



## PS4000 Firmware Release Notes

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This document summarizes the following firmware releases:

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Hardware Requirements:

This firmware requires the following Zebra Mobile Print Server:

PS4000 (PS4-XXXXXXXX-XX)

## Firmware Releases:

### 11z32

Release Date: 31 December 2010

#### Enhancements

- WLAN: Added support for "G" radio, p/n PS4-xxGxxxxx-xx
- WLAN: Add EAP session resumption (see below for description) [6958]
- Added support for LA-10 battery

#### Issues Corrected

- WLAN radio can occasionally lock up [4776] [5442]
- WLAN improper TCP handshake, occasionally not setting SYN flag in acknowledgment packets [5258]
- WLAN not properly responding to duplicate SYNs [6373]
- Authentication failed with PEAP on IAS2008 server [5620]

#### EAP Session Resumption

**Benefit:** Enables faster roaming when using EAP-based protocols.

**Summary:** After a printer and the network have previously negotiated an EAP session, and have begun a new EAP negotiation due to roaming or falling out of range and returning into range, they can agree to resume the previous session. This significantly reduces the time required to establish the new session from tens of seconds to seconds. In order for this to work, EAP Session Resumption must be enabled in the network infrastructure equipment by the network administrator. EAP Session Resumption is automatically supported in the printer when using any EAP-based protocols such as PEAP, LEAP, EAP-TLS, EAP-TTLS, or EAP-FAST. No printer configuration changes are required.

**NOTE:** Releases 11z27 and prior are not compatible with the new "G" radio, part number PS4-xxGxxxxx-xx, released in January 2011.

## 11z27

Release Date: 22 January 2010

### Enhancements

- Added inactivity timeout feature. When used in conjunction with the LA-24 battery performs a system shutdown after a configurable timeout (see below for more details).
- Added a low voltage shutdown feature. When used in conjunction with the LA-24 battery, performs a low battery warning when the voltage reaches 11.24V and a system shutdown when the voltage falls below 11.15V.
- Added support for Wavelink Avalanche 4.4.

### Issues Corrected

- Mirror: Automatic mirror mode not working [2450].
- WLAN: Print server intermittently reboots in 802.11 power save mode [4777].
- WLAN: Enhanced signal strength, roaming support, and power save responsiveness for the Zebra Value 802.11g Radio.

### Inactivity Timeout Feature

The inactivity timeout feature was added to ensure that the PS4000 system shuts itself down when not in use. This is critical when the print server is used with the LA-24 battery. The LA-24 battery will not charge properly if the system remains on while the battery is being charged. The timeout value is specified in increments of 1 second, up to a maximum of 8192 seconds. A 20 minute timeout is recommended. To configure the timeout use the following command (sent to the PS4000 over the console port), with a value corresponding to 20 minutes shown for reference:

- ! U1 setvar "power.inactivity\_timeout" "1200"

Note that the timeout is disabled by default. Once activated, the timeout can be subsequently disabled by setting the value to 0.

### Additional Information Regarding the Improvements to the 802.11g Radio:

This firmware release improves the internal signal strength reporting for the 802.11b/g radio. These enhancements improve the printer's operation in areas with weak signals. As a result of these changes, the print server should roam less frequently.

Additionally, changes to the radio's power save algorithm have been made which will also result in improved performance. Note that the power save behavior is affected by settings on both the access point and the printer. In particular, it should be noted that access point settings have a direct relationship on wireless device sleep periods.

## 10n

Release Date: 13 July 2007

### Enhancements

- (EAP-TLS): Added logic to prevent repeated PAP challenge responses.
- (EAP-TLS): Update to work with SBR server. The SBR was suggesting TTLS for inner authentication, this is now NAK'd. The update will now NAK all inner requests besides MSCHAPv2.
- (Avalanche): Changes made to \_devprop.prf file e.const part. for each property starts on a new line.
- (Avalanche): Support saving GUID into non-volatile memory.
- (PrintSpooler): Version 1.01; Added print\_server.print\_ip command (no dots in IP label).
- (PrintSpooler): Version 1.02; Changed the battery icon to indicate charging.
- POP3 enhancements to handle out-of-paper and HTML text-encoding (don't print it).
- Added support for turning on the option for sending an IP packet when roaming.
- Changed TCP socket behavior so a duplication connection does not immediately disconnect the previous connection. It will only happen after 30 seconds.
- (WPA): Symbol radio now uses 16-bit writes when writing the MIC.
- WPA2 Broadcast key rotation for both AES and TKIP.
- Added support for WPA Set/Get/Do's:
  1. wlan.wpa.wpa\_version
  2. wlan.wpa.groupkey\_ciphersuite
  3. wlan.wpa.pairwise\_ciphersuite
- Changed the interrupt priority of the Bluetooth port.
- Added new getvars:
  1. ! U1 getvar "print\_server.battery.average\_voltage"
  2. ! U1 getvar "print\_server.battery.number\_charges"
  3. ! U1 getvar "print\_server.battery.bat\_led"
  4. ! U1 getvar "print\_server.battery.charger\_error\_flag"

5. ! U1 getvar "print\_server.battery.avg\_voltage\_stop\_charge"
6. ! U1 getvar "print\_server.battery.avg\_voltage\_start\_charge"
7. ! U1 getvar "print\_server.battery.max\_voltage"
8. ! U1 getvar "print\_server.battery.remaining\_life"
9. ! U1 getvar "print\_server.battery.min\_voltage"
10. ! U1 getvar "print\_server.battery.serial\_number"
11. ! U1 getvar "print\_server.battery.error\_led"
12. ! U1 getvar "print\_server.battery.error\_led"
13. ! U1 getvar "print\_server.battery.pic\_softw\_ver"

For more information on these getvars please see the Programmer's Manual.

- Scheduled periodic call to retrieve smart battery status.
- Added handling of battery authentication failure, poor battery health and reconditioning request.
- Added items pertaining to smart battery to "power" branch.
- get\_gas\_gauge\_percent now returns RelativeStateOfCharge for the smart battery.

### Issues Corrected

- Fixed clearing of the antenna icon.
- (Avalanche): Fixing buffer overflow which will prevent unit from resetting.
- (Avalanche): Corrected UDP malformed packets.

## 04u17-4

Release Date: 26 February 2007

### Enhancements

- Added support for channel 14 with the channel mask.
- Updated G radio firmware (5.2.11).
- WPA2 with TKIP encryption support added.
- Added ability to authenticate to the server with anonymous (PEAP).
- Improved PowerSave and Roaming with the G radio.
- Added function to select strongest Unicast cipher for WPA2 if AP has more than one Unicast cipher enabled.
- Changed roaming scan behavior for G radio so only one channel is scanned per 100ms interval. This allows the radio to be more responsive to normal traffic while in a roaming state.

- G radio: Added user configurable parameter for roam signal and interval.
- PrintSpooler: Changed so print spooler queues are halted by default until after the print spooler has been initialized. This keeps getchar from calling into the print spooler before it's ready.

#### Issues Corrected

- Corrected network source address usage with FTP and VPN.

#### 04u

Release Date: 4 August 2006

#### Enhancements:

- Original release

#### Issues Corrected

- N/A