the protected interface setting.
		wan2-dmz	<on|off>		Config the protected interface setting.
		wan2-wan2	<on|off>		Config the protected interface setting.
		wan2-wlan	<on|off>		Config the protected interface setting.
		wlan-lan	<on|off>		Config the protected interface setting.
		wlan-wan	<on|off>		Config the protected interface setting.
		wlan-dmz	<on|off>		Config the protected interface setting.
		wlan-wan2	<on|off>		Config the protected interface setting.
		wlan-wlan	<on|off>		Config the protected interface setting.
	save				Save the enable setting and the protected interface setting
	tune				The tune command for IDP/Anti-Virus/Anti-Spam
		Load			Load the tune configuration
		Save			Save the tune configuration
		display			Display the tune configuration
		config			Config the tune configuration
			l4Udpcksum	<on|off>	Enable/Disable UDP checksum check
			l4Icmpcjsum	<on|off>	Enable/Disable ICMP checksum check
			l4Tcpcksum	<on|off>	Enable/Disable TCP checksum check
			l4Tcpwindowck	<on|off>	Enable/Disable TCP window check
			l4Tcpmssck	<on|off>	Enable/Disable TCP mss check
			l7Smtpasm	<on|off>	Enable/Disable TCP assembly for SMTP
			l7Pop3asm	<on|off>	Enable/Disable TCP assembly for POP3
			l7Httpasm	<on|off>	Enable/Disable TCP assembly for HTTP
			l7Ftpasm	<on|off>	Enable/Disable TCP assembly for FTP
			l7Ftpdataasm	<on|off>	Enable/Disable TCP assembly for FTPDATA
			l7Otherasm	<on|off>	Enable/Disable TCP assembly for other protocols
	update				The command about signature and signature update stuffs
		display			Show the signature information and the update setting
		load			Load the signature update setting
		save			Save the signature update setting
		start			Start the signature update
		config			Config the signature update setting
			autoupdate	<on|off>	Enable/Disable the autoupdate

			method	<1-3>	Config the update method
			dailyTime	<00-23>	Config the daily hour update schedule
			weeklyDay	<1-7>	Config the weekly day update schedule
			weeklyTime	<00-23>	Config the weekly hour update schedule
	signature				The command about signature post-process setting
		display			Display the current signature setting
		load	<Signature_ID>		Load the signature setting that its ID is SignatureIID
		save			Save the signature setting
		config			Config the current signature setting
			active	<on|off>	Enable/Disable the active option
			log	<on|off>	Enable/Disable the log option
			alert	<on|off>	Enable/Disable the alert option
			action	<1-6>	Set the post action
		reset			Reset the signature setting to the default setting
	device				
		reg			
		rxring			
		rxbuf			
		txbuf			
		disp			
	hardware				
		enable	<on|off>		

Anti-Virus Command [Home]

Command					Description
av					Anti-Virus CI commands
	display				Show the anti-virus setting
	load				Load the anti-virus setting
	config				Config the anti-virus setting
		overZipSession	[0:Block| 1:Forward]		Forward session when the session number is over the maximum ZIP sessions.
		enable			Enable/Disable the anti-virus function
		httpScanAllMime	<on|off>		Enable/Disable scanning all mime type files. If we don't enable this option , ZyWall will just scan files with the application type
		pop3ScanAllMime	<on|off>		Enable/Disable scanning all mime type files. If we don't enable this option , ZyWall will just scan files with the application type
		smtpScanAllMime	Mon|off>		Enable/Disable scanning all mime type files. If we don't enable this option , ZyWall will just scan files with the application type
		decompress	<on|off>		Enable/Disable the decompress on the fly. You should also enable tcp assembly to support the decompress on the fly.
		ftp			Config the anti-virus setting for FTP
			display		Show the anti-virus setting for FTP
			active	<on|off>	Enable/Disable the anti-virus function for FTP
			log	<on|off>	Enable/Disable the log option
			alert	<on|off>	Enable/Disable the alert option
			breakfile	<on|off>	Enable/Disable the breakfile option

			sendmsg	<on|off>	Enable/Disable the sendmsg option
		dir			
			lan-lan	<on|off>	Config the protected interface setting
			lan-wan	<on|off>	Config the protected interface setting
			lan-dmz	<on|off>	Config the protected interface setting
			lan-wan2	<on|off>	Config the protected interface setting
			lan-wlan	<on|off>	Config the protected interface setting
			wan -lan	<on|off>	Config the protected interface setting
			wan -wan	<on|off>	Config the protected interface setting
			wan -dmz	<on|off>	Config the protected interface setting
			wan -wan2	<on|off>	Config the protected interface setting
			wan -wlan	<on|off>	Config the protected interface setting
			dmz -lan	<on|off>	Config the protected interface setting
			dmz -wan	<on|off>	Config the protected interface setting
			dmz -dmz	<on|off>	Config the protected interface setting
			dmz -wan2	<on|off>	Config the protected interface setting
			dmz -wlan	<on|off>	Config the protected interface setting
			wan2 -lan	<on|off>	Config the protected interface setting
			wan2-wan	<on|off>	Config the protected interface setting
			wan2-dmz	<on|off>	Config the protected interface setting
			wan2-wan2	<on|off>	Config the protected interface setting
			wan2-wlan	<on|off>	Config the protected interface setting
			wlan -lan	<on|off>	Config the protected interface setting
			wlan -wan	<on|off>	Config the protected interface setting
			wlan -dmz	<on|off>	Config the protected interface setting
			wlan -wan2	<on|off>	Config the protected interface setting
			wlan -wlan	<on|off>	Config the protected interface setting
		http			Config the anti-virus setting for HTTP
			display		Show the anti-virus setting for HTTP
			active	<on|off>	Enable/Disable the anti-virus function for HTTP
			log	<on|off>	Enable/Disable the log option
			alert	<on|off>	Enable/Disable the alert option
			breakfile	<on|off>	Enable/Disable the breakfile option
			sendmsg	<on|off>	Enable/Disable the sendmsg option
		dir			
			lan-lan	<on|off>	Config the protected interface setting
			lan-wan	<on|off>	Config the protected interface setting
			lan-dmz	<on|off>	Config the protected interface setting
			lan-wan2	<on|off>	Config the protected interface setting
			lan-wlan	<on|off>	Config the protected interface setting
			wan -lan	<on|off>	Config the protected interface setting
			wan -wan	<on|off>	Config the protected interface setting
			wan -dmz	<on|off>	Config the protected interface setting
			wan -wan2	<on|off>	Config the protected interface setting
			wan -wlan	<on|off>	Config the protected interface setting
			dmz -lan	<on|off>	Config the protected interface setting
			dmz -wan	<on|off>	Config the protected interface setting
			dmz -dmz	<on|off>	Config the protected interface setting
			dmz -wan2	<on|off>	Config the protected interface setting
			dmz -wlan	<on|off>	Config the protected interface setting
			wan2 -lan	<on|off>	Config the protected interface setting
			wan2-wan	<on|off>	Config the protected interface setting
			wan2-dmz	<on|off>	Config the protected interface setting
			wan2-wan2	<on|off>	Config the protected interface setting

			wan2-wlan	<on|off>	Config the protected interface setting
			wlan -lan	<on|off>	Config the protected interface setting
			wlan -wan	<on|off>	Config the protected interface setting
			wlan -dmz	<on|off>	Config the protected interface setting
			wlan -wan2	<on|off>	Config the protected interface setting
			wlan -wlan	<on|off>	Config the protected interface setting
		smtp			Config the anti-virus setting for SMTP
			display		Show the anti-virus setting for SMTP
			active	<on|off>	Enable/Disable the anti-virus function for SMTP
			log	<on|off>	Enable/Disable the log option
			alert	<on|off>	Enable/Disable the alert option
			breakfile	<on|off>	Enable/Disable the breakfile option
			sendmsg	<on|off>	Enable/Disable the sendmsg option
		dir			
			lan-lan	<on|off>	Config the protected interface setting
			lan-wan	<on|off>	Config the protected interface setting
			lan-dmz	<on|off>	Config the protected interface setting
			lan-wan2	<on|off>	Config the protected interface setting
			lan-wlan	<on|off>	Config the protected interface setting
			wan -lan	<on|off>	Config the protected interface setting
			wan -wan	<on|off>	Config the protected interface setting
			wan -dmz	<on|off>	Config the protected interface setting
			wan -wan2	<on|off>	Config the protected interface setting
			wan -wlan	<on|off>	Config the protected interface setting
			dmz -lan	<on|off>	Config the protected interface setting
			dmz -wan	<on|off>	Config the protected interface setting
			dmz -dmz	<on|off>	Config the protected interface setting
			dmz -wan2	<on|off>	Config the protected interface setting
			dmz -wlan	<on|off>	Config the protected interface setting
			wan2 -lan	<on|off>	Config the protected interface setting
			wan2-wan	<on|off>	Config the protected interface setting
			wan2-dmz	<on|off>	Config the protected interface setting
			wan2-wan2	<on|off>	Config the protected interface setting
			wan2-wlan	<on|off>	Config the protected interface setting
			wlan -lan	<on|off>	Config the protected interface setting
			wlan -wan	<on|off>	Config the protected interface setting
			wlan -dmz	<on|off>	Config the protected interface setting
			wlan -wan2	<on|off>	Config the protected interface setting
			wlan -wlan	<on|off>	Config the protected interface setting
		pop3			Config the anti-virus setting for POP3
			display		Show the anti-virus setting for POP3
			active	<on|off>	Enable/Disable the anti-virus function for POP3
			log	<on|off>	Enable/Disable the log option
			alert	<on|off>	Enable/Disable the alert option
			breakfile	<on|off>	Enable/Disable the breakfile option
			sendmsg	<on|off>	Enable/Disable the sendmsg option
		dir	lan-lan	<on|off>	Config the protected interface setting
			lan-wan	<on|off>	Config the protected interface setting
			lan-dmz	<on|off>	Config the protected interface setting
			lan-wan2	<on|off>	Config the protected interface setting
			lan-wlan	<on|off>	Config the protected interface setting
			wan -lan	<on|off>	Config the protected interface setting
			wan -wan	<on|off>	Config the protected interface setting
			wan -dmz	<on|off>	Config the protected interface setting

			wan -wan2	<on|off>	Config the protected interface setting
			wan -wlan	<on|off>	Config the protected interface setting
			dmz -lan	<on|off>	Config the protected interface setting
			dmz -wan	<on|off>	Config the protected interface setting
			dmz -dmz	<on|off>	Config the protected interface setting
			dmz -wan2	<on|off>	Config the protected interface setting
			dmz -wlan	<on|off>	Config the protected interface setting
			wan2 -lan	<on|off>	Config the protected interface setting
			wan2-wan	<on|off>	Config the protected interface setting
			wan2-dmz	<on|off>	Config the protected interface setting
			wan2-wan2	<on|off>	Config the protected interface setting
			wan2-wlan	<on|off>	Config the protected interface setting
			wlan -lan	<on|off>	Config the protected interface setting
			wlan -wan	<on|off>	Config the protected interface setting
			wlan -dmz	<on|off>	Config the protected interface setting
			wlan -wan2	<on|off>	Config the protected interface setting
			wlan -wlan	<on|off>	Config the protected interface setting
	save				Save the anti-virus setting
	update				The command about signature and signature update stuffs
		display			Show the signature information and the update setting
		load			Load the signature update setting
		save			Save the signature update setting
		start			Start the signature update
		config			Config the signature update setting
			autoupdate	<on|off>	Enable/Disable the autoupdate
			method	<1-3>	Config the update method
			dailyTime	<00-23>	Config the daily hour update schedule
			weeklyDay	<1-7>	Config the weekly day update schedule
			weeklyTime	<00-23>	Config the weekly hour update schedule
	tune				The tune command for IDP/Anti-Virus/Anti-Spam
		load			Load the tune configuration
		save			Save the tune configuration
		display			Display the tune configuration
		config			Config the tune configuration
			l4Udpcksum	<on|off>	Enable/Disable UDP checksum check
			l4Icmpcjsum	<on|off>	Enable/Disable ICMP checksum check
			l4Tcpcksum	<on|off>	Enable/Disable TCP checksum check
			l4Tcpwindowck	<on|off>	Enable/Disable TCP window check
			l4Tcpmssck	<on|off>	Enable/Disable TCP mss check
			l7Smtpasm	<on|off>	Enable/Disable TCP assembly for SMTP
			l7Pop3asm	<on|off>	Enable/Disable TCP assembly for POP3
			l7Httpasm	<on|off>	Enable/Disable TCP assembly for HTTP
			l7Ftpasm	<on|off>	Enable/Disable TCP assembly for FTP
			l7Ftpdataasm	<on|off>	Enable/Disable TCP assembly for FTPDATA
			l7Otherasm	<on|off>	Enable/Disable TCP assembly for other protocols
	zipUnsupport		zipEncrypD		Processing ZIP file will destroy encrypted file if

			rop flag [0/1]		flag is on, otherwise pass it.

Anti-Spam Command Home

Command					Description
as					Anti-Spam CI commands
	asAction	[0|1]			Forward/Block exceeding mails sessions.
	debug				Debug for AntiSpam
		customListServ			Set custom server list server
			ip	[IP address]	Set custom server list server IP address
			enable	[0:disable|1:enable]	Enable/Disable custom server list server
		customRateServ			Set custom rating server server.
			ip	[IP address]	Set custom rating server IP address
			enable	[0:disable|1:enable]	Enable/Disable custom rating server
		envelope	[on|off]		Enable/Disable envelope debug message.
		http	[on|off]		Enable/Disable http debug message.
		mail	[on|off]		Enable/Disable mail debug message.
		pop3	[on|off]		Enable/Disable pop3 debug message.
		smtp	[on|off]		Enable/Disable smtp debug message.
	delete				Delete AntiSpam static filter.
		blackRule	<num start> [num end]		Delete black rule filter. User can delete one or a set of filter.
		whiteRule	<num start> [num end]		Delete white rule filter. User can delete one or a set of filter.
	display				
		antispam			Display AntiSpam configuration.
		serverlist			Display rating server list.
		runtimedata	<all|black|white>	[all|ip|mime|email|subject]	Display runtime data for anti-spam ACL structure.
	enable	<0:disable | 1:enable>			Enable/Disable AntiSpam.
	failTolerance	[time]			Set rating server fail tolerance time. If the rating server timeout interval over this tolerance, this server will be removed from server list.
	freeSession				Free all mail ssessions.
	getServerList	<Y:Yes|N:No>			Send server list request manually.
	dir	<lan|wan1|dmz|wan2|wlan>	<lan|wan1|dmz|wan2|wlan>	<on|off>	Enable or disable on direction of Anti Spam
	scoreTimeout			value	Set the AS score query timeout value.