

Firmware Recovery

In some rare situation(symptom as following), ZyWALL Firewall 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 Firewall.

1. Symptom:

- Booting success but device show error message "can't get kernel image" while device boot.

```
U-Boot 2011.03 (Development build, svnversion: u-boot:422M, exec:exported)
  (Build time: Feb 21 2013 - 10:15:57)

BootModule Version: V1.07 | 02/21/2013 10:45:46
DRAM: Size = 2048 Mbytes

Press any key to enter debug mode within 3 seconds.
.....
Wrong Image Format for bootm command
ERROR: can't get kernel image!
Start to check file system...
```

- Device reboot infinitely.

```
U-Boot 2011.03 (Development build, svnversion: u-boot:422M, exec:exported)
  (Build time: Feb 21 2013 - 10:15:57)

BootModule Version: V1.07 | 02/21/2013 10:45:46
DRAM: Size = 2048 Mbytes

Press any key to enter debug mode within 3 seconds.
.....
U-Boot 2011.03 (Development build, svnversion: u-boot:422M, exec:exported)
  (Build time: Feb 21 2013 - 10:15:57)

BootModule Version: V1.07 | 02/21/2013 10:45:46
DRAM: Size = 2048 Mbytes

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

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

```
U-Boot 2011.03 (Development build, svnversion: u-boot:422M, exec:exported)
  (Build time: Feb 21 2013 - 10:15:57)

BootModule Version: V1.07 | 02/21/2013 10:45:46
DRAM: Size = 2048 Mbytes

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

- Startup message displays "Invalid Recovery Image".

```
U-Boot 2011.03 (Development build, svnversion: u-boot:422M, exec:exported)
  (Build time: Feb 21 2013 - 10:15:57)

BootModule Version: V1.07 | 02/21/2013 10:45:46
DRAM: Size = 2048 Mbytes

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

Invalid Recovery Image

ERROR

EnterDebug Mode

ZW1100>
```

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

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

2. Recover steps

- Press any key to enter debug mode

```
U-Boot 2011.03 (Development build, svnversion: u-boot:422M, exec:exported)
  (Build time: Feb 21 2013 - 10:15:57)

BootModule Version: V1.07 | 02/21/2013 10:45:46
DRAM: Size = 2048 Mbytes

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

EnterDebug Mode

ZW1100>
```

- Enter `atgz -f -l 192.168.1.1` to configure FTP server IP address

```
>
>
>
>
> atgz -f -l 192,168,1,1
```

- Enter `atgof` to bring up the FTP server on port 2

```
ZyWALL 1100> atgof

Booting...
```

- The following information shows the FTP service is up and ready to receive FW

```
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 update 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 Firewall's IP addresses, your computer must use a static IP address in this range to recover the firmware.
- Connect your computer to the ZyWALL Firewall's port 2 (the only port that you can use for recovering the firmware).
- Use an FTP client on your computer to connect to the ZyWALL Firewall. This example uses the ftp command in the Windows command prompt. The ZyWALL Firewall'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 Firewall (the command is "put 310AAAC0C0.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 00:00 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 C:\ZLD_FW\310AAAC0C0.bin
```

- Wait for the file transfer to complete.

```
200 PORT command successful
150 Connecting to port 5001
226-944.6 Mbytes free disk space
226-File successfully transferred
226 5.540 seconds (measured here), 9.32 Mbytes per second
ftp: 54141580 bytes sent in 5.55Seconds 9760.52Kbytes/sec.
ftp>
```

- The console session displays "Firmware received" after the FTP file transfer is complete. Then you need to wait while the ZyWALL Firewall 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 Firewall automatically restarts.

```

.....
.....
.....
.....
.....
done

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

```

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

```

U-Boot 2011.03 (Development build, svnversion: u-boot:422M, exec:exported)
  (Build time: Feb 21 2013 - 10:15:57)

BootModule Version: V1.07 | 02/21/2013 10:45:46
DRAM: Size = 2048 Mbytes

Press any key to enter debug mode within 3 seconds.
.....
Start to check file system...
/dev/sda3: 33/20480 files (0.0% non-contiguous), 57481/81920 blocks
/dev/sda4: 97/23040 files (1.0% non-contiguous), 7623/92160 blocks
Done

INIT: version 2.86 booting
Initializing Debug Account Authentication Seed (DAAS)... done.
Setting the System Clock using the Hardware Clock as reference...System Cl
ock set. Local time: Tue May 28 08:54:07 GMT 2013

INIT: Entering runlevel: 3
Starting zylog daemon: zylogd zylog starts.
Starting syslog-ng.
Starting ZLD Wrapper Daemon....
Starting uam daemon.
Starting periodic command scheduler: cron.
Start ZyWALL system daemon....
.....
Got LINK_CHANGE
.....
Got LINK_CHANGE
Port [1] Copper is up --> Group [1] is up
.....Applying system configuration file, please
wait...
no startup-config.conf file, Applying system-default.conf
Use system default configuration file (system-default.conf)
ZyWALL system is configured successfully with system-default.conf

Welcome to ZyWALL 1100

Username:

```

- If one of the following cases occurs, you need to do the “firmware recovery process” again. Note that if the process is done several time but the problem remains, please collect all the console logs and send to ZyXEL/USG for further analysis.

- ◆ One of the following messages appears on console, the process must be performed again `./bin/sh: /etc/zyxel/conf/ZLDconfig: No such file`
`Error: no system default configuration file, system configuration stop!!`