



Firmware V2.23 Release Note

Date: January 2015,

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Firmware Release V2.23

1. Overview

This document provides firmware release information on ZyXEL Access Points platforms, plus new features, enhancements, read me first before firmware upgrade, known issues and workarounds information for Release V2.23.

2. What's New in This Release

With ZyXEL Firmware Release V2.23, SMBs, Enterprises and Education Schools are able to enjoy a more performing and easier deploying wireless access service to fulfill diverse business requirement across multiple locations. The new features and enhancements in this release include:

- Support for ZyXEL one network (ZON) utility

3. Supported Platforms:

ZyXEL Access Points

- NWA3160-N V2.23(UJA.8)C0
- NWA3550-N V2.23(UJB.8)C0
- NWA3560-N V2.23(UJC.8)C0

4. Files lists contains in the Release ZIP file

File name: *.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 device 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: V2.23(UJA.8)C0.conf

Purpose: This ASCII file contains default system configuration commands.

File name: V2.23(UJA.8)C0.db

Purpose: This binary file contains default system signatures.

Note: The file is only needed when doing system recovery from damage.

File name: V2.23(UJA.8)C0.ri

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

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

File name: V2.23(UJA.8)C0-MIB.zip

Purpose: The MIBs are to collect information on device. The focus of the MIBs is to let administrators collect statistical data and monitor status and performance.

5. Read Me First Before Upgrade

This section encompasses important notes while upgrading this firmware release for ZyXEL Access Points.

ZyXEL Access Points

1. If the boot code version of NWA3000-N series AP is 1.13, before the AP to be managed by ZyXEL AP controller (NXC series), firstly the AP must upgrade to the exact firmware version: **V2.23(UJA.2)/V2.23(UJB.2)/V2.23(UJC.2)**. Please refer to [Appendix - B: Firmware Upgrade Procedure](#).



2. After NWA3000-N series AP was managed by ZyXEL AP Controller (NXC series), the AP must follow the following procedures for changing the role to Hybrid controller mode.
 - a、 Upload the **V2.23 (UJA.7) /V2.23(UJB.7)/V2.23(UJC.7) F/W** via FTP to the AP.
 - b、 Upload again **V2.23 (UJA.8) /V2.23(UJB.8)/V2.23(UJC.8) or later official F/W** via FTP to the AP.
 - c、 Change its role to controller via ZySH CLI or GUI.
3. It is recommended that user backup the file “startup-config.conf” first before upgrading firmware. The backup configuration file can be used if user wants to downgrade the firmware version.
4. If user upgrades from previous released firmware to this version, there is no need to restore to system default configuration.
5. 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.
6. 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: After resetting, the original configuration will be removed. It is recommended to backup the configuration before performing this operation.

If there is problem to reboot successfully after firmware upgrade, please refer to [Appendix - C: Firmware Recovery](#).

6. Enhancements:

This section includes the enhancements in this firmware V2.23 release.

- **Support for ZyXEL One Network (ZON) utility**

This release supports ZON utility, which is Windows-based software designed to facilitate the deployment and initial set-up. ZON utility offers one consolidated interface for ZyXEL switch, Wi-Fi AP and Gateway to perform batch IP setting, firmware upgrade, password reset, and system rename functions, enables a true One Network experience from LAN, to WLAN and to the gateway, offers more efficient and more unified network setup and maintenance.

Modifications in V2.23(UJA.8)C0 - 2014/12/24

1. [ENHANCEMENT]
Support ZON (ZyXEL One Network) utility and LLDP.
2. [FEATURECHANGE]
Not support ZyXEL reset utility.
3. [ENHANCEMENT]
Upgrade openssl to 1.0.0m for heartblood vulnerability.
4. [ENHANCEMENT]
Modify mounting message from "Error trying to mount db partition 5 times" to "Start to remount db partition".
5. [FEATURE CHANGE]
SNMP OID rename from "esHybridAP" OID to be "zyxelAPMgmt".

Modifications in V2.23(UJA.7)C0 - 2014/10/07

1. [ENHANCEMENT]
Upgrade bash to fix Shellshock security vulnerability.
For detail please refer <https://access.redhat.com/articles/1200223> and <https://cve.mitre.org/cgi-bin/cvekey.cgi?keyword=Bash>

Modifications in V2.23(UJA.6)C0 - 2014/04/28

N/A

Modifications in V2.23(UJA.5)C0 - 2014/03/10

1. [ENHANCEMENT]
Enhance CAPWAP mechanism when doing negotiation.

Modifications in V2.23(UJA.4)C0 - 2014/02/18

1. [ENHANCEMENT]
Add CLI command for wireless debug.
_debug wireless_dbg <wireless debug string>
2. [ENHANCEMENT]
Add CLI command for show file and folder in the white-list
_debug show file <absolute path>
_debug show folder <absolute path>
3. [ENHANCEMENT]
Disable DFS channel switch when operation is in AP+Bridge or Bridge/Repeater mode.
4. [ENHANCEMENT]
Add CLI command to enable/disable spanning tree protocol
5. [ENHANCEMENT]
Modify SSID name validation rule to "[a-zA-Z0-9`~!@#\$\$%^&*()\-_+=,;<\\.>V?;:;'\[{\\}]\\|]{1,33}"
6. [ENHANCEMENT]
Add CLI command to disable/enable WDS link with VLAN.

Modifications in V2.23(UJA.3)C0 - 2012/12/12

1. [FEATURECHANGE]
WAS:
[GUI] keeps "Disable-Channel Switch for DFS" check box.
IS:
[GUI] Remove "Disable-Channel Switch for DFS" check box.

Modifications in V2.23(UJA.2)C0 - 2012/10/05

1. [FEATURECHANGE]
WAS: No Support L2 Isolation
IS: Support L2 Isolation, configure in SSID Page.
2. [FEATURECHANGE]
WAS: MSSID MAC Address example:

#1 SSID	40:4A:03:XX:XX:XX
#2 SSID	02:4A:03:XX:XX:XX
#3 SSID	06:4A:03:XX:XX:XX
#4 SSID	0A:4A:03:XX:XX:XX
#5 SSID	0E:4A:03:XX:XX:XX
#6 SSID	12:4A:03:XX:XX:XX

#7 SSID 16:4A:03:XX:XX:XX

#8 SSID 1A:4A:03:XX:XX:XX

IS: MSSID MAC Address example:

#1 SSID 40:4A:03:XX:XX:XX

#2 SSID E2:4A:03:XX:XX:XX

#3 SSID E6:4A:03:XX:XX:XX

#4 SSID EA:4A:03:XX:XX:XX

#5 SSID EE:4A:03:XX:XX:XX

#6 SSID F2:4A:03:XX:XX:XX

#7 SSID F6:4A:03:XX:XX:XX

#8 SSID FA:4A:03:XX:XX:XX

3. [FEATURECHANGE]

WAS: The default idle timeout value in security profile is 3000 seconds.

IS: The default idle timeout value is decreased from 3000 to 300 seconds.

4. [ENHANCEMENT]

If VLAN group numbers is less than two when AP bridge is turn on, then the AP does not change multicast to uni-cast.

5. [FEATURECHANGE]

WAS: When client receive the ACK(IP), client will issue a ARP reply for announcement.

IS: When client receive the ACK(IP), client will five three ARP requests to check if the IP had been used. Per ARP request will sleep 0.5 second. If no one replies the request, client will issue an ARP reply for announcement.

6. [ENHANCEMENT]

“Bridge+Repeater” Support

7. [ENHANCEMENT]

2.4GHz band support channel width 20/40MHz mode.

8. [ENHANCEMENT]

WEP Key accepts prefixed with “0x”, “0X or no prefixed.

9. [ENHANCEMENT]

“indoor use only” XXXXXX

10.[ENHANCEMENT]

Boot Module upgrade from 1.13 to 1.16, this supports the AP to be managed by NXC5200.

Modifications in V2.23(UJA.1)C0 - 2011/05/20

1. [ENHANCEMENT]

“AP+Bridge” Support

Modifications in V2.23(UJA.0)C0 - 2011/03/29

N/A

7. Resolved Issues:

This section includes the resolved issues in this firmware V2.23 release.

Modifications in V2.23(UJA.8)C0 - 2014/12/24

1. [BUGFIX]

Symptom:

[CLI]ping and traceroute command can't use via console and SSH.

2. [BUGFIX]

#ITS: 140104806

Symptom:

When sending Email Daily Report or System Log, domain name does not replace the parameter in the EHLO packet.

Modifications in V2.23(UJA.7)C0 - 2014/10/07

N/A

Modifications in V2.23(UJA.6)C0 - 2014/04/28

1. [BUGFIX]

Symptom:

Customer set WDS link without security encryption on it, after 12~13 minutes, the WDS link connection will be broken

Modifications in V2.23(UJA.5)C0 - 2014/03/10

N/A

Modifications in V2.23(UJA.4)C0 - 2014/02/18

1. [BUGFIX]

#ITS: 140100586

Symptom:

SNMP OID interface ifIndex increases after changing wireless security key.

2. [BUGFIX]

#ITS: 140200043

Symptom:

Command “logging mail 1 port 587” will cause our device apply last good configuration or default configuration

3. [BUGFIX]

ITS# 120805199

Symptom:

NWA 3160-N /3560-N does not allow space with security key. NWA3166 allows space with security key.

4. [BUGFIX]

#ITS120805199

Symptom:

WPA-PSK and WPA2-PSK Pre-Shared Key cannot set 63 ASCII or 64 hexadecimal characters.

5. [BUGFIX]

ITS#130702340

Symptom:

If the WTP use the IP is xxx.xxx.xxx.xxx , the rogue AP will can't detect. For Example:192.168.123.231

6. [BUGFIX]

ITS#130902209

Symptom:

No default gateway if no ethernet cable connecting to AP.

7. [BUGFIX]

ITS#130803812

Symptom:

When on the first hour has station connect with the AP and has traffic, after that, didn't has any user connect with the AP, but the Daily Report for the radio traffic also show has a traffic.

8. [BUGFIX]

ITS#131001797

Symptom:

SNMP v2c can't be disabled permanently after reboot NWA560-N. my test steps:1.

Uncheck SNMP v2c box from Configuration > System > SNMP Configuration2.

Check running config and show snmp status in console and there has no SNMP v2c enable3. Reboot NWA3560-N via GUI4. SNMP v2c box has been checked again on GUI and also in console 5. Even I disabled SNMPv2c by using CLI "no snmp-server version v2c" after reboot AP SNMP v2c still was enabled again.

9. [BUGFIX]

ITS#131003839

Symptom:

The customer wants to know the radio is disabled or not via SNMP. Customer was checking SNMP OID "ZYXEL-ES-WIRELESS::wlanCurrentChannel". This SNMP OID in customer 'test and my test always has last configured channel even I disable radio on WEB GUI.

10. [BUGFIX]

ITS#131100960

Symptom:

When use the Reset Utility target with "ff:ff:ff:ff:ff:ff, on the same subnet all NWA3KN AP will reset to default.

11. [BUGFIX]

ITS#131001401

Symptom:

Change MAC FILTER profile and all APs(using or not using this MAC filter profile) will receive updating configuration and make all STA re-connect.

12. [BUGFIX]

ITS#130404419

Symptom:

Remove all off-line AP and capwap server dead.

Modifications in V2.23(UJA.3)C0 - 2012/12/12

N/A

Modifications in V2.23(UJA.2)C0 - 2012/10/05

N/A

Modifications in V2.23(UJA.1)C0 - 2011/05/20

N/A

Modifications in V2.23(UJA.0)C0 - 2011/03/29

N/A

8. Limitations and Known Issues:

This section describes the system behavior or limitations in this firmware release. They will be created into knowledge base.

Limitations

1. WDS/REAPTER mode cannot forward VLANs between interfaces when the VLANs are not configuring on device.

Known Issues

1. **[Symptom]** Microsoft Wireless Zero Configuration (WZC) cannot connect when wireless security is setting to 802.1X (EAP-TLS/PEAP) with 64/128bit WEP.
2. **[Symptom]** WTP maybe frequently reconnect when heavy packet loses without any notification at clients.
3. **[Symptom]** When we configure the mode as AP+BRIDGE, The traffic can't transfer if the VLAN is different with MGNT VLAN.(to this purpose, the peer WDS AP should create the same VLAN interface for SSID profile using)
4. **[Symptom]** When we use Google Chrome browser to upgrade firmware image, the browser will keep running or keep running till timeout after updating AP's firmware completely. User needs to refresh Web-GUI to login AP again.

Appendix - A. System Default Setting

ZyXEL Access Points

- For AP in Standalone mode, following is the system default configuration:
The default device information for Unified Access Points
IP: 192.168.1.2
Administration username: admin
Password: 1234
- For AP in Managed AP mode by default, DHCP client enabled is by default.

Appendix - B. Firmware Upgrade 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 device 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, "223UJC0C0.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 device automatically reboots after a successful upload.
 - After several minutes, the system is successfully upgraded to newest version.

Appendix - C. Firmware Recovery

In some rare situation, device 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 device.

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: 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.
.....


```

- 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: UZW1050_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.


```
>
>
>
> atkz -f -l 192.168.1.1
```

```
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:\ftpboot\ZLD_FW\101XL\101XL0C0\1.01(XL.0)C0.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: 36642350 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 device 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 device automatically restarts.

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

- The username prompt displays after the device starts up successfully. The firmware recovery process is now complete and the device is ready to use.
- 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 for further analysis.
 - Refer to Step 1 “Restore the Recovery Image” and if there is similar case, the process must be performed again.
 - 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 config file, system configuration stop!!