

## 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: U2.4.27-XL-2007-05-10 | 2007-05-10 02:15:31
ZLD Version: U2W1050_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: U2.4.27-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.

```
Total 2120704 bytes received.
programming .....
.....
.....
.....
.....
.....
OK
>
```

```
' Enter atkz -f -l 192.168.1.1 performing the "Restore Firmware" process.
>
>
>
> atkz -f -l 192.168.1.1
```

## 2. Restore Firmware

' If "Connect a computer to port 1 and FTP to 192.168.1.1 to upload the new file" displays on the screen, you need to recover the firmware by the following procedure.

```
Building ...
Connect a computer to port 1 and FTP to 192.168.1.1 to upload the new file.
```

- ' You will use FTP to upload the firmware package. Keep the console session open in order to see when the firmware recovery finishes.
- ' Set your computer to use a static IP address from 192.168.1.2 ~ 192.168.1.254. No matter how you have configured the ZyWALL's IP addresses, your computer must use a static IP address in this range to recover the firmware.
- ' Connect your computer to the ZyWALL's port 1 (the only port that you can use for recovering the firmware).
- ' Use an FTP client on your computer to connect to the ZyWALL. This example uses the ftp command in the Windows command prompt. The ZyWALL's FTP server IP address for firmware recovery is 192.168.1.1
- ' Log in without user name (just press enter).
- ' Set the transfer mode to binary. Use "bin" (or just "bi" in the Windows command prompt).
- ' Transfer the firmware file from your computer to the ZyWALL (the command is "put 1.01(XL.0)C0.bin" in the Windows command prompt).

```
C:\>ftp 192.168.1.1
Connected to 192.168.1.1.
220--<<*>>-.: << Welcome to PureFTPd 1.0.11 >> .:--<<*>>--
220-You are user number 1 of 50 allowed
220-Local time is now 03:21 and the load is 0.00. Server port: 21.
220-Only anonymous FTP is allowed here
220 You will be disconnected after 15 minutes of inactivity.
User <192.168.1.1:(none)>:
230 Anonymous user logged in
ftp> bin
200 TYPE is now 8-bit binary
ftp> put E:\ftproot\ZLD_FU\101XL\101XL0CB\1.01(XL.0)CB.bin
```

```
' Wait for the file transfer to complete.
200 PORT command successful
150 Connecting to port 3675
226-213.7 Mbytes free disk space
226-File successfully transferred
226 1.057 seconds (measured here), 33.06 Mbytes per second
ftp: 36642358 bytes sent in 1.06Seconds 34503.15Kbytes/sec.
ftp>
```

- ' The console session displays "Firmware received" after the FTP file transfer is complete. Then you need to wait while the ZyWALL recovers the firmware (this may take up to 4 minutes).

```
Firmware received ...  
[Update Filesystem]  
  Updating Code  
  ..
```

- ' The message here might be "ZLD-current received". Actually, it is equivalent to "Firmware received".

```
ZLD-current received ...  
[Update Filesystem]  
  Updating Code  
  ..
```

- ' The console session displays "done" when the firmware recovery is complete. Then the ZyWALL automatically restarts.

```
.....  
.....  
.....  
.....  
.....  
.....  
done  
[Update Kernel]  
  Extracting Kernel Image  
  ..  
done  
  Writing Kernel Image ... done  
Restarting system.
```

- ' The username prompt displays after the ZyWALL starts up successfully. The firmware recovery process is now complete and the ZyWALL is ready to use.