

ZyXEL

Firmware Release Note

ZyWALL USG 100

Release 2.10(AQQ.1)

Date: June 6, 2008

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Supported Platforms:

ZyXEL ZyWALL USG 100

Versions:

ZLD Version: V2.10(AQQ.1) | 2008-06-06 10:38:50

BootModule Version: V1.08 | 12/04/2007 15:36:17

Files lists contains in the Release ZIP file

File name : 210AQQ1.bin

Purpose: This binary firmware image file is for normal system update.

Note: The firmware update may take five or more minutes depending on the scale of device configuration. The more complex configuration will take more update time. Do not turn off or reset the ZyWALL while the firmware update is in progress. The firmware might get damaged, if device loss power or you reset the device during the firmware upload. You might need to refer to Appendix 3 of this document to recover the firmware.

File name : 210AQQ1.conf

Purpose: This ASCII file contains default system configuration commands.

File name : 210AQQ1b1.pdf

Purpose: This release file.

File name : 210AQQ1b1.ri

Purpose: This binary firmware recovery image file is for emergent system firmware damage recovery only.

Note: The ZyWALL firmware could be damaged, for example by the power going off or pressing Reset button during a firmware update.

File name : firmware.xml

Purpose: This file is needed by ZyXEL Centralized Network Management (CNM) 3.0 or after.

Read Me First

1. The system default configuration is summarized as below:
 - The default device administration username is “admin”, password is “1234”.
 - The default LAN interface is lan1, which are P3, P4 and P5 ports on the front panel. The default IP address of lan1 is 192.168.1.1/24.
 - By default, WWW/SSH/SNMP service can only be accessed from LAN subnet.
 - The default WAN interface is wan1, and the secondary WAN interface is wan2. These two interfaces will automatically get IP address using DHCP by default.
2. It is recommended that user backup the “startup-config.conf ” file first before upgrading firmware. The backup configuration file can be used if user wants to downgrade to an older firmware version.
3. If user upgrades from previous released firmware to this version, there is no need to restore to system default configuration.
4. If there is difficult to configure via GUI (popup java script error, etc). It is recommended to logout the configuration window and clear browser cache first, then try to login and configure again.
5. To reset device to system default, user can press RESET button for 5 seconds and the device will reset itself to system default configuration then reboot automatically.
 - Note 1: After resetting, the original configuration will be removed. It is recommended to backup the configuration before performing this operation.
 - Note 2: After resetting, if user has subscribed to security licenses, user needs to connect to internet with myZyXEL.com and refresh license information.
6. If there is problem to reboot successfully after firmware upgrade, please refer to Appendix 3: Firmware Recovery.

Known Issues:

Anti-Virus:

1. [SPR: 061218052]
[Symptom] Question mark '?' is a special character for ZyWALL and if it is used in white/black list, it may not work correctly.
[Workaround] Use "Ctrl+V" + "?" or use GUI to configure this feature.

ALG:

1. [SPR: 070228428]
[Symptom] SIP ALG might malfunction if SIP client is using new version of XLite. It will also make SIP BWM in App Patrol malfunction.

App. Patrol:

1. [SPR: 070530582]
[Symptom] App. Patrol provides granular control over IM/P2P such as login, file downloading, voice/video over IP. In current design, if administrators choose to block one of these actions, the connection for the IM/P2P might be blocked as well.

Build in Service:

1. [SPR: 061014444]
[Symptom] Console might show weird characters when leave board running for a long time (overnight).
[Workaround] Please wait for around 1 minute and reset terminal; the terminal will be back to normal operation.

Cellular

1. [SPR: 071122531]
[Symptom] Using Sierra Wireless AC850, and change then apply the band to "GPRS/EDGE(GSM) only". Although the dialing is success, but the current band on GUI is still "UMTS".
[Workaround] The AC850 is unable to be queried after connected. So user can disconnect first then connect again to get the correct status.
2. [SPR: 080310472]
[Symptom] CPU usage keeps 99% while uploading more than 300kbps UDP packets through the E220 3G device.
3. [SPR: 080522282]
[Symptom] There is no 3G strength and quality information when device is connected.

[Workaround] Refresh few times to retrieve the information.

Connectivity Check

1. [SPR: 080312637]

[Symptom] The traffic may not go out for a while when connectivity-check checks the connectivity is back to normal.

[Workaround] Stop attempting to connect the remote for a while, the retry again.

2. [SPR: 080312640]

[Symptom] Even there is not outgoing traffic through the PPP/3G connection, the PPP/3G dial-on-demand connection will not be disconnected when enabled the connectivity check function.

[Workaround] Avoid setting the connectivity check on dial-on-demand interface.

Device-HA

1. [SPR: 071127734]

[Symptom] PC client may temporarily unable to connect to Device-HA backup device after backup taking over for master.

[Workaround] The virtual MAC address will be switch to backup device, and some PC clients does not accept GARP notification, so PC client may needs to wait its ARP entry timeout or refresh it manually.

DHCP

1. [SPR: 070912654, 071120331, 71228654]

[Symptom] Reserve a IP-MAC of a DHCP client in DHCP table will cause reserved hostname turn to “none”, and after unreserved, this client will disappear from DHCP table.

Dial-in management:

1. [SPR: 070112673]

[Symptom] Dial in service can't work with ISDN device.

2. [SPR: 070112671]

[Symptom] After remote modem logout CLI terminal, local modem will not drop connection immediately. It will drop connection after 20 seconds.

[Workaround] Wait for 20 seconds, connection will be dropped. Remote user can dial in again.

Firewall

1. [SPR: 070905212]

[Symptom] When ZyWALL provides DHCP service, the firewall cannot block DHCP packets from client to ZyWALL.

IDP/ADP:

1. [SPR: 070928616]
[Symptom] The IDP custom signature might disappear after editing.
2. [SPR: 080228001]
[Symptom] Enable ADP on any to ZyWALL rule with drop all port scan and HTTP inspection, and access device GUI, ADP may have false alarm on port scan and HTTP inspection.

INTERFACE:

1. [SPR: 070105290]
[Symptom] Modem will not disconnect right away if disabling aux interface while modem is dialing.
[Workaround] Wait for 15 seconds, it will be disconnected.

IPSec VPN:

1. [SPR: 070814164]
[Symptom] ZyWALL does not support DNAT over IPSec with “Many one-to-one” case.
2. [SPR: 070814168]
[Symptom] VPN tunnel could not be established when 1) a non ZyWALL peer gateway reboot and 2) ZyWALL has a previous established Phase 1 with peer gateway, and the Phase 1 is not yet expired. Under those conditions, ZyWALL will continue to use the previous phase 1 SA to negotiate the Phase 2 SA. It would result in phase 2 negotiation to fail.
[Workaround] User could disable and re-enable phase 1 rule in ZyWALL or turn on DPD function to resolve problem.
3. [SPR: 070814169]
[Symptom] PKI does not interoperate with Windows CA server, when using SCEP.

L2TP:

1. [SPR: 070628839]
[Symptom] Sometimes, L2TP could not be established when there are policies overlapped IPSec tunnel used by L2TP.
[Workaround] Do not configure policy overlapped IPSec tunnels with L2TP.
2. [SPR: 080311533]
[Symptom] CPU usage keeps in 99% while using L2TP and having IPSec Rules on DUT.

Log System:

1. [SPR: 070814152]
[Symptom] CPU utilization will reach 100% when system generates too many system logs. In extreme cases, it might impact normal traffic and user may experience slow GUI/CLI response.
[Workaround] Turn off unnecessary logs.

SSL VPN

1. [SPR: 061220177]
[Symptom] Sometimes, Network Extender has error message and user cannot get ppp interface.
[Workaround] Close all browsers and login again
2. [SPR: 070102074]
[Symptom] To add a folder will cause Application and File Sharing part was hidden.
[Workaround] Use Windows 2000 SP4 or later then this issue disappears.
3. [SPR: 070415641]
[Symptom] OWA cannot logout normally if the browser is IE7
[Workaround] This bug is happened on OWA2003 SP1 with IE7 only. Use IE6 instead
4. [SPR: 070517901]
[Symptom] In CIFS, filename will error after downloading a file with Chinese name and no file extension when browser is IE
5. [SPR:070523177]
[Symptom] SSLVPN Reverse Proxy has the problem of page partial load in MAC's safari browser.
[Workaround] Safari has bug on rendering webpage. Reload the page may solve. Suggest using FireFox/Camino to access.
6. [SPR: 080221664]
[Symptom] Cannot use reverse proxy and network extension with Firefox 2.X and JRE 1.6.0_04
[Workaround] Use JRE other than version 1.6.0_04

User Aware:

1. [SPR: 070814170]
[Symptom] In some occasions, Outlook Express might be terminated if both ZyWALL force authentication and https force redirect features are enabled and access user does not login to ZyWALL first.
2. [SPR: 070202237]
[Symptom] An access user could gain access right after signing in ZyWALL (if properly configured) and log out when he don't need to access the network resources anymore. But

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sometimes user stays in signing in state after he closes the access window directly and the resources could still be accessible.

[Workaround] For access users, user logout button to logout instead of closing window directly. For administrations, enable user lease/idle detection for access users.

3. [SPR: 070813119]

[Symptom] Device supports authenticating user remotely by creating AAA method which includes AAA servers (LDAP/AD/Radius). If a user uses an account which exists in 2 AAA server and supplies correct password for the latter AAA server in AAA method, the authentication result depends on what the former AAA server is. If the former server is Radius, the authentication would be granted, otherwise, it would be rejected.

[Workaround] Avoid having the same account in AAA servers within a method.

4. [SPR: 071025415]

[Symptom] Authentication is failed while doing Avalanche SSL VPN stress testing.

Wireless LAN:

1. [SPR: 080314883]

[Symptom] The channel is never changed when user select the auto-channel and apply more than once.

[Workaround] Change any settings in WLAN general page, and re-apply again.

Features:

Modifications in 2.10(AQQ.1)b1 - 2008/06/06

1. [ENHANCEMENT] -Puer
Symptom:
Add LAN2 Zone and lan2 interface.

2. [ENHANCEMENT] -Scott
Symptom:
Support the band selection of Huawei E220 3G device.

3. [ENHANCEMENT] -Max
Symptom:
ADP enhances to monitor both system-self in and out traffics.

4. [ENHANCEMENT] -Eddy.W
Symptom:
Display error CLI on console while apply error configuration in booting.

5. [ENHANCEMENT] -Eddy.W
Symptom:
Extend the maximum number of VRRP group to 32.

6. [ENHANCEMENT] -Puer
Symptom:
Accept the space character in IPSec pre-shared key.

7. [ENHANCEMENT] -Jon
Symptom:
L2TP over IPSec can be established when the L2TP user is behind NAT router.

8. [BUG FIX] 080508413 -Max
Symptom:
Duplicate SA.
Condition:
ZW1050 A ↔ USG 300 B
 1. A and B create a pair IPSec tunnel, both set the nail-up.

2. After the SA is established, delete the SA and after the new SA is established, there is no duplicate SA.
3. Both set policy-enforcement, delete the SA and monitor it again.
The duplicate SA happens.

9. [BUG FIX] 080108254 -Max

Symptom:

Cannot Access OWA in Reverse Proxy mode.

Condition:

1. Edit web GUI→User/Group, add “Jerry1”, “Jerry2”, “Jerry3” and “Jerry4” user type account, and add “Jerry3” into “JerryG1” group, add “Jerry4” into “JerryG2” group
2. Edit web GUI→Object→Address, add rules
 - Name=Exchange2000, Address Type=HOST, IP Address=x.x.x.x
 - Name=Exchange2003, Address Type=HOST, IP Address=x.x.x.x
3. Edit web GUI→Object→SSL Application, add rules
 - Type=Web Application, Name=Exchange2000, URL=http://x.x.x.x, Server Type=OWA
 - Type=Web Application, Name=Exchange2003, URL=http://x.x.x.x, Server Type=OWA
4. Edit web GUI→SSL VPN→Access Privilege, add rules
 - Name=Jerry1_JerryG1_OWA, Description=Jerry1_JerryG1_OWA, User / Group Member=Jerry1 and JerryG1, SSL Application Member=Exchange2000
 - Name=Jerry2_JerryG2_OWA, Description=Jerry2_JerryG2_OWA, User / Group Member=Jerry2 and JerryG2, SSL Application Member=Exchange2003

10. [BUG FIX] 080225768 -Scott

Symptom:

3G “device profile” may not work when user need authentication.

Condition:

1. Use a 3G card with saving authentication on card before insert device.
2. Insert card to device and select “device profile” to get profile form device.
3. Apply to connect will timeout fail.
4. Set custom profile will successful.

11. [BUG FIX] 080508415 -Puer

Symptom:

Send LOG-Mail have on end in mail character (0x00).

Condition:

Reported in ITS#27760.

According to RFC 2822, NUL character should not appear in mail message anymore.

12. [BUG FIX] 080306272 -Max

Symptom:

IPSec module is not notified by the MTU change of interfaces

Condition:

1. Change the MTU of interface ge2 to 1000
2. Build a tunnel from ge2 to remote gateway
3. Send traffic from lan to the tunnel, the packet should be 1000~1400 byte and DF bit is set. For example, using "hping2 -2 -y -d 1400 -s 2000 -p 2000 192.168.12.1".
4. The traffic should be dropped, but actually it passes through the tunnel.

13. [BUG FIX] 080306311 -Scott

Symptom:

TFTP traffic cannot pass through IPSec tunnel.

Condition:

TFTP client $\leftarrow \rightarrow$ USG1000 \leftarrow IPSec Tunnel \rightarrow USG300 \leftrightarrow TFTP server

1. TFTP client try to get the file from TFTP server.
2. But there are many "rule not found" logs in USG300 and TFTP client cannot get the file finally.

14. [BUG FIX] 080310479 -Max

Symptom:

After Click rule sort by name from IDP profile, it doesn't loading any policy in IDP profile.
ADP profile has this issue, too.

Condition:

1. In GUI \rightarrow Anti-X \rightarrow IDP \rightarrow Profile.
2. Click rule sort by name.
3. Edit any profile, and it doesn't loading any policy in service.

15. [BUG FIX] 080311510 -Jon

Symptom:

The dial backup functionality will be failed if the "any incoming interface" is set in the policy route.

Condition:

1. Create a policy route rule with "any incoming interface".
2. The dial backup functionality with the modem will have no response.

20. [BUG FIX] 080312699 -Max

Symptom:

The ADP profile select Base Profile is none, the profile doesn't enable Protocol Anomaly any policy.

Condition:

1. In GUI Anti-x-- > ADP-- > Profile.
2. Add a profile, select one ADP base profile is none.
3. It doesn't enable protocol anomaly any policy.

21. [BUG FIX] 080313749 -Scott

Symptom:

Hope to modify the object definition of the "Add" icon in GUI → IDP → Custom Signatures page.

Condition:

As symptom.

22. [BUG FIX] 080313770 -Scott

Symptom:

Hope to modify the object-definition of manual create policy series number generate in GUI → IDP → Custom Signature.

Condition:

As symptom.

23. [BUG FIX] 080313797 -Puer

Symptom:

In GUI → Network → Interface → WLAN → General → Edit, if DHCP network setting conflict. It can't save successful after changed the un-conflict DHCP IP address.

Condition:

1. Network/Interface/WLAN/General/Edit.
2. Key-in conflict DHCP IP address and apply OK.
3. DUT shows some error message.
4. Changed the un-conflict DHCP IP address and apply OK again.
5. It still showed error message. It can't save successful.

24. [BUG FIX] 080313801 -Scott

Symptom:

The local ID of VPN Phase 1 is not correct when you configure it by Wizard.

Condition:

1. Setup a VPN by Wizard.
2. Use a FQDN in “Secure Gateway”.
3. The Wizard will create a wrong “Local ID” of Phase 1.
4. The wrong Local ID is a FQDN of “Secure Gateway”.

25. [BUG FIX] 080314880 -Puer

Symptom:

DUT exception after changed 802.11 mode from 802.11b/g to 802.11b.

Condition:

1. In ASUS L3400 NB. G-202 installed in USB 1.1. The driver was 1.7.1.4 and connected to USG100 without security.
2. When I configured DUT’s 802.11 mode from 802.11b/g to 802.11b. The DUT would exception.

26. [BUG FIX] 080314900 -Max

Symptom:

The client can’t get IP address from the DUT when we enable two DHCP relay servers.

Condition:

1. Enable two DHCP relay servers on a interface. One is real and another is fake.
2. The client can’t get ip address from the DUT.
3. It works if we only enable one relay server on a interface.
4. We can reproduce by this procedure:
 - a. One real server + one fake server (client still can get IP).
 - b. One fake server + one real server (client still can get IP).
 - c. One real server + one fake server (client can’t get IP).

27. [BUG FIX] 080317010 -Max

Symptom:

Configuration file cannot be renamed and deleted.

Condition:

1. Upload configuration file with filename including SPACE character to device via FTP.
2. Cannot rename this configuration file via either CLI or GUI

28. [BUG FIX] 080321299 -Scott

Symptom:

“Reset to system default configuration” message on console is not clear.

Condition:

1. Push "Reset" button to reset to system default.
2. Console shows message as below. Wish message should be more clear like "Reset to system default configuration".

Welcome to ZyWALL USG 100

Username: [resd] Sending signal to zyshd_wd

Got SIGUSR1

Restarting system.FLASH: AMD 16M

29. [BUG FIX] 080325386 -Puer

Symptom:

When interface wlan-1-1 of description is empty, DUT will pop-up window and tells the description is invalid.

Condition:

1. In GUI → Network → Interface → WLAN → General → Edit.
2. Description=any text, then press OK.
3. Edit interface wlan-1-1 again.
4. Description=Empty, then press OK
5. Pop-up window show description is invalid.

30. [BUG FIX] 080508421 -Eddy.W

Symptom:

PM reported CPU high - Weak signature while dealing with CIFS traffic.

Condition:

As symptom.

31. [BUG FIX] 080408357 -Puer

Symptom:

There's a wrong rule after you delete all policy routing rules.

Condition:

1. Delete all policy routing rule then reboot.
2. There's a wrong rule in virtual server list.

32. [BUG FIX] 080409455 -Eddy.W

Symptom:

When configuring RIP settings in WLAN, the zysh CLI will save it as wrong value.

Condition:

1. Use following CLI to set wlan-1-1 RIP setting :

```
Router(config)# interface wlan-1-1
Router(config-if-wlan)# ip rip send version 1
Router(config-if-wlan)# ip rip receive version 1
Router(config-if-wlan)# exit
```

2. when showing rip setting on wlan-1-1, it shows incorrect setting.

```
Router(config)# show rip interface wlan-1-1
Interface wlan-1-1 RIP Information
    send version: 2
    receive version: 1
```

(The "send version" should be 1 since we had configured it to version 1 before.)

33. [BUG FIX] 080417819 -Scott

Symptom:

Authentication failed with external authentication server while configured username is prefixed with "admin"

Condition:

1. Configure an external user admin1234C
2. Configure radius server.
3. Add admin1234 to radius server database.
4. Add group radius to default authentication method.
5. Login GUI with username admin1234.
6. Login will failed

34. [BUG FIX] 080508427 -Puer

Symptom:

Auto-Object did NOT change network conf after Bridge mode setting.

Condition:

1. Bridge GE1 & GE2 to br0 (use DHCP client).
2. Check address, you will see LAN_SUBNET is still 192.168.1.0/24 even that the GE1 network parameter is 0.0.0.0/0.
3. Reboot device.
4. Check address, now the LAN_SUBNET is 0.0.0.0/24 is fit in with GE1 network parameter.
5. Delete br0, let GE1 network parameter go back to 192.168.1.1/24.
6. Check address, you will see that LAN_SUBNET is still 0.0.0.0/0.

35. [BUG FIX] 080421943 -Scott

Symptom:

Cannot dial up VPN connection if VPN profile has “manual” string.

Condition:

1. Add one VPN Gateway object named as “gw_manual” with static remote IP.
2. Add one VPN connection object using the above gateway.
3. On device GUI, no dial-up button for this connection object.
4. This is because VPN gateway object name “gw_manual” uses keyword “manual”.

36. [BUG FIX] 080508430 -Eddy.W

Symptom:

Device failed to load signature.

Condition:

When device loads signature during booting or signature update, sometimes it will dump error message.

37. [BUG FIX] 080519061 -Scott

Symptom:

Admin login device but cannot use packet-trace command.

Condition:

1. Admin login device.
2. Input CLI “packet-trace interface wan1”.
3. The console output “socket: Operation not permitted”.

38. [BUG FIX] 080529898 -Jon

Symptom:

Device crash when user behind NAT router establishes L2TP over IPSec to it.

Condition:

1. One user behind NAT router, like under 105 subnet.
2. When establishing L2TP over IPSec to Device, crash occurred.

39. [BUG FIX] 080519045 -Scott

Symptom:

IPSec IKE manual key connection failed.

Condition:

1. Make IPSec connection with manual key.
2. The crypto is DES and sha1.
3. Try to connect, but it always failed.

40. [BUG FIX] 080528734 --Scott

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Symptom:

Configuring VPN gateway and click OK button, error occurred

Condition:

1. Take Default_L2TP_VPN_GW as example.
2. Entering edit page and click OK button, error occurred.

Features:

Modifications in 2.10(AQQ.0) - 2008/04/02

First release.

Appendix 1. Firmware upgrade / downgrade procedure

The following is the firmware **upgrade** procedure:

1. If user did not backup the configuration file before firmware upgrade, please follow the procedures below:
 - Use Browser to login into ZyWALL as administrator.
 - Click Maintenance > File Manager > Configuration File to open the Configuration File screen. Use the Configuration File screen to backup current configuration file.
 - Find firmware at www.zyxel.com in a file that (usually) uses the system model name with the .bin extension, for example, “210AQQ0C0.bin”.
 - Click Maintenance > File Manager > Firmware Package to open the Firmware Package screen. Browser to the location of firmware package and then click Upload. The ZyWALL automatically reboots after a successful upload.
 - After several minutes, the system is successfully upgraded to newest version.

The following is the firmware **downgrade** procedure:

1. If user has already backup the configuration file before firmware upgrade, please follow the procedures below:
 - Use Console/Telnet /SSH to login into ZyWALL.
 - Router>**enable**
 - Router#**configure terminal**
 - Router(config)#**setenv-startup stop-on-error off**
 - Router(config)#**write**
 - Load the older firmware to ZyWALL using standard firmware upload procedure.
 - After system uploads and boot-up successfully, login into ZyWALL via GUI.
 - Go to GUI → “File Manager” menu, select the backup configuration filename, for example, statup-config-backup.conf and press “Apply” button.
 - After several minutes, the system is successfully downgraded to older version.
2. If user did not backup the configuration file before firmware upgrade, please follow the procedures below:
 1. Use Console/Telnet /SSH to login into ZyWALL.
 2. Router>**enable**
 3. Router#**configure terminal**
 4. Router(config)#**setenv-startup stop-on-error off**
 5. Router(config)#**write**
 6. Load the older firmware to ZyWALL using standard firmware upload procedure.
 7. After system upload and boot-up successfully, login into ZyWALL via Console/Telnet/SSH.
 8. Router>**enable**
 9. Router#**write**

Now the system is successfully downgraded to older version.

Note: ZyWALL might lose some configuration settings during this downgrade procedure. It is caused by configuration conflict between older and newer firmware version. If this situation happens, user needs to configure these settings again.

Appendix 2. SNMPv2 private MIBS support

SNMPv2 private MIBs provides user to monitor ZyWALL platform status. If user wants to use this feature, you must prepare the following step:

1. Have ZyWALL mib files (zywall.mib and zyxel-zywall-ZLD-Common.mib) and install to your MIBs application (like MIB-browser). You can see zywallZLDCCommon (OLD is 1.3.6.1.4.1.890.1.6.22).
2. ZyWALL SNMP is enabled.
3. Using your MIBs application connects to ZyWALL.
4. SNMPv2 private MIBs support three kinds of status in ZyWALL:
 - (A) CPU usage: Device CPU loading (%)
 - (B) Memery usage: Device RAM usage (%)
 - (C) VPNIpsecTotalThroughput: The VPN total throughput (Bytes/s), Total means all packets(Tx + Rx) through VPN.

Appendix 3. Firmware Recovery

In some rare situation, ZyWALL might not boot up successfully after firmware upgrade. The following procedures are the steps to recover firmware to normal condition. Please connect console cable to ZyWALL.

1. Restore the Recovery Image

- If one of the following cases occur, you need to restore the “recovery image”

- Booting failed, device show error code while uncompressing “Recovery Image”.

```
DRAM POST: Testing: 262144K
DRAM Test SUCCESS !

Kernel Version: V2.4.27-AQE-2007-07-04 | 2007-10-08 13:19:57
ZLD Version: V2.00(AQE.0)-1 | 2007-10-08 15:14:27

Press any key to enter debug mode within 3 seconds.
.....

Linux/PPC load: console=ttyS0,115200 root=/dev/ram init=zyinit ""
Uncompressing Linux...inflate returned FFFFFFFD
exit
```

- Device reboot infinitely.

```
BootModule Version: V1.011 | 2007-03-30 12:22:57
DRAM: Size = 510 Mbytes
DRAM POST: Testing: 522240K OK
DRAM Test SUCCESS !

Kernel Version: V2.4.27-kernel-2007-10-08 | 2007-10-08 10:44:31
ZLD Version: V2.01(XL.0)b1 | 2007-10-08 11:37:52

Press any key to enter debug mode within 3 seconds.
.....

BootModule Version: V1.011 | 2007-03-30 12:22:57
DRAM: Size = 510 Mbytes
DRAM POST: Testing: 522240K OK
DRAM Test SUCCESS !

Kernel Version: V2.4.27-kernel-2007-10-08 | 2007-10-08 10:44:31
ZLD Version: V2.01(XL.0)b1 | 2007-10-08 11:37:52
```

- Nothing displays after “Press any key to enter debug mode within 3 seconds.” for more than 1 minute.

```
BootModule Version: V1.011 | 2007-03-30 12:22:57
DRAM: Size = 510 Mbytes
DRAM POST: Testing: 522240K OK
DRAM Test SUCCESS !

Kernel Version: V2.4.27-kernel-2006-08-21 | 2006-08-21 19:54:00
ZLD Version: V1.01(XL.0) | 2006-09-11 17:41:56

Press any key to enter debug mode within 3 seconds.
.....


```

- Startup message displays “Invalid Recovery Image”.

```
BootModule Version: V1.012 | 2007-05-10 21:05:27
DRAM: Size = 510 Mbytes
DRAM POST: Testing: 522240K OK
DRAM Test SUCCESS !

Kernel Version: V2.4.27-XL-2007-05-10 | 2007-05-10 02:15:31
ZLD Version: VZW1050_DailyBuild_New_Trunk | 2007-05-10 03:12:49

Press any key to enter debug mode within 3 seconds.
.....

Invalid Recovery Image

ERROR

Enter Debug Mode

>
```

- The message here could be “Invalid Firmware”. However, it is equivalent to “Invalid Recovery Image”.

```
Invalid Firmware!!!
ERROR
```

- Press any key to enter debug mode

```
BootModule Version: V1.011 | 2007-03-30 12:22:57
DRAM: Size = 510 Mbytes
DRAM POST: Testing: 522240K OK
DRAM Test SUCCESS !

Kernel Version: V2.4.27-kernel-2006-08-21 | 2006-08-21 19:54:00
ZLD Version: V1.01(XL.0) | 2006-09-11 17:41:56

Press any key to enter debug mode within 3 seconds.
.....
Enter Debug Mode

> █
```

- Enter atuk. The console prompts warning messages and waiting for the confirmation. Answer ‘Y’ and start to upload “recovery image” via Xmodem.

```
> atuk
This command is for restoring the "recovery image" (xxx.ri).
Use This command only when
1) the console displays "Invalid Recovery Image" or
2) the console freezes at "Press any key to enter debug mode within 3 seconds"
   for more than one minute.

Note:
Please exit this command immediately if you do not need to restore the
"recovery image".

Do you want to start the recovery process (Y/N)? (default N) █
```

- Use the Xmodem feature of terminal emulation software to upload the file.
- Wait for about 3.5 minutes until finishing Xmodem.

