ZyXEL

Firmware Release Note

ZyWALL 2 Plus

Release 4.00(XU.2)

Date:	**July 26, 2006**
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ZyXEL ZyWALL 2 Plus Standard Version
Release 4.00(XU.2)
Release Note

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Supported Platforms:

ZyXEL ZyWALL 2 Plus

Versions:

ZyNOS F/W Version: V4.00(XU.2) | 07/26/2006 11:03:02
BootBase: V1.11 | 07/12/2006 14:20:29

Notes:

1. Restore to Factory Defaults Setting Requirement: No
2. The setting of ignore triangle route is on in default ROMFILE. 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. IKE process in phase 2 will check ID information between system and the peer. If you found that the IPSEC connection is failed, please check your settings.
4. Using Web to configure VPN, the phase 1 algorithms have been fixed to DES + MD5. If other algorithms are preferred, please use ADVANCE page to configure them.
5. When firewall turns from "off" to "on", the firewall initialization procedure will disconnect all connections running through the ZyWALL.
6. 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.
7. When UPnP is on, and then reboot the router, Windows XP will not detect UPnP and refresh “My Network Places→Local Network”. Plug in network wire again can solve this problem.
8. In bridge mode, If LAN side DHCP clients want to get DHCP address from WAN side DHCP server, you may need to turn on the firewall rule for BOOT_CLIENT service type in WAN→LAN direction.
9. The first entry for static route is reserved for creating WAN default routes and is READ-ONLY.
10. If you want traffic redirect feature to work, you should turn on WAN ping check by "sys rn pingcheck 1".
11. The first entry for static route is reserved for creating WAN default route and is READ-ONLY.
12. 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.

13. Support Vantage CNM -- revision 2.2.00.61.03

Known Issues:

[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.

[Bandwidth Management]

1. Bandwidth management H.323 service does not support Netmeeting H.323 application.
2. Using BWM in PPPoE/PPTP mode, there are two filters for FTP and H323 ALG
   (1) If we execute FTP first then H323 cannot pass through ZyWALL.
   (2) If we execute H323 before FTP, all functions work properly.
3. In some cases, BWM (Fairness-Based mode) cannot manage bandwidth accurately. Ex. In WAN interface, there are two subclasses for FTP service, their speed are 100Kbps and 500Kbps, the traffic match the filter which speed is 500Kbps may only use half of it’s bandwidth.

[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.)

[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. Don’t use CI command “bridge rstp bridge enable” to enable RSTP, it will change the initial Path Cost value to an incorrect value.

[ALG]

1. Symptom: P2002 can not connect with each other in Peer-to-Peer mode.
   Condition:
   Topology: P2002--(LAN)ZyWALL_A(WAN, IP=172.21.2.151)--(WAN, IP=172.21.1.134)ZyWALL_B(LAN)--P2002
   (1) In ZyWALL_A and ZyWALL_B, add a "WAN to LAN" firewall rule to pass traffic with port "5060".
   (2) In ZyWALL_A and ZyWALL_B, add a port forwarding rule "5060" to P2002.
   (3) In ZyWALL_A and ZyWALL_B, enable SIP ALG.
   (4) Setup both P2002 to Peer-to-Peer mode.
   (5) Making the SIP connection by P2002 will be failed.
   (6) Turn off firewall in ZyWALL_A and ZyWALL_B, sometimes the connnection can be built up if we dial from P2002 which is behind ZyWALL_A.

[MISC]

1. At SMT24.1, the collisions for WAN and LAN port are not really counted.
2. Under PPTP encapsulation mode, we can not access some website like http://www.kimo.com.tw/
3. In eWC->Statistics, Tx data for Dial Backup is not correct.

4. Symptom: PC can't ping remote gateway through VPN tunnel under this special topology.
   Condition:
   PC------LAN ZyWALL_A WAN----------LAN ZyWALL_B
   WAN-------Internet
   (192.168.1.33） （192.168.100.33） (192.168.100.1) （172.202.77.145)

   (1) VPN configuration in ZyWALL_A:
   WAN IP Address=192.168.100.33，WAN IP Subnet Mask=255.255.255.0，Gateway IP Address=192.168.100.1.
   Gateway policy，Name=IKE1，Remote Gateway Address=192.168.100.1，Pre-Shared Key=12345678.
   Network policy for IKE1，Active=enable，Name=IPSec1，Local Network/Starting IP Address=192.168.1.33，Remote Network/Starting IP Address=0.0.0.0
   (2) VPN configuration in ZyWALL_B
   WAN IP Address=172.202.77.145，WAN IP Subnet Mask=255.255.0.0，Gateway IP Address=172.202.77.1.
   Gateway policy，Name=IKE1，Remote Gateway Address=192.168.100.33，Pre-Shared Key=12345678.
   Network policy for IKE1，Active=enable，Name=IPSec1，Local Network/Starting IP Address=0.0.0.0，Remote Network/Starting IP Address=192.168.1.33.
   (3) When we established the VPN tunnel between ZyWALL_A and ZyWALL_B, we can access ZyWALL_B (192.168.100.1) with the remote management, such as Telnet, FTP…, this traffic will go through VPN tunnel. However, we can not ping ZyWALL_B (192.168.100.1) successfully because this ICMP traffic did not go through VPN tunnel to ZyWALL_B.

[CNM]

1. DES/3DES encryption key doesn’t unique.
2. The 2 check boxes “Log” and “Block” of Matched Web Pages can’t be disabled on Content Filter/ Categories page when Schedule to Block has set time interval on Content Filter/General page.
3. Vantage GUI misses to show the NetBIOS port, 445 in Firewall “W2L_Rule_2” default rule.
4. [Symptom] Device will crash, when Vantage set Dial Back Fixed IP in the same subnet with WAN to device.
   [Condition]
   (1). Let device register to Vantage.
   (2). Vantage set Dial Backup to enable.
   (3). Vantage set Dial Backup Fixed IP in the same subnet as WAN to device.
   (4). Device will crash after writing above settings.
5. Change NAT mode from “SUA” to “Full Feature”, device will create 2 address mapping rules automatically but Vantage Server will not.
6. Vantage and Agent are not consistent at VPN/IPSec/Protocol field. Vantage is a dropdown list with “Any”, “ICMP”, “TCP”, “UDP” selections and Agent is a 0~999 value range.
7. Vantage and Agent are not consistent at Firewall rule’s log. Vantage has 4 selections “None”, “Match”, “Not-Match”, “Both”. Agent has only a check box.
8. Firewall Default Action can’t select “Permit”, “Drop” and “Reject” via Vantage.
9. Firewall name can’t display on Firewall page on Vantage GUI.

10. Some pre-define custom service can’t add to firewall rule when configure from Vantage. For example: AX.25, IPv6, VNC, NTP and so on.
11. The “Mail Sender” field on device/Log settings page hasn’t implement on Vantage side.

Features:

Modifications in V 4.00(XU.2) | 07/26/2006

1. Formal release.

Modifications in V 4.00(XU.2)b2 | 07/18/2006

1. [ENHANCEMENT]
   Let VPN DPD feature comply with RFC 3706.
2. [BUG FIX]
   Symptom: NAT Many-to-Many Overload rule cannot be set in eWC.
   Condition:
   (1) Goto eWC>NAT>Address Mapping page, click "Insert" button.
   (2) In NAT - ADDRESS MAPPING page, select Type= Many-to-Many Overload.
   (3) Clieck the "Apply" button, and the status shows "Extra characters were detected in the item".
3. [BUG FIX]
   Symptom: User cannot apply in eWC>VPN>Gateway Policy configuration when My Domain Name length is over 21 characters.
   Condition:
   (1) Goto eWC>DDNS>DDNS, set a WAN domain name as "zywalla1.dynalias.org".
   (2) Goto eWC>VPN, create a rule using My domain as "zywalla1.dynalias.org".
   (3) After click "Apply", status bar show error message, and cannot be saved.
4. [BUG FIX] 060714839
   Symptom: The configuration of eWC≈remote management cannot be saved.
   Condition:
   (1) Go to eWC≈Remote management≈WWW≈Https, choose the default certificate of Server Certificate ˇauto_generated_self_signed_certˇ.
   (2) Click ˇapplyˇ.
   (3) An error occurs on status bar.
5. [BUG FIX]
   Sympton: GUI Message is black color but it should be red.
   Condition:
   (1) Goto eWC->Certificate->My Certificates.
   (2) Create a new CA and apply it.
   (3) The color of message "Self-signed Certificate Generation in Progress" is black but it should be red.

Modifications in V 4.00(XU.2)b1 | 07/12/2006

1. [ENHANCEMENT]
   Add Vantage CNM device agent – 2.1.3(XU.0) which supported with Vantage CNM server -- revision 2.2.00.61.03.
2. [ENHANCEMENT]

A CI command “sys htp actled” is added.
“sys htp actled 1”: turn on ACT LED; “sys htp actled 0”: turn off ACT LED

3. [ENHANCEMENT]
   Upgrade GUI ROMPager to 4.50 version.
4. [BUG FIX] 060310863
   Symptom:
   PC behind DUT can not access some web.
   Condition:
   (1) PC behind DUT cannot reach some websuite, ex: http://www.xelion.it/.
5. [BUG FIX] 050922957
   Symptom:
   (1) Content filter block schedule time display error.
   (2) Content filter cannot block web features by CI command.
   Condition:
   (1) In CI cmd menu 24.8, type "ip url gen time 01:00 23:00", it will show "block from 01:01 to 23:23".
   (2) Step1.
   Edit web eWC/Content Filter/Enable Content Filter=enable，
   ActiveX=enable, Java=enable, Cookie=enable.
   Step2.
   In CI cmd menu 24.8, type "ip url gen time 01:00 23:00".
   Step3.
   Connect to webpage "http://www.ocx.idv.tw/HomePage.htm", the eWC/LOGS doesn't show any BLOCK logs.
6. [BUG FIX] 060208194
   Symptom: DUT cannot set the first DNS server of LAN DHCP to "from ISP" correctly.
   Condition:
   (1) Restore default romfile.
   (2) Device gets IP.
   (3) Type three CI commands "ip dns lan edit 0 0 1", "ip dns lan edit 1 3" and "ip dns lan edit 2 3".
   (4) LAN site PC gets IP from device, but it cannot get correct DNS servers.

Modifications in V 4.00(XU.1) | 05/17/2006

2. Formal release.

Modifications in V 4.00(XU.1)b1 | 05/10/2006

1. [BUG FIX]
   Update help pages.
2. [BUG FIX]
   Register DUT to myZyxel.com. After refreshing CF services, CI “sys myZ disp” will show “CF expired day:” It should be “CF expiration day”.
3. [BUG FIX]
   Symptom: DUT will be crash, when using "Acunetix Web Vulnerability Scanner" to scan. (SPRID: 060503065)
   Condition:
   1. In bridge mode, use "Acunetix Web Vulnerability Scanner" and profile is "parameter_manipulation" to scanning.
   2. DUT will be crash, it's can reproduce.

4. [BUG FIX]
   PC1（192.168.1.33）------DUT（192.168.12.100）-----PC2（192.168.12.110）
   Symptom: Trigger port can not reuse.(SPRID: 060502057)
   Condition:
   1. Set with CI command "sys romr|y"
   2. Edit web eWC/WAN/WAN1，My WAN IP Address=192.168.12.100 / My WAN IP Subnet Mask=255.255.255.0 / Gateway IP Address=192.168.12.1
   3. Edit web eWC/NAT/Port Triggering，WAN Interface=WAN1，index1/Name=dut，index1/Incoming Start Port=21，index1/Incoming End Port：110，index1/Trigger Start Port=21，index1/Trigger End Port=21
   4. Edit web eWC/Firewall，Enable Firewall=disable
   5. PC1 ftp to PC2, and then PC2 ftp to PC1.
   6. PC2 disconnect ftp and then reconnect to PC1 will be fail (PC1 ftp session still connected) .

Modifications in V 4.00(XU.0) | 05/08/2006
1. Formal Release.

Modifications in V 4.00(XU.0)b3 | 04/26/2006
1. [BUG FIX]
   Updated help pages.
2. [BUG FIX]
   GUI->Home, NAT session shows 1024.
3. [BUG FIX]
   ZW2+<WAN> ___ <LAN>ZW
   Symptom: GUI default DNS server info doesn't update when DUT default DNS server info changes.
   Condition:
   (1) in menu 3.2, set DNS server "1.1.1.1" for ZW
   (2) restore to default romfile in ZW2+
   (3) ZW2+ gets "1.1.1.1" as DNS server after reboot.
   (4) change DNS server to "2.2.2.2" in ZW
   (5) use menu 24.4.2, 24.4.3 to get new DNS server in ZW2+, get "2.2.2.2", but in GUI->DNS, it still shows "1.1.1.1".
4. [BUG FIX]
   ZW2+<WAN> ___ <LAN>ZW
   Symptom: The VPN primary gateway IP address is not updated.
   Condition:
   (1) Configure a basic VPN rule.
   (2) Setup primary gateway as zw2a.dyndns.org, make it map to 192.168.70.100 in ZW DNS page.
   (3) in ZW DNS page, change the mapping of zw2a.dyndns.org to 192.168.70.200.
   (4) About 5 minutes later, after domain name update timer is triggered, users will find this rule still use 192.168.70.100 to establish tunnel.

Modifications in V 4.00(XU.0)b2 | 04/10/2006
1. [ENHANCEMENT]
   Add IPSec HA.

2. [ENHANCEMENT]
   NAT session is expanded from 1024 to 3000
3. [ENHANCEMENT]
   Static DHCP entry is expanded from 8 to 32.
4. [ENHANCEMENT]
   Totally 10 VPN rules can be configured in GUI, but only two are allowed to be active at the same time.
5. [FEATURE CHANGE]
   SMT 15.2.3 “WAN=1” is removed
6. [FEATURE CHANGE]
   Model name is changed from ZyWALL 2A to ZyWALL 2 Plus
7. [BUG FIX]
   Symptom: TCP MSS value is incorrect
   Condition:
   (1) In eWC>VPN>Global Setting page, "Adjust TCP MSS" can be configured as uint16(>65535) but should not be larger than 65535 according to rfc2147.
8. [ENHANCEMENT]
   Add a CI command "ip 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.
9. [ENHANCEMENT]
   Add a CI command, "ipsec initContactMode gateway|tunnel", to support multiple VPN clients which located behind the same NAT router can build VPN tunnel to ZyWALL.
10. [ENHANCEMENT].
    Add a CI command "ip alg ftpPortNum [port number]" to support a different port number on FTP ALG.
    Note: This port is an additional FTP ALG port, the original FTP port (21) still works.
11. [ENHANCEMENT]
    The password saved in ROM file can be encrypted by MD5.
    (1) "sys pwdHash <on | off> [newPassword] [oldPassword]"
    (a)Use this CI command to turn on or off this feature. Once the feature is on in a ROM file, the F/W without this feature support can not deal the ROM file well. Ex. login problem.
    (b) To turn off the feature, you must provide two passwords, "newPassword" is the new password that will be saved in the ROM file in plaintext. "oldPassword" is the original administration password that is for security issue.
    (2) "sys md5 <string>" Input a string, it will output the md5 code.
12. [ENHANCEMENT]
    Add CI command, "ipsc swSkipPPTP [on/off]", to let all traffic pass through VPN tunnel setting not to apply on PPTP traffics.
13. [ENHANCEMENT]
    ZyNOS adds device local port conflict protection. ZyWALL will avoid port

1029(some network attack may use this port) as local port.

14. [BUG FIX]
    WAS: The DDNS of ZyWALL will not update IP when the ZyWALL's WAN IP is static.
    IS: The DDNS of ZyWALL will update IP when WAN IP changes, no matter the ZyWALL's WAN IP is static or dynamic.
15. [FEATURE CHANGE]
    Expend dial backup initial string length from 31 characters to 63 characters.
16. [BUG FIX]
    Symptom: Can not change gateway IP address to "0.0.0.0".
    Condition:
    (1) In eWC->NETWORK->WAN->WAN1(WAN2), set WAN interface as static IP address and gateway = "10.0.0.1".
    (2) Change gateway IP address to 0.0.0.0 and click "Apply".
    (3) Goto eWC->NETWORK->WAN->WAN1(WAN2), the gateway IP address is still "10.0.0.1".
17. [BUG FIX]
    Symptom: VPN tunnel up time of ZyWALL private MIB has some problems.
    Condition:
    (1) Successfully build a VPN tunnel.
    (2) Use MIB browser to get the up time value from ZyWALL. The returned result is correct.
    (3) Add a new ipsec policy.
    (4) Get the up time value again. The returned result of the built VPN tunnel is "0(days) 00:00:00".
18. [BUG FIX]
    Symptom: expired date is incorrect after reboot.
    Condition:
    (1) eWC->register, refresh CF service with server, device gets correct expired date(like 2007-04-22);
    (2) reboot device, the expired date is changed (like 2013-09-20), but the system time doesn’t change that much(almost 6 years).
19. [BUG FIX]
    Symptom: Default rom file can not upload to DUT (SPRID: 060310897)
    Condition:
    (1) upload default rom file via ftp, AT command, GUI fails.
20. [BUG FIX]
    In CI command type “sys htp destest” , DUT will reboot (SPRID: 060316243)
21. [BUG FIX]
    Symptom: VPN can establish three VPN tunnel and SA monitor tunnel information not correct after third VPN tunnel establish (SPRID: 060313014)
    Condition:
    Responder DUT1 :
    1. Edit eWC/VPN , edit IKE proposal=Main , DES , MD5 , DH1 ,My Address =192.168.11.96 ,Remote gateway Address=0.0.0.0,-IPSec :ESP , DES , SHA-1 , Local address is LAN subnet(192.168.1.0/255.255.255.0)
    Initiator1 : DUT2 :
    1. Edit eWC/VPN ,edit IKE proposal=Main , DES , MD5 , DH1 ,Remote gateway Address=192.168.11.96,-IPSec :ESP , DES , SHA-1 , Local Network/Starting IP address= 192.168.2.0/255.255.255.0) ,Remote Network/Staring

address=192.168.1.0/255.255.255.0)
2.Dial VPN rule and established first VPN tunnel
3.Continue ping with Dos command from 192.168.2.33 to 192.168.1.33 successful
4.Edit eWC/VPN ,Add second IKE proposal=Main , DES , MD5 , DH1 ,Remote gateway Address=192.168.11.96, -IPSec :ESP , DES , SHA-1 , Local Network/Starting IP address= 192.168.3.0/255.255.255.0) ,Remote Network/Staring address=192.168.1.0/255.255.255.0)
5.Dial second VPN rule and establish second VPN tunnel
Initiator2 : Software VPN client
1.Configure software VPN client ,IKE : Main , DES , MD5 , DH1 ,Remote gateway Address=192.168.11.96,-IPSec :ESP , DES , SHA-1 , Local Network/Starting IP address= 192.168.11.99) ,Remote Network/Staring address=192.168.1.0/255.255.255.0)
2.Dial VPN rule and established third VPN tunnel
3.Continue ping with Dos command from 192.168.11.99 to 192.168.1.33 successful
4.Check DUT1 SA monitor ,SA monitor tunnel information not correct after third VPN tunnel establish

22. [BUG FIX]
Default certificate and UPnP device name need rename to ZyWALL 2 Plus from ZyWALL 2A (SPRID: 060322746)
23. [BUG FIX]
Symptom: Dial backup performance is bad, and LED is abnormal.
Condition:
1. use dial backup connection to test performance(ftp), the data rate was about 3-4k Bps, now it can reach nearly 10k Bps.
2. LED changes bright, then dark very slowly, now it can change continuously and blink normally.
24. [BUG FIX]
Symptom: VPN tunnel can’t be established with phase2’s some special parameters (ESP , NULL , MD5 , Tunnel , DH2) when check ”Multiple Proposal” checkbox
Condition:
(1) On DUT1, edit a VPN rule. For Phase2 parameter’s setting: ESP , NULL , MD5 , Tunnel , DH2, and check ”Multiple Proposal” checkbox.
(2) On DUT2, edit the right VPN rule, and set same phase1 & phase2 parameters with DUT1.
(3) Trigger this VPN tunnel.
(4) This VPN tunnel should be established, but the result is: can’t be established.
(5) Note: If with same parameters but uncheck phase2’s ”Multiple Proposal”, the tunnel can be established.
25. [BUG FIX]
Symptom: the tftp function doesn’t work if telnet port is changed
Condition:
1. in menu 24.11, the default telnet port is 23. Use port 23 to telnet login device, leave it in menu 24.5/7.1/7.2, you can download/upload firmware/romfile using tftp.
2. But if you change telnet port to one other than 23, like 10000, after telnet login device using port 10000, you cannot use tftp to download/upload firmware/romfile.
26. [BUG FIX]

Symptom: Boundary-scan test fails, “255.255.255.255” should not be set to DUT as a valid server IP by UPnP. (SPRID:060116756)

Condition:

1.the Windows find the UPnP device.

2.Edit web Advanced setup— UPnP, Enable Allow UPnP to pass through Firewall

3.Edit web Advanced setup—UPnP-- Allow users to make configuration changes through UPnP, enable it.

4.In view network connections of Windows XP, double click the icon named Internet Gateway.

5.click Properties, click Settings, click Add.

6.in Description of service, type a name of service.

7.in Name of IP address of the computer hosting the service on your network, input the IP address 255.255.255.255

8.input the port in External port number of this service, and Internal port number of this service. Input the port right number. Choose the protocol you used, TCP or UDP.

9.click OK and OK

10.The configuration saved successfully.

27. [BUG FIX]

Remove string “AS,AV, IDP services” from GUI of wizard

28. [BUG FIX]

Symptom: NAT address mapping rule will cause DUT crash

Conditon:

1. Edit a NAT address mapping rule in eWC>>SUA/NAT>>Address Mapping>>Edit

2. Rule setting is:

Type= Many One-to-One

Local Start IP= 0.0.0.0

Local End IP= 127.255.255.255

Global Start IP= 128.0.0.0

Global End IP= 255.255.255.255

3. Apply, set NAT as “Full Feature”, DUT will crash after a few minutes

Modifications in V 4.00(XU.0)b1 | 03/03/2006

First Release.

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.

```
            Menu 24.11 - Remote Management Control

       TELNET Server:    Port = 23        Access = ALL
                         Secured Client IP = 0.0.0.0

       FTP Server:       Port = 21        Access = ALL
                         Secured Client IP = 0.0.0.0

       Web Server:       Port = 80        Access = ALL
                         Secured Client IP = 0.0.0.0

       SNMP server:      Port = 161       Access = ALL
                         Secured Client IP = 0.0.0.0

       DNS server:       Port = 53        Access = ALL
                         Secured Client IP = 0.0.0.0


                    Press ENTER to Confirm or ESC to Cancel:
```

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.

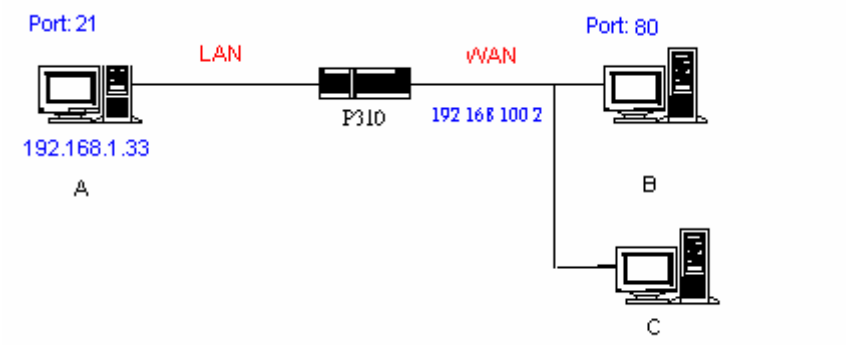
These triggered events can be timed so that they erase the port mapping as soon as they are done with the data transfer, so that the port mapping can be triggered by another Client computer. This gives the ***illusion*** that multiple computers can use the same port mapping at the same time, but the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

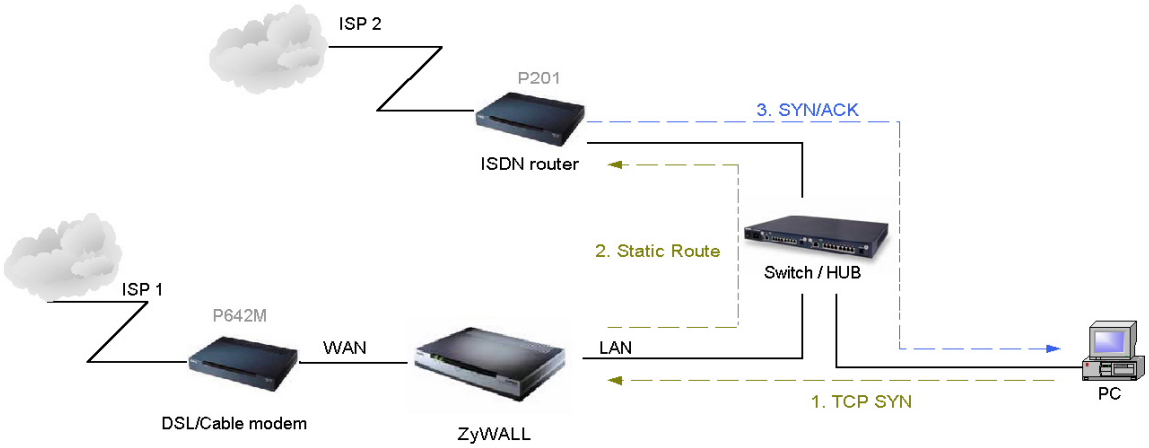


Figure 4-1 Triangle Route

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.

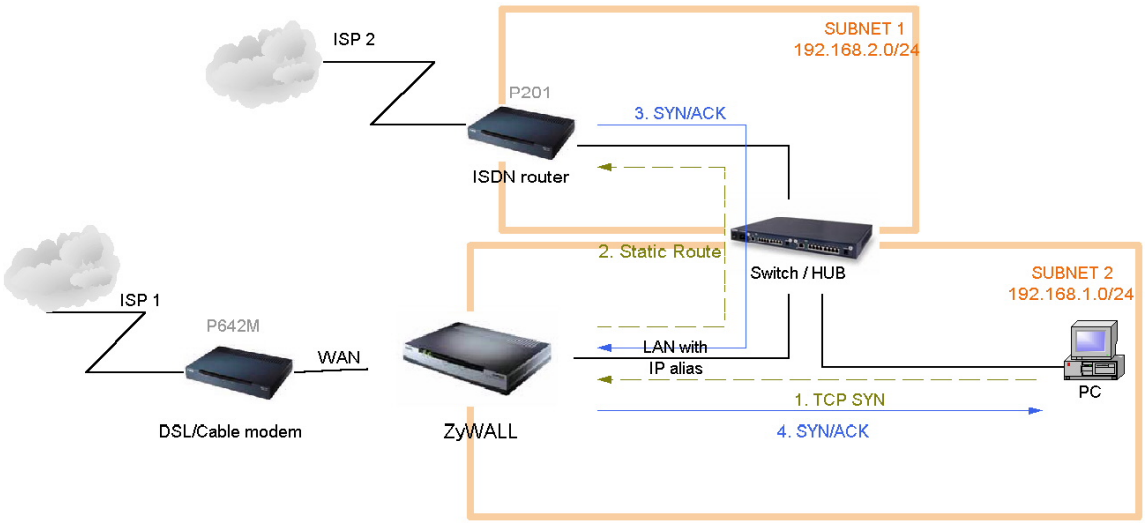


Figure 4-2 Gateway on alias IP network

(2) Gateway on WAN side

A working topology is suggested as below.

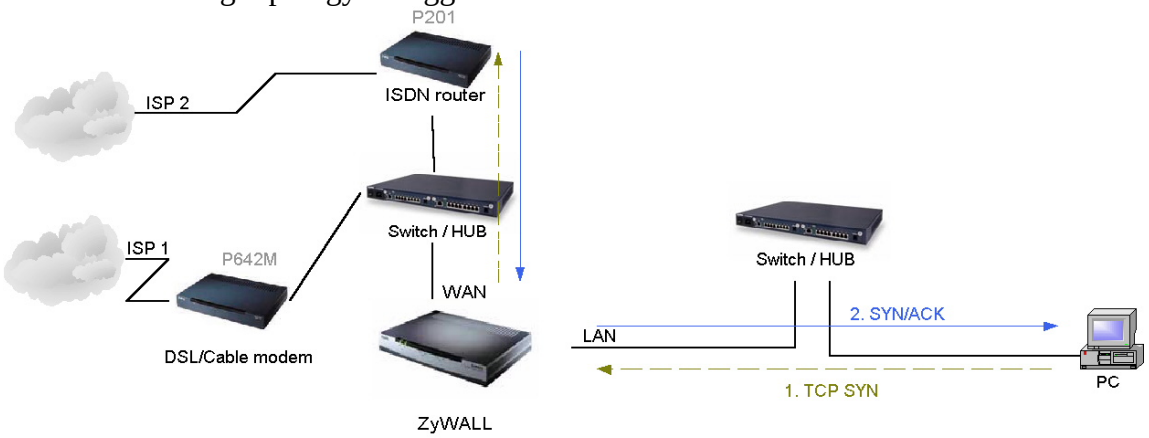


Figure 4-3 Gateway on WAN side

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 or 0.0.0.0	My WAN IP	My WAN IP
0.0.0.0	a.b.c.d (NOT 0.0.0.0)	My WAN IP	a.b.c.d
a.b.c.d (not 0.0.0.0)	*blank or 0.0.0.0	a.b.c.d	a.b.c.d
a.b.c.d (not 0.0.0.0)	e.f.g.h (NOT 0.0.0.0)	a.b.c.d	e.f.g.h

*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 or 0.0.0.0	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 (NOT 0.0.0.0)	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 or 0.0.0.0, 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 or 0.0.0.0, 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 or 0.0.0.0, 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 such a 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 DNS servers for IPSec VPN Note

DNS Domain Names

DNS (Domain Name System), a system for naming computers and network services that is organized into hierarchy of domain. DNS services provided by the DNS server can resolve the name to other information associated with the name, such as an IP address. The ZyWALL can be configured as a DHCP server. For most cases, your computer connected to the LAN of the ZyWALL can get IP settings (IP address, network mask, gateway address and DNS server address) from the ZyWALL DHCP server automatically.

There are three ways the ZyWALL's DHCP server assigns DNS servers addressed to its DHCP client computers.

(1) If the administrator has setup DNS servers on the ZyWALL's DHCP setting, the ZyWALL will tell the client those DNS server addresses.
(2) If the DNS server has not been setup on the ZyWALL DHCP server, but the ZyWALL has gotten the public DNS servers from the ISP; the ZyWALL will assign those public DNS servers address.
(3) The ZyWALL gives its own LAN IP address and acts as a DNS server proxy.

But the above are not enough for IPSec VPN applications.

How to access the private network by using domain names

On the IPSec VPN application, the user on the LAN of the ZyWALL, wants to access remote private networks. He must use the IP address to identify the remote site he wants to access. But at the modern intranet applications, we still want to have the DNS service for private network access. For example, there is a private Web server installed at the headquarters of your computer. You can access this Web server inside your company, or from your home by way of the ZyWALL's IPSec tunnel. The IP address of the private Web server is also private. You can't use the Internet public DNS servers to resolve those domain names that belong to your company's private network. You must setup those private DNS servers on your computer manually if you want to access the private network by using domain names.

ZyWALL DNS Servers for IPSec VPN

The ZyWALL has added DNS Server on each IPSec policy setup. When you setup the IPSec rule, you can give the DNS server if there exists a DNS Server that provides DNS service for this private network. The DHCP client (on ZyWALL's LAN) requests the IP information from your ZyWALL, the ZyWALL assigns additional DNS servers for IPSec VPN to the client, if the assigned IP address belongs to the range of local addresses of the IPSec rule.

Annex A CI Command List

Last Updated: 2006/03/02

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	Bridge Related Command	Bandwidth Management
Firewall Related Command	Certificate Management (PKI) Command	myZyXEL.com Command
Vantage Related Command		

Flag :
R: This command can be used in Router Mode
B: This command can be used in Bridge Mode

System Related Command

Command				Flag	Description
sys					
	adjtime			R + B	retrieve date and time from Internet
	cbuf				
		cnt			cbuf static
			display	R + B	display cbuf static
	callhist				
		display		R	display call history
		remove	<index>	R	remove entry from call history
	countrycode		[countrycode]	R + B	set country code
	date		[year month date]	R + B	set/display date
	debug			R + B	
		romfile		R + B	
			cert [0:reserve/1:erase]	R + B	erase all the certificates
			display	R + B	display romfile debug settings
			isp [0:reserve/1:erase]	R	erase the account and password of ISP
			prekey [0:reserve/1:reset]	R	reset the system IPSec pre-shared key
			profile [0:reserve/1:erase]	R + B	erase the accounts and passwords of 802.1X and XAUTH
			pwd [0:reserve/1:reset]	R + B	reset system password
			radius	R + B	erase Authentication and Accounting keys
			update [0:reserve/1:erase]	R + B	update romfile depend on current configuration
			wep [0:reserve/1:erase]	R + B	erase all WEP encryption keys
	domainname			R + B	display domain name
	edit		<filename>	R + B	edit a text file
	extraphnum			R	maintain extra phone numbers for outcalls
		add	<set 1-3> <1st phone num> [2nd phone num]	R	add extra phone numbers
		display		R	display extra phone numbers
		node	<num>	R	set all extend phone number to remote node <num>
		remove	<set 1-3>	R	remove extra phone numbers
		reset		R	reset flag and mask
	feature			R + B	display feature bit
	hostname		[hostname]	R + B	display system hostname
	logs			R + B	
		category		R + B	
			access [0:none/1:log/2:alert/3:both]	R + B	record the access control logs

			attack [0:none/1:log/2:alert/3:both]	R + B	record and alert the firewall attack logs
			display	R + B	display the category setting
			error [0:none/1:log/2:alert/3:both]	R + B	record and alert the system error logs
			ipsec [0:none/1:log/2:alert/3:both]	R	record the access control logs
			ike [0:none/1:log/2:alert/3:both]	R	record the access control logs
			javablocked [0:none/1:log]	R + B	record the java etc. blocked logs
			mten [0:none/1:log]	R + B	record the system maintenance logs
			packetfilter [0:none/1:log]	R + B	record the packet filter logs
			pki [0:none/1:log/2:alert/3:both]	R	record the pki logs
			tcpreset [0:none/1:log]	R + B	record the tcp reset logs
			upnp [0:none/1:log]	R	record upnp logs
			urlblocked [0:none/1:log/2:alert/3:both]	R + B	record and alert the web blocked logs
			urlforward [0:none/1:log]	R + B	record web forward logs
		clear		R + B	clear log
		display	[access|attack|error|ipsec|ike|javablocked|mten|packetfilter|pki|tcpreset|urlblocked|urlforward]	R + B	display all logs or specify category logs
		errlog		R + B	
			clear	R + B	display log error
			disp	R + B	clear log error
			online	R + B	turn on/off error log online display
		load		R + B	load the log setting buffer
		mail		R + B	
			alertAddr [mail address]	R + B	send alerts to this mail address
			display	R + B	display mail setting
			logAddr [mail address]	R + B	send logs to this mail address
			schedule display	R + B	display mail schedule
			schedule hour [0-23]	R + B	hour time to send the logs
			schedule minute [0-59]	R + B	minute time to send the logs
			schedule policy [0:full/1:hourly/2:daily/3:weekly/4:none]	R + B	mail schedule policy
			schedule week [0:sun/1:mon/2:tue/3:wed/4:thu/5:fri/6:sat]	R + B	weekly time to send the logs
			server [domainName/IP]	R + B	mail server to send the logs
			subject [mail subject]	R + B	mail subject
		save		R + B	save the log setting buffer
		syslog		R + B	
			active [0:no/1:yes]	R + B	active to enable unix syslog
			display	R + B	display syslog setting
			facility [Local ID(1-7)]	R + B	log the messages to different files
			server [domainName/IP]	R + B	syslog server to send the logs
		updateSvrIP	<minute>	R + B	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		R + B	
			switch <0:on|1:off>	R + B	active to enable log consolidation
			period	R + B	consolidation period (seconds)
			msglist	R + B	display the consolidated messages
		switch			
			bmlog <0:no|1:yes>	R + B	active to enable broadcast/multicast log
			display	R + B	display switch setting
			trilog <0:no|1:yes>	R + B	active to enable triangle route log

	mbuf			R + B	
		link	link	R + B	list system mbuf link
		pool	<id> [type][num]	R + B	list system mbuf pool
		status		R + B	display system mbuf status
		disp	<address>[1|0]	R + B	display mbuf status
		cnt		R + B	
			disp	R + B	display system mbuf count
			clear	R + B	clear system mbuf count
		debug	[on|off]	R + B	
	mode	<router/bridge>		R + B	switch router and bridge mode
	pwderrtm		[minute]	R + B	Set or display the password error blocking timeout value.
	rn			R	
		load	<entry no.>	R	load remote node information
		disp	<entry no.>(0:working buffer)	R	display remote node information
		nat	<none|sua|full_feature>	R	config remote node nat
		nailup	<no|yes>	R	config remote node nailup
		mtu	<value>	R	set remote node mtu
		save	[entry no.]	R	save remote node information
		pingcheck	[on|off]	U + R	enable/disable WAN pingcheck
	smt			R + B	not support in this product
	stdio		[second]	R + B	change terminal timeout value
	time		[hour [min [sec]]]	R + B	display/set system time
	tos			R + B	
		display		R + B	display all runtime TOS
		listPerHost		R + B	display all host session count
		debug	[on|off]	R + B	turn on or off TOS debug message
		sessPerHost	<number>	R + B	configure session per host value
		timeout		R + B	
			display	R + B	display all TOS timeout information
			icmp <idle timeout>	R + B	set idle timeout value
			igmp <idle timeout>	R + B	set idle timeout value
			tcpsyn <idle timeout>	R + B	set idle timeout value
			tcp <idle timeout>	R + B	set idle timeout value
			tcpfin <idle timeout>	R + B	set idle timeout value
			udp <idle timeout>	R + B	set idle timeout value
			gre <idle timeout>	R + B	set idle timeout value
			esp <idle timeout>	R + B	set idle timeout value
			ah <idle timeout>	R + B	set idle timeout value
			other <idle timeout>	R + B	set idle timeout value
		tempTOSDisplay		R + B	display temporal TOS records.
		tempTOSTimeout	[timeout value]	R + B	set/display temporal timeout value
	trcdisp	parse, brief, disp		R + B	monitor packets
	trclog			R + B	
	trcpacket			R + B	
	syslog			R + B	
		server	[destIP]	R + B	set syslog server IP address
		facility	<FacilityNo>	R + B	set syslog facility
		type	[type]	R + B	set/display syslog type flag
		mode	[on|off]	R + B	set syslog mode
	version			R + B	display RAS code and driver version
	view		<filename>	R + B	view a text file
	wdog			R + B	
		switch	[on|off]	R + B	set on/off wdog
		cnt	[value]	R + B	display watchdog counts value: 0-34463

	romreset			R + B	restore default romfile
	server				
		access	<telnet|ftp|web|icmp|snmp|dns> <value>	R + B	set server access type
		load		R + B	load server information
		disp		R + B	display server information
		port	<telnet|ftp|web|snmp> <port>	R + B	set server port
		save		R + B	save server information
		secureip	<telnet|ftp|web|icmp|snmp|dns> <ip>	R + B	set server secure ip addr
		certificate	<https|ssh> [certificate name]	R + B	set server certificate
		auth_client	<https> [on|off]	R + B	specifies whether the server authenticates the client
	fwnotify			R + B	
		load		R + B	load fwnotify entry from spt
		save		R + B	save fwnotify entry to spt
		url	<url>	R + B	set fwnotify url
		days	<days>	R + B	set fwnotify days
		active	<flag>	R + B	turn on/off fwnotify flag
		disp		R + B	display firmware notify information
		check		R + B	check firmware notify event
		debug	<flag>	R + B	turn on/off firmware notify debug flag
	cmgr			R + B	
		trace		R + B	
			disp <ch-name>	R + B	show the connection trace of this channel
			clear <ch-name>	R + B	clear the connection trace of this channel
		cnt	<ch-name>	R + B	show channel connection related counter
	socket			R + B	display system socket information
	filter			R + B	
		netbios		R + B	
			disp	R + B	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>	R + B	config netbios filter
	roadrunner			R	
		debug	<level>	R	enable/disable roadrunner service 0: diable <default> 1: enable
		display	<iface name>	R	display roadrunner information iface-name: enif0, wanif0
		restart	<iface name>	R	restart roadrunner
	ddns			R + B	
		debug	<level>	R + B	enable/disable ddns service
		display	<iface name>	R + B	display ddns information
		restart	<iface name>	R + B	restart ddns
		logout	<iface name>	R + B	logout ddns
	cpu			R + B	
		display		R + B	display CPU utilization
	upnp			R	
		active	[0:no/1:yes]	R	Activate or deactivate the saved upnp settings
		config	[0:deny/1:permit]	R	Allow users to make configuration changes. through UPnP
		display		R	display upnp information
		firewall	[0:deny/1:pass]	R	Allow UPnP to pass through Firewall.
		load		R	save upnp information

		reserve	[0:no/1:yes]	R	Reserve UPnP NAT rules in flash after system bootup.
		save		R	save upnp information

Exit Command Home

Command				Flag	Description
exit				R + B	exit smt menu

Device Related Command Home

Command					Description
dev					
	channel				
		drop	<channel_name>	R + B	drop channel
	dial		<node#>	R + B	dial to remote node

Ethernet Related Command Home

Command				Flag	Description
ether				R + B	
	config			R + B	display LAN configuration information
	driver			R + B	
		cnt		R + B	
			disp <name>	R + B	display ether driver counters
		ioctl	<ch_name>	R + B	Useless in this stage.
		status	<ch_name>	R + B	see LAN status
	version			R + B	see ethernet device type
	pkttest				
		disp			
			packet <level>	R + B	set ether test packet display level
			event <ch> [on|off]	R + B	turn on/off ether test event display
		sap	[ch_name]	R + B	send sap packet
		arp	<ch_name> <ip-addr>	R + B	send arp packet to ip-addr
	debug				
		disp	<ch_name>	R + B	display ethernet debug infomation
		level	<ch_name> <level>	R + B	set the ethernet debug level level 0: disable debug log level 1:enable debug log (default)
	edit			R + B	
		load	<ether no.>	R + B	load ether data from spt
		mtu	<value>	R + B	set ether data mtu
		speed	<speed>	R + B	set ether data speed
		save		R + B	save ether data to spt
	dynamicPort				
		dump		U+R+B	display the relation between physical port and channel.
		set	<port> <type>	U+R+B	set physical port belongs to which channel.
		spt		U+R+B	display channel setting stored in SPT.

POE Related Command (All commands can only be used in Router Mode) Home

Command				Description
poe				
	status		[ch_name]	see poe status
	dial		<node>	dial a remote node
	drop		<node>	drop a pppoe call

	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 (All commands can only be used in Router Mode) Home

Command				Description
pptp				
	dial		<rn-name>	dial a remote node
	drop		<rn-name>	drop a remote node call
	tunnel		<tunnel id>	display pptp tunnel information

AUX Related Command (All commands can only be used in Router Mode) Home

Command				Description
aux				
	atring		<device name>	Command the AT command to the device.
	cnt			
		disp	<device name>	display aux counter information
		clear	<device name>	clear aux counter information
	drop		<device name>	disconnect
	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
	redirect		<device name>	invalid
	signal		<device name>	show aux signal

Configuration Related Command
(All commands can be used in both Router Mode and Bridge Mode) 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#>
	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 #>
edit	firewall	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		The threshold to stop deleting the old half-opened

			<0~255>		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#>	action <permit | drop | reject>	Edit whether a packet is permitted, dropped or rejected when it matches this rule
				name <string>	Edit/Update rule name with <string>
				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 port#> <end port#>	Select and edit a destination port range of a packet which comply to this rule.
				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
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
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.

IP Related Command Home

Command				FLag	Description
ip					
	address		[addr]		display host ip address
	alias		<iface>	R	alias iface
	aliasdis		<0|1>	R	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
	arp				
		status	<iface>		display ip arp status
	dhcp		<iface>	R	

		client		R	
			release	R	release DHCP client IP
			renew	R	renew DHCP client IP
			release <entry num>	R	release specific entry of the dhcp server pool
		status	[option]	R	show dhcp status
	dns			R	
		query		R	
			address <ipaddr> [timeout]	R	resolve ip-addr to name
			Debug <num>	R	enable dns debug value
			Name <hostname> [timeout]	R	resolve name to multiple IP addresses
			Status	R	display dns query status
			Table	R	display dns query table
		server	<primary> [secondary] [third]	R	set dns server
		stats		R	
			Clear	R	clear dns statistics
			Disp	R	display dns statistics
		table		R	display dns table
		default	<ip>	R	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 server ip>		edit dns NS record
			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			R + B	
		debug	[on|off]	R + B	set http debug flag
	icmp				
		status		R + B	display icmp statistic counter
		discovery	<iface> [on|off]	R + B	set icmp router discovery flag
	ifconfig		[iface] [ipaddr] [broadcast <addr> |mtu <value>|dynamic]	R + B	configure network interface

	ping		<hostid>	R + B	ping remote host
	route			R	
		status	[if]	R	display routing table
		add	<dest_addr|default>[/<bits>] <gateway> [<metric>]	R	add route
		addiface	<dest_addr|default>[/<bits>] <gateway> [<metric>]	R	add an entry to the routing table to iface
		drop	<host addr> [/<bits>]	R	drop a route
	status			R + B	display ip statistic counters
	stroute			R	
		display	[rule # | buf]	R	display rule index or detail message in rule.
		load	<rule #>	R	load static route rule in buffer
		save		R	save rule from buffer to spt.
		config		R	
			name <site name>	R	set name for static route.
			destination <dest addr>[/<bits>] <gateway> [<metric>]	R	set static route destination address and gateway.
			mask <IP subnet mask>	R	set static route subnet mask.
			gateway <IP address>	R	set static route gateway address.
			metric <metric #>	R	set static route metric number.
			private <yes|no>	R	set private mode.
			active <yes|no>	R	set static route rule enable or disable.
	udp			R + B	
		status		R + B	display udp status
	tcp			R + B	
		status	[tcb] [<interval>]	R + B	display TCP statistic counters
	telnet		<host> [port]	R + B	execute telnet clinet command
	traceroute		<host> [ttl] [wait] [queries]	R + B	send probes to trace route of a remote host
	xparent			R	
		join	<iface1> [<iface2>]	R	join iface2 to iface1 group
		break	<iface>	R	break iface to leave ipxparent group
	urlfilter			R + B	
		customize		R + B	
			display	R + B	display customize action flags
			actionFlags [filterList/disableAllExceptTrusted/unblock RWFToTrusted/keywordBlock/fullPath/case Insensitive/fileName][enable/disable]	R + B	set action flags
			logFlags [type(1-3)][enable/disable]	R + B	set log flags
			add [string] [trust/untrust/keyword]	R + B	add url string
			delete [string] [trust/untrust/keyword]	R + B	delete url string
			reset	R + B	clear all information
		general		R + B	
			enable	R + B	enable/disable url filter function
			display	R + B	display content filer’s general setting
			webFeature	R + B	[block/nonblock] [activex/java/cookei/webproxy]
			timeOfDay[always/hh:mm] [hh:mm]	R + B	set block time
			exemptZone display	R + B	display exemptzone information
			exemptZone actionFlags [type(1-3)][enable/disable]	R + B	set action flags
			exemptZone add [ip1] [ip2]	R + B	add exempt range
			exemptZone delete [ip1] [ip2]	R + B	delete exempt range

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

			tcpother [timeout]	R	set nat tcp other timeout value
			udp [port] <value>	R	set nat udp timeout value of specific port
		update		R	create nat system information from spSysParam
		iamt	<iface>	R	display nat iamt information
		iface	<iface>	R	show nat status of an interface
		lookup	<rule set>	R	display nat lookup rule
		new-lookup	<rule set>	R	display new nat lookup rule
		loopback	[on|off]	R	turn on/off nat loopback flag
		reset	<iface>	R	reset nat table of an iface
		server		R	
			disp	R	display nat server table
			load <set id>	R	load nat server information from ROM
			save	R	save nat server information to ROM
			clear <set id>	R	clear nat server information
			edit active <yes|no>	R	set nat server edit active flag
			edit svrport <start port> [end port]	R	set nat server server port
			edit intport <start port> [end port]	R	set nat server forward port
			edit remotehost <start ip> [end ip]	R	set nat server remote host ip
			edit leasetime [time]	R	set nat server lease time
			edit rulename [name]	R	set nat server rule name
			edit forwardip [ip]	R	set nat server server ip
			edit protocol [protocol id]	R	set nat server protocol
			edit clear	R	clear one rule in the set
		service		R	
			irc [on|off]	R	turn on/off irc flag
			xboxlive [on|off]	R	turn on/off xboxlive flag
			aol [on|off]	R	Turn on/off aol flag
		resetport		R	reset all nat server table entries
		incikeport	<iface>[on|off]	R	turn on/off increase ike port flag
		session	[session per host]	R	set nat session per host value
		deleteslot	<iface> <slot>	R	delete specific slot of iface
		routing	[0:LAN] [0:no|1:yes]	R	set NAT routing attributes
	igmp			R	
		debug	[level]	R	set igmp debug level
		forwardall	[on|off]	R	turn on/off igmp forward to all interfaces flag
		querier	[on|off]	R	turn on/off igmp stop query flag
		iface		R	
			<iface> grouptm <timeout>	R	set igmp group timeout
			<iface> interval <interval>	R	set igmp query interval
			<iface> join <group>	R	join a group on iface
			<iface> leave <group>	R	leave a group on iface
			<iface> query	R	send query on iface
			<iface> rsptime [time]	R	set igmp response time
			<iface> start	R	turn on of igmp on iface
			<iface> stop	R	turn off of igmp on iface
			<iface> ttl <threshold>	R	set ttl threshold
			<iface> v1compat [on|off]	R	turn on/off v1compat on iface
		robustness	<num>	R	set igmp robustness variable
		status		R	dump igmp status

IPSec Related Command (All commands can only be used in Router Mode) 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.
				Remark: Only supported in ZyWALL100
		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.
	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	<rule index> <policy index>		Initiate IPSec rule <#> policy <#> from ZyWALL box
	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 | 3:RSASignature+XAUTH>	Set authentication method in phase 1 in IKE
		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
	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”.
	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.
	Drop		<policy index>	Drop a active tunnel.

Firewall Related Command (All command can be used in both Router Mode and Bridge Mode)Home

Command					Description
sys	Firewall				
		acl			
			disp		Display specific ACL set # rule #, or all ACLs.
		active	<yes|no>		Active firewall or deactivate firewall
		clear			Clear firewall log
		cnt			
			disp		Display firewall log type and count.
			clear		Clear firewall log count.
		disp			Display firewall log
		online			Set firewall log online.
		dynamicrule			
			display		Display firewall dynamic rules
		dos			
			smtp		Set SMTP DoS defender on/off
			display		Display SMTP DoS defender setting.
			ignore		Set if firewall ignore DoS in lan/wan/dmz/wlan
		ignore			
			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
(All commands can be used in both Router Mode and Bridge Mode) Home

Command				Description
certificates				
	my_cert			
		create		
			selfsigned <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_selfsigned [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.
	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 name>		Rename the specified directory service. <old name> specifies the name of the directory server to be renamed. <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
(All commands can be used in both Router Mode and Bridge Mode) 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
	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.
	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.
	show	interface	lan			Show the interface settings of LAN
			wan			Show the interface settings of WAN
		class	lan			Show the classes settings of LAN

			wan			Show the classes settings of WAN
		filter	lan			Show the filters settings of LAN
			wan			Show the filters settings of WAN
		statistics	lan			Show the statistics of the classes in LAN
			wan			Show the statistics of the classes in WAN
	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.
	config	save				Save the configuration.
		load				Load the configuration.
		clear				Clear the configuration.

Bridge Related Command Home

Command				Flag	Description
bridge				R + B	
	cnt			R + B	related to bridge routing statistic table
		disp		R + B	display bridge route counter
		clear		R + B	clear bridge route counter
	iface			R + B	Related to “bridge mode” access interface
		active	<yes/no>	R + B	Active bridge mode iface or not
		address	[ip]	B	Remote access IP address
		dns1	[ip]	B	First DNS server
		dns2	[ip]	B	Second DNS server
		dns3	[ip]	B	Third DNS server
		mask	[network mask]	B	Network mask
		gateway	[gateway ip]	B	Network gateway
		display		B	Display whole interface information
	stat			R + B	related to bridge packet statistic table
		disp		R + B	display bridge route packet counter
		clear		R + B	clear bridge route packet counter

myZyXEL.com Command Home

Command				Description	Flag
sys					U+R
	myZyxelCom				U+R
		checkUserName	<username>	Check the username exists or not	U+R
		register	<username> <password> <email> <countryCode>	Inout the registration information, include username, password, email, and country code.	U+R
		trialService	<service>, 1 : CF, 2 : 3in1, 3 : CF + 3in1	Input the service that to be tried.	U+R

		serviceUpgrade	<licence key>	Inout license key that you want to let service from trial to standard	U+R
		serviceRefresh	NULL	Refresh the myZyXEL.com service status	U+R
		display	NULL	Display all myZyXEL.com setting	U+R
		serviceDisplay	NULL	Display all service status, include expired day.	U+R

Vantage Related Command Home

Command				Description
cnm	active	[0/1]		Display or set the CNM features to enable or disable . 0: disable 1: enable CNM features and communicate through WAN interface.
	sgid	[ID]		Display or set sgid which is the unique ID of the device in Vantage.
	managerIP	[addr]		Display or set the IP of Vantage server/COMServer which manage this device. [addr] specifies the IP of the Vantage serve/COMServer.
	Debug	[0/1]		Display or set the way of outputting CNM debug messages. 0: disable debug messages. 1: output the debug messages to console and can accept SGMP inquire message only after the device is registered to Vantage server.
	version			Display the Vantage agent version.
	keepalive	[seconds]		Display or set the keepalive report time. 10~655: Valid values, default 60 seconds.