ZoneDirector Version 9.10.2 Refresh

Release Notes

Copyright Notice and Proprietary Information

About This Release

Introduction

This document provides release information on ZoneDirector release 9.10.2, including new features, enhancements, known issues, caveats, workarounds, upgrade details and interoperability information for version 9.10.2.

NOTE   By downloading this software and subsequently upgrading the ZoneDirector and/or the AP to version 9.10.2, please be advised that:

- The ZoneDirector will periodically connect to Ruckus and Ruckus will collect the ZoneDirector serial number, software version and build number. Ruckus will transmit a file back to the ZoneDirector and this will be used to display the current status of the ZoneDirector Support Contract.
- The AP may send a query to Ruckus containing the AP's serial number. The purpose is to enable your AP to autonomously connect with a wireless LAN controller operated by your choice of cloud service provider. Ruckus may transmit back to the AP, the Fully Qualified Domain Name (FQDN) or IP address of the controller that the AP will subsequently attempt to join.

NOTE   Please be advised that this information may be transferred and stored outside of your country of residence where data protection standards may be different.

Supported Country Codes

Refer to the Ruckus Wireless Price List for available country certifications.

What's New in This Release

For a additional information on the new features that have been added in this release, see the *What's New in ZoneFlex 9.10* document, available from the Ruckus Wireless support website. Please refer to Release Notes for prior releases for information on previously documented caveats, limitations, enhancements and resolved issues. These documents can be found at: https://support.ruckuswireless.com/.

Supported Platforms and Upgrade Information

ZoneDirector

ZoneDirector version 9.10.2.0.29 supports the following ZoneDirector models:

- ZoneDirector 1100
- ZoneDirector 1200
- ZoneDirector 3000
- ZoneDirector 5000

Access Points

ZoneDirector version 9.10.2.0.29 supports the following Access Point models:

- H500 **(ZoneDirector 1200, 3000, 5000 only. Not supported on ZD 1100)*
- R300
- R500
- R600
- R700
- SC8800-S
- SC8800-S-AC
- T300
- T300e
- T301n
- T301s
- ZF7055
- ZF7321
- ZF7321-u
- ZF7341
- ZF7343
- ZF7352
- ZF7363
- ZF7372
- ZF7372-E
- ZF7441
- ZF7761-CM
- ZF7762
- ZF7762-AC
- ZF7762-S
- ZF7762-S-AC
- ZF7762-T
- ZF7781CM

- ZF7782
- ZF7782-E
- ZF7782-N
- ZF7782-S
- ZF7982

NOTE ZoneFlex 7025 APs are no longer supported as of 9.10, and cannot be upgraded to ZoneFlex version 9.10, 9.10.1 or 9.10.2.

NOTE H500 is not supported on ZoneDirector 1100.

Upgrading to This Version

This section lists important notes on upgrading ZoneDirector to this version.

Officially Supported 9.10.2 Upgrade Paths

The following ZoneDirector builds can be directly upgraded to ZoneDirector build 9.10.2.0.29:

- 9.9.0.0.205 (9.9 GA release)
- 9.9.0.0.212 (9.9 GA refresh)
- 9.9.0.0.216 (9.9 GA refresh 2)
- 9.9.1.0.31 (9.9 MR 1 release)
- 9.9.1.0.40 (9.9 MR 1 refresh)
- 9.10.0.0.218 (9.10 GA release)
- 9.10.1.0.59 (9.10 MR 1 release)
- 9.10.2.0.11 (9.12 MR 2 release)

NOTE If you do not have a valid Support Entitlement contract, you will be unable to upgrade ZoneDirector to this release. See *Administer > Support* page for information on Support Entitlement activation.

If you are running an earlier version, you must first upgrade to one of the above builds before upgrading to this release.

Due to the enforcement of the Support Entitlement feature in ZoneDirector 9.10, Ruckus recommends upgrading to 9.10.2 from one of the above builds only.

You can also upgrade directly to 9.10.2 from one of the following 9.8 builds. However, you will be prompted to reset to factory defaults before the upgrade can continue. (This is not required when upgrading from 9.9 to 9.10.2)

9.8 builds that can be directly upgraded to 9.10.2 (requires factory default):

- 9.8.0.0.379 (9.8 GA)
- 9.8.1.0.101 (9.8 Maintenance Release 1)

- 9.8.2.0.15 (9.8 Maintenance Release 2)

If you are running an earlier version, you must first upgrade to one of the above builds before upgrading to this release.

Enhancements and Resolved Issues

This section lists new features and enhancements that have been added in this release and resolved issues from previous releases.

Enhancements

- Zero-IT support for Android 5.0 and 5.1.
- Client Fingerprinting for Android 6, iOS 9, Windows 10 and Windows 10 Mobile.
- Upgraded OpenSSL from version 1.0.1m 1.0.1q.
- Updated new FlexMaster SSL certificate into ZoneDirector. (Note: See Caveats, Limitations, and Known Issues on page 11 for limitations related to new FM SSL certificate.)

Resolved Issues

- Removed country codes Korea2 and Korea3. [ER-2451]
- Resolved a security issue related to Logjam attack. Please see www.ruckuswireless.com/security for security incidents and responses. [ER-2647]
- Resolved an issue with incorrect values for some SNMP MIBs. [ER-2838]
- Resolved an issue where, when using 802.1x with VLAN Pooling and moving between APs, the device loses its dynamically assigned VLAN and defaults to the WLAN's Access VLAN. [ER-2784]
- Resolved an issue where EAPSIM clients were unable to connect. [ER-823]
- IPv6 addresses are now properly displayed on the client monitoring page. [ER-2963]
- Resolved an issue with printing customized Guest Passes when using Firefox and Chrome browsers. [ER-3000]
- Resolved an issue where iOS devices could be unable to access the network access when Force DHCP is enabled. [ER-2933]
- Multiple SPoT venues can now be configured with the same FQDN. [ZF-14033]
- Resolved an issue where the SNMP MIB "ruckusZDWLANAPRadioStatsResourceUtil" would return incorrect values. [ER-3047]
- Resolved an issue where the SNMP MIB "ruckusZDSystemStatsWLANTotalRxErrFrm" would return incorrect values. [ER-2649]
- Resolved an issue with VLAN pool address assignment after roaming. [ER-3025]
- The SNMP value for maximum number of stations on ZoneDirector 3000 now properly returns 10,000. [ER-3074]
- Resolved a DST error with GMT+1 (Brussels Time) time zone that could cause the time displayed to be off by an hour. [ER-3194]
- Resolved an issue with Zero-IT support for Android 5.0 clients. [ZF-14649]
- Resolved a Hotspot redirect issue in high retransmission environments where clients could intermittently fail to be redirected to the Hotspot login page. [ER-2913]
- Resolved an issue where the packet capture feature on solo APs was disabled. [ER-2802]

- Resolved an issue where the AP was intercepting the wrong client IP address from malformed IP packets from the client. [ER-2290]
- Resolved an issue with incorrect values for some SNMP MIBs. [ER-2838]
- Resolved an issue that could cause the web interface and CLI interface to become unresponsive due to a support entitlement activation error. [ER-2896]
- The "Framed-IP-Address" value is now included in Acct-Start packets in 802.1x WLANs on standalone APs. [FR-1626]
- Values for Airtime stats are now retrievable from standalone AP as well as ZoneDirector SNMP queries. [ER-2845]
- Client Fingerprinting now properly recognizes iOS 9 clients. [ZF-14502]
- Resolved an issue where APs could become unreachable due to an IP address conflict when a 192.168.50.0 subnet was used. [ER-2338]
- Device Access Policy now properly identifies Mac OS X "El Capitan" clients. [ZF-14586]
- Removed an erroneous error message "Cannot notify kernel for Delete AP" from syslog messages. [ER-3141]
- Resolved an issue where executing the "fw check image" command resulted in "bad header magic" error messages. [ER-3270]
- Client Fingerprinting now properly identifies Windows 10 Mobile clients. [ZF-14656, ZF-14403]
- Client Fingerprinting now properly recognizes Android 6 clients [ZF-14717]
- Resolved an issue where when there were no packets in the queue for UAPSD clients, the client sent a trigger to the AP and the AP went into a loop in transmitting QoS NULL frames. [ZF-14907]
- Resolved an issue that could cause R500, R600 or T300 AP Ethernet ports to get stuck, thus causing the APs to remain disconnected from the network and to recover only after a reboot. [ER-2983]
- Resolved an issue that could cause Bonjour Gateway rules to fail to be applied in certain situations. [ER-3018]
- Resolved an issue where duplicate entries in the proxy ARP existed for the same MAC address, which led to network interruption for some clients in certain situations. [ER-3166]
- Resolved an issue with ZoneDirector XML data records sent to FlexMaster and SCI causing data dropouts. [ER-3290]
- Resolved an issue that could cause ZoneDirector 5000's system clock to drift from NTP time by about 5 seconds a day. [ER-2190]
- Resolved an issue that could result in APs rebooting when Open Auth with Dynamic VLAN was enabled. [ER-3122]
- Resolved an issue with the AP proxy ARP feature where IPv6 neighbor advertisement messages from the AP were incorrectly formatted. [ER-3113]
- Resolved an issue with loop detection on ZF 7025, 7055 and H500 APs. [ER-3098]
- Resolved an issue with H500 APs that would prevent the AP from using DFS channels with US country code. With this release H500 now supports all DFS channels in the 5 GHz band. [ER-2839]

- Resolved an issue that could prevent wireless printers from connecting to H500 APs when WPA/WPA2/WPA-Mixed encryption was enabled. [ER-3009]
- Resolved an issue where iOS 9-based Apple devices could not associate with hidden SSIDs when L2 MAC ACL was enabled. [ER-3186]
- Resolved an issue that could cause ZD 3000 to reboot due to an sqlitedTac.socket error. [ER-3295]
- Resolved an issue that could cause the AP to reboot as a result of kernel panic. [ER-2927]
- Resolved an issue in which very rarely clients associated with the 5GHz band on the R700 AP could not pass traffic. [ER-3161]
- Resolved an issue that could cause ZoneDirector to become unresponsive or reboot when autonomous WLANs were deployed and the connection between the AP and ZoneDirector was unstable or the AP or ZD was under heavy load. [ER-3157]
- Resolved an issue that could cause the ZoneDirector web interface to become slow or unresponsive in high query scenarios, such as when sending data to SCI, and concurrently handling many guest association/disassociation requests. [ER-3090]
- Resolved an issue where UEs associated with the 5GHz radio on the R710 AP were stuck in a paused state permanently. This issue was caused by the unavailability of TX descriptors. [ER-3175, ER-3318]

Resolved Issues in build 9.10.2.0.16

- Resolved an issue with the station manager process on ZoneDirector 3000 and 5000 consistently increasing memory usage, eventually leading to reboot. [ER-3275]
- Resolved an issue that could cause repeated HTTP redirect failures due to an invalid HTTP header without HTTP version string. [ER-3822]
- Resolved an issue where clients would be unable to pass traffic after roaming when Force DHCP is enabled on the WLAN. [ER-2900]
- Resolved an issue that could cause ZoneDirector to hang and require a reboot when the max clients limit was reached in extremely high density environments. [ER-2847]
- Resolved an issue that could result in GUI and SSH access unresponsiveness on ZoneDirector 5000 when 11,000 clients were connected. [ER-2807]
- Fixed the corner case causing the station manager process to hang as it runs out of request handlers by optimizing the timers to quickly release the request handlers. [ER-2974]
- Resolved an issue where when WLAN 102 is deleted from the AP, then WLAN 100 would fail to report location data to SPoT. [ER-4201]

Resolved Issues in build 9.10.2.0.22

- Resolved an issue that could cause APs to fail to reconnect to ZoneDirector for a long time after a Smart Redundancy failover. [ER-3890]
- Resolved an issue related to client isolation where devices connected to the 5GHz radio could not access the Internet. [ER-3489]

- Resolved an issue with RADIUS message "Acct-Output-Gigawords" values causing issues with billing systems. [ER-3893]
- Resolved an issue where ZF 7372 APs would not properly display results for SNMP queries. [ER-3677]
- Resolved a ZoneDirector 3000 issue that could cause the emfd process to hang when calling "fprintf()" in "get_QueueEvent" function. [ER-3926, ER-4375]
- Resolved an issue with Smart Redundancy ZoneDirectors that could cause flapping between active and standby modes during installation of new APs in rare conditions. [ER-1941]
- Resolved an issue that could potentially cause ARP entry leaks, which couldeventually lead to ZoneDirector reboots. [ZF-15476]

Resolved Issues in build 9.10.2.0.29

- Resolved an issue where guest pass validity periods would be displayed inconsistently in email and print when compared to the validity periods displayed on the guest pass monitoring page. [ER-4577]
- Resolved a cross-site scripting (XSS) vulnerability discovered in ZD release 9.9.1. See https://www.ruckuswireless.com/security for security incidents and responses. [ER-4275]
- Resolved an issue that would prevent the creation of social media WLANs if the ZD had been upgraded from releases prior to 9.9. [ER-4535]
- Resolved an issue that could cause ZD 3000 to reboot due to an sqlitedTac.socket error. [ER-4396, ER-3295]
- Resolved an issue that could cause ZD-controlled ZF 7372 APs to reboot due to watchdog timeout. [ER-1922]
- Resolved an issue that could cause ZoneDirector to reboot due to an "rhttpc" process hang. [ER-4585]

Caveats, Limitations, and Known Issues

This section lists the caveats, limitations, and known issues in this release.

Ethernet Port Settings

ZoneFlex AP Ethernet ports can become disabled if half-duplex is forced on any port. [ID ER-1208, ER-1229]

This problem affects the following:

- ZoneDirector: ZD 1100
- APs: ZoneFlex 7341, 7343, 7363, 7761, and 7762

Workaround: Uplink switch ports must be set to 100Mbps auto-negotiation or 1000Mbps auto-negotiation.

Web Interface

- ZoneDirector release 9.10.2 supports the following Web browsers:

  - Firefox 31 and later
  - Internet Explorer 10, 11
  - Chrome 36 and later

- Chrome browser may fail to redirect to the authentication page for WISPr and Guest Access profiles when a user attempts to browse to a page that uses HTTP Strict Transport Security (HSTS).

  Workaround: browse to a website that does not use HSTS, complete the authentication, then browse to any site. (ZF-10401)

VLAN Pooling

- When VLAN pooling (option 2 or 3) is enabled on an Open/None or 802.1X EAP WLAN, clients may fail to retain the same IP address and may be assigned to a different VLAN after roaming. [ZF-15063]

R500, R600, R700 and T300 Series APs

The following features are not included in this release:

- Airtime Fairness on 5 GHz radio
- Spectrum Analysis on 5 GHz radio
- WLAN Prioritization on 5 GHz radio

FlexMaster SSL Certificate

As a result of the new FlexMaster SSL certificate into ZoneDirector, ZoneDirector 9.10.2.0 will NOT work with FlexMaster 9.10.1 and prior versions. Customers who use FlexMaster to manage ZoneDirector will need to upgrade FlexMaster to 9.10.2 to continue to be able to communicate with ZoneDirector 9.10.2.

Interoperability Information

ZoneDirector Controller and SmartZone Controller Interoperability

To ensure reliable network operations, it is recommended that ZoneDirector controllers and SmartZone controllers (SmartCell gateway and SmartZone controllers) not be deployed on the same IP subnet or in such a way as the controllers share the same DHCP address scopes and domain name servers (DNS) as there may be limitations or restrictions in AP controller discovery capabilities. An effective network segmentation strategy should be developed when ZoneDirector and SmartZone controllers co-exist in the same network.

Redeploying ZoneFlex APs with SmartZone Controllers

Note that a supported ZoneFlex AP configured to operate with ZoneDirector will require an upgrade to a compatible SmartZone controller approved software release prior to interoperating with a SmartZone controller. Once the AP firmware is updated, the AP will no longer be able to communicate with its old ZoneDirector controller. The AP must be reset to factory-default setting before attempting to configure the AP from the SmartZone controller.

NOTE   There are established ZD to SZ controller migration tools and procedures. Contact support.ruckuswireless.com for the latest available procedures and utilities.

ZoneFlex Release 9.9 and AP Standalone Mode and FlexMaster Managed Mode Operation

Starting January 1, 2015 the default image that ships from the factory on Ruckus access points (APs) will change from ZoneFlex Release 9.8.x to ZoneFlex Base Image Release 100.0.x. Most customers will not notice any difference in AP operation. The APs will continue to support standalone mode and FlexMaster managed mode operations and will automatically discover and connect to ZoneDirector or SmartZone controllers.

Beginning in ZoneFlex Release 9.9 and higher, the AP has a new behavior: once an AP connects to a controller the AP will no longer support standalone mode and FlexMaster managed mode operation after the controller completes the necessary AP firmware update during initialization.

An AP removed from a controller managed network may be restored to operate in standalone mode and FlexMaster managed mode operation by updating the AP firmware back to ZoneFlex Base Image Release 100.0.x or to a ZoneFlex-AP Release 9.8.x or lower.

These software images are available on the Ruckus support site, see support.ruckuswireless.com for more information.

AP Interoperability

APs with ordering number prefix 901- (example 901-T300-WW81), may now be supplied with an AP base image release 100.0. or higher.

The AP base image is optimized for controller-discovery compatibility to support all Ruckus Wireless controller products including ZoneDirector, SCG, vSCG, SmartZone and SAMS.

Once the AP discovers and joins a controller (for example ZoneDirector), the AP is updated to the compatible controller-specific AP firmware version. The updated AP firmware version becomes the factory-default image. The updated AP firmware version (for example ZoneFlex 9.9) will remain persistent on the AP after reset to factory defaults.

An AP configured with base image release 100.0 may be managed by the FlexMaster management tool or may be used in standalone controller-less operation if controller discovery is disabled on the AP web UI.

Client Interoperability

ZoneDirector and ZoneFlex APs use standard protocols to interoperate with third-party Wi-Fi devices. Ruckus Wireless qualifies its functionality on the most common clients.

The following client operating systems and browsers have been tested for compatibility with this release (for specific OS and browser limitations, including compatibility with Zero-IT, see subsequent sections below).

- PC OS:

  - Windows 7
  - Windows 8
  - Windows 8.1
  - Windows 10
  - Mac OS 10.8.5
  - Mac OS 10.9.3
  - Mac OS 10.9.4
  - Mac OS 10.10

- Smart Phone/Tablet OS:

  - iOS (6.x, 7.x, 8.0, 8.0.2, 8.1, 9.0, 9.1, 9.2)
  - Android (4.0.4, 4.1.2, 4.4.2, 4.4.4, 5.0.1)
  - Windows Phone (8, 8.1, 10)
  - BlackBerry OS (10.1.0.4633, 10.3.0.1172)
  - Kindle (7.4.9)
  - Chrome OS

- Officially Supported Browsers: Internet Explorer 10, 11 Firefox 34 and later Chrome 39 and later

- Not Officially Supported Browsers: Safari, Dolphin, Opera Mini, Android Default, BlackBerry Default, etc.

Zero-IT Compatibility with Client Devices

Table 1: Zero-IT Compatibility

WPA2 WLAN				802.1x EAP (external Radius Server)		
OS	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
iOS 6.x	Y	Y	N(ZF-2888)	Y	Y	N (ZF-2888)
iOS 7.x	Y	Y	N(ZF-2888)	Y	Y	N (ZF-2888)
iOS 8.0	Y	Y	N(ZF-2888)	Y	Y	N (ZF-2888)
iOS 8.0.2	Y	Y	N(ZF-2888)	Y	Y	N(ZF-2888)
iOS 8.1	Y	Y	N(ZF-2888)	Y	Y	N (ZF-2888)
iOS 9.0, 9.1, 9.2	Y	Y	N(ZF-2888)	Y	Y	N (ZF-2888)
MAC OS 10.8.5	Y	Y	Y	Y	Y	N (ZF-4699)
Mac OS 10.9.3	Y	Y	Y	Y	Y	N(ZF-4699)
Mac OS 10.9.4	Y	Y	Y	Y	Y	N (ZF-4699)
Mac OS 10.9.5	Y	Y	Y	Y	Y	N (ZF-4699)
Mac OS 10.10	Y	Y	Y	Y	Y	N (ZF-4699)
Windows 7	Y	Y	Y	Y	Y	Y
Windows 8	Y	Y	Y	Y	Y	Y
Windows 8.1	Y	Y	Y	Y	Y	Y

WPA2 WLAN				802.1x EAP (external Radius Server)		
Windows 10	Y	Y	Y	Y	Y	Y
Windows Phone 8	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)
Windows Phone 8.1	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)	N (ZF-3478)
BlackBerry OS 10.1	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)
BlackBerry OS 10.3	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)	N (ZF-6402)
Kindle 7.4.9	Y	Y	Y	Y	Y	Y
Android 4.0.4	Y	Y	Y	Y	Y	Y
Android 4.1.2	Y	Y	Y	Y	Y	Y
Android 4.4.4	Y	Y	Y	Y	Y	Y
Android 5.0	Y	Y	Y	Y	Y	Y
Chrome OS	N (ZF-8076)	N (ZF-8076)	N (ZF-8076)	N (ZF-8076)	N (ZF-8076)	N (ZF-8076)

Step 1: Download Zero-IT file

Step 2: Install Zero-IT script

Step 3: Automatically connect to the appropriate SSID

Client Interoperability Issues

- Zero-IT is not supported on Windows Phone 7/8/8.1 devices. [ZF-3478]
- Zero-IT is not supported on Blackberry OS devices. [ZF-6402]
- Zero-IT is not supported on Chrome OS devices. [ZF-8076]
- iOS clients cannot connect to the Zero-IT WLAN automatically. Users must reconnect to the target WLAN after installing the Zero-IT configuration file. [ZF-2888]
- Mac OS 10.7 and 10.8 cannot automatically connect to an 802.1x EAP WLAN after installing Zero-IT script. [ZF-4699]