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Ruckus IoT 1.5.1.0 Release Notes

Supporting IoT Controller Release 1.5.1.0

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Contents

Document History

Revision Number	Summary of changes	Publication date
A	Initial Release Notes	December, 2019
B	MR1 Patch Release	March, 2020
C	1.5.0.1 Release on SZ 5.2	April, 2020
D	1.5.1.0 Release on SZ 5.2	May, 2020

Overview

This document provides release information about Ruckus IoT Suite 1.5.1.0 a versatile system for managing IoT devices. The Ruckus IoT Suite is a collection of network hardware and software infrastructure components used to create an IoT access network that is comprised of four elements:

- Ruckus IoT-ready Access Points (APs)— in addition to the wall-mount H510, the ceiling-mount R510, the outdoor model T310, the ceiling-mount R610, R710, and R720, the outdoor models E510, and T610 as of this release the following additional AP models are now IoT-ready: Indoor Access Point R730 (802.11 ax), the Indoor Access Point C110, the LTE access point M510, Indoor Wi-Fi 6 Access Point for Dense Device Environments R650, Indoor Access Point Indoor Wi-Fi 6 Access Point for Ultra-Dense Device Environments R750, and Outdoor Wi-Fi 6 Access Point with 2.5Gbps Backhaul T750.

- Ruckus IoT Modules—A NEW device that attaches to a Ruckus IoT-ready AP and supports standards such as Bluetooth Low Energy (BLE), Zigbee, LoRa and more. Our first IoT Module, the I100, will support BLE or Zigbee within the same enclosure.

- Ruckus SmartZone Controller—existing WLAN controller, which provides basic networking information for both the WLAN and the IoT access network.

- Ruckus IoT Controller—A NEW virtual controller, deployed in tandem with a Ruckus SmartZone Controller, that performs connectivity, device, and security management functions behind the scenes for non-WiFi devices. Our IoT Controller also facilitates cross-solution endpoint communication and provides APIs for northbound integration with IoT cloud services.

This document provides a list of the release components, their versions, a link to documentation, as well as caveats, limitations, and known issues in this release.

New in This Release

Ruckus IoT-1.5.1.0 Suite provides the following update:

- ReactMobile Panic Button Integration (Beacon as a Service Custom Beacon)

- Zigbee Cluster Library 7 clusters: chemical sensors, etc.

- NodeRed upgrades–New NodeRed version 1.0.3 –File Manager for NodeRed dashboard assets–Import-Export of applications, flows, and assets–Example flows updated for more efficient programming–More packages, fixes

- UI/UX optimizations

- PCI Compliance fixes: SSH enable/disable

- Branding update

Changed Behavior

STOP and READ before ugrading to 1.5

IoT Controller Licensing:

Before upgrading to 1.5 release, please make sure you have bought an IoT Right to Use (RTU) and IoT capacity license to accommodate the number of IoT gateways you plan to use. The licenses should be uploaded to 1.5 controller for uninterrupted services. Please refer the below links on how to get licenses and to contact support.

KBA: Support Activation from Support Portalhttps://support.ruckuswireless.com/articles/000008284

KBA: On how to find serial number of vRIOT controllerhttps://support.ruckuswireless.com/articles/000010095

https://support.ruckuswireless.com/contact-us

For Patch:

Patch **vriot-patch-1.5.0.0.34.tar.gz** will be required for those IoT Controller(s) upgrading from 1.5.0.0.34 to a later version. Otherwise upgrade from 1.5.0.0.34 will fail. After applying the patch-1.5.0.0.34, the IoT controller has to be rebooted manually.

IoT Controller Harddisk Resize:

In 1.5.0.1 the default IoT Controller's HDD size is increased to 20GB. In pre-1.5 version the size is just 8GB. So before upgrading to 1.5.0.1, customer is excpected to increase the HDD to exactly 20GB (less than or more than 20GB will lead to failure during upgrade). Below are the steps and examples.

- Pre-1.5 IoT Controller shut down (power off).

- Resize or Expand the partition to exactly 20GB. (less than or more than 20GB will lead to failure during upgrade)

- **VirtualBox:**

  – Go to Vbox installed location and use VboxManage (cli command tool) to resize. Installed location (HDD) can be acquired from the VBox UI.

  – Execute "VBoxManage modifymedium vriot-1.4.0.0.17.vdi --resize 20480" . In the above command vriot-1.4.0.0.17.vdi, should be replaced with the name of the VDI file of the IoT Controller.

  – Power on VM.

- **VMWare (Workstation or ESX/ESXi):**

  – Go to settings (edit settings) and click on existing HDD.

  – Click on Expand option and set value as 20GB and perform expand.

- – Power on VM.

- Bring up 1.4 controller.

- Upload the 1.5.0.1 image. Incase the free space is less than 3GB, then need to free up space before the upload.

- Perform upgrade as usual.

KBA: Firmware Upgrade Matrix

https://support.ruckuswireless.com/articles/000010364

Hardware and Software Support

This release is compatible with the following controller and access point hardware and software.

Compatible Hardware:

- C110 Access Point (C110)
- H510 Access Point (H510)
- R510 Access Point (R510)
- R610 Access Point (R610)
- R710 Access Point (R710)
- R720 Access Point (R720)
- T310 Access Point (T310)
- E510 Access Point (E510)
- T610 Access Point (T610)
- R650 Access Point (R650)
- R730 Access Point (R730)
- R750 Access Point (R750)
- T750 Access Point (T750)
- M510 Access Point (M510)
- I100 IoT Module (I100)

Compatible Software:

- Virtual SmartZone High Scale (vSZ-H)
- Virtual SmartZone Essentials (vSZ-E)
- SmartZone 100 (SZ-100)
- Ruckus IoT Controller (RIoT)

Release Information

This section lists the version of each component in this release.

vSCG (vSZ-H and vSZ-E), and SZ-100:

- WLAN Controller version: 5.2.0.0.699
- Control plane software version in the WLAN Controller: 5.2.0.0.770
- AP firmware version in the WLAN Controller: 5.2.0.0.1412
- IoT Gateway Version: 1.5.1.0.15030

RIoT:

- Ruckus IoT Controller version: 1.5.1.0.21
- VMWare ESXi version: 5.5 and later
- VMWare VM Player version: 12 and later
- KVM Linux virtualizer version: 1:2.5+dfsg-5ubuntu10.42 and later
- Oracle VirtualBox version: 5.1.20 and later
- Google Chrome version: 61 and later
- Mozilla Firefox version: 56 and later

SDK:

- Ruckus IoT SDK version: SDK-1.0

TABLE 1 Release Build Compatibility Matrix

Release	IoT Controller	SZ	AP	Supported AP Models
IoT GA 1.0	1.0.0.0.25	3.6.1.2.10051	3.6.1.2.10040	H510, R510, T310d
IoT GA 1.1	1.1.0.0.6	3.6.1.2.12010	3.6.1.2.12007	H510, R510, T310d
IoT GA 1.1MR1	1.1.0.0.6	3.6.1.2.12012	3.6.1.2.12009	H510, R510, T310d
IoT GA 1.2	1.2.0.0.22	3.6.1.2.12535	3.6.1.2.12535	H510, R510, T310d, R610, R710, R720, T610
IoT GA 1.2MR1	1.2.0.0.24	3.6.1.2.12538	3.6.1.2.12538	H510, R510, T310d, R610, R710, R720, T610
IoT GA 1.3	1.3.0.0.14	3.6.1.2.13022	3.6.1.2.13022	H510, R510, T310d, R610, R710, R720, T610
SZ 5.1.1.0	1.2.0.0.24	5.1.1.0.589	5.1.1.0.619	H510, R510, T310d, R610, R710, R720, T610, R730
SZ 5.1.1.0MR1	1.2.0.0.24	5.1.1.0.598	5.1.1.0.624	H510, R510, T310d, R610, R710, R720, T610, R730
SZ 5.1.1.2	1.3.1.0.1	5.1.1.2.14019	5.1.1.2.14019	H510, R510, T310d, R610, R710, R720, T610, R730
SZ 5.1.2	1.3.1.0.1	5.1.2.0.302	5.1.2.0.373	H510, R510, T310d, R610, R710, R720, T610, R730, R750
IoT GA 1.4	1.4.0.0.17	5.1.1.2.15014	5.1.1.2.15014	H510, R510, T310d, R610, R710, R720, T610, R730, C110
IoT 1.5	1.5.0.0.34	5.1.1.2.15524	5.1.1.2.15524	H510, R510, T310d, E510, R610, R710, R720, T610, R730, C110, M510

TABLE 1 Release Build Compatibility Matrix (continued)

Release	IoT Controller	SZ	AP	Supported AP Models
IoT 1.5MR1	1.5.0.0.38	5.1.1.2.15524	5.1.1.2.15524	H510, R510, T310d, E510, R610, R710, R720, T610, R730, C110, M510
IoT 1.5.0.1	1.5.0.1.21	5.2.0.0.699	5.2.0.0.1412 IoT Version : 1.5.0.1.15027	H510, R510, T310d, E510, R610, R650, R710, R720, T610, R730, R750, T750, C110, M510
IoT 1.5.1.0	1.5.1.0.21	5.2.0.0.699	5.2.0.0.1412 IoT Version : 1.5.1.0.15030	H510, R510, T310d, E510, R610, R650, R710, R720, T610, R730, R750, T750, C110, M510

TABLE 2 IoT Upgrade Support Matrix

Version	5.1.1.2 (1.3.1.0)	GA-1.4	GA-1.5	GA-1.5MR1	GA-1.5.0.1	GA-1.5.1.0
5.1.1.2 (1.3.1.0)	Yes	Yes	No	No	No	No
GA-1.4	No	Yes	Yes	No	Yes	No
GA-1.5	No	No	Yes	Yes	No	No
GA-1.5MR1	No	No	No	Yes	Yes	Yes
GA-1.5.0.1	No	No	No	No	Yes	Yes
GA-1.5.1.0	No	No	No	No	No	Yes

Fixed Issues:

The following ER and Field issues are fixed for this release:

TABLE 3 Fixed Issues

Key	Summary
IOTE-62	IOT-1.4 AP's fail to join the IOT controller due to SSLError: [SSL: CERTIFICATE_VERIFY_FAILED]
IOTE-59	vRIOT 1.5 factory resetting the vRIOT server, resets the Licenses DB
IOTE-58	vRIOT 1.5 will not allow us to delete existing AP's from the controller
IOTE-57	vRIOT 1.5 throws an error while installing the license file "License Parser Tool Error. Refer Logs"
IOTE-56	vRIOT 1.5 throws an error while installing the license file "This License is already installed"
IOTE-54	vRIOT 1.5 throws an error while installing the license file "rtu_expiry_ap"

Known Issues

The following are the caveats, limitations and known issues.

Component: IoT feature in Access Point with IoT Module I100

- IOTC-2691-Three network interfaces are seen for the R730 AP while re-connecting the AP to an IoT Controller.

  Workaround - None

Component: Ruckus IoT Controller

- IOTC-3331 - Once "Beacon as a Service" feature is enabled even if subsequently disabled, factory reset will fail.

  Workaround - None

- IOTC-3355 - User will not be able to load .mov format file to node-red file manager.

  Workaround - None

- IOTC-3335 - Plugin status is not updated for Soter plugin

  Workaround - None

- IOTC-3314 - Heartbeat message is not sent when enabled only on Vendor 2

  Workaround - Configure all vendor 2 configuration in Vendor 1 if required only in one vendor and if required on both enabling heartbeat on vendor 1 sends the message on both

- IOTC-3313 - Heartbeat message is sent for both the vendors even if enabled for only for vendor1

  Workaround - None

- IOTC-3227 - LNS tab does not present the LoRa Network Server after upgrade.

  Workaround - Go to Admin tab, stop the LoRa Network Server and start it again.

- IOTC-3194 - Disabling N+1 resets the fallback node and removes the default license.

  Workaround - Redeploy the VM in case of using a default license. In case of using a licensed version upload the license and then enable N+1.

- IOTC-3204 - Sometimes IOT Protocols and AP name are not updated for pre-approved AP's.

  Workaround - Delete the AP and let it join back to the controller again.

- IOTC-3087/IOTC-3005-In a DB restored controller license alert and second license upload will not work.

  Workaround - None.

- IOTC-3078-Total LNS count is displaying blank in dashboard page in firefox browser.

  Workaround - Go to Admin tab, stop the LoRa Network Server and start it again.

- IOTC-3075-Only the first 10 APs is shown in the Beacons (IoT Devices) pageirrespective of AP being BLE or Zigbee.

  Workaround - Filter via tree view but even in that the first 10 only will be shown.

- IOTC-3069-In a N+1 setup traffic going from controller to cloud will not use Virtual IP in the packet.

  Workaround - configure firewall to allow traffic to pass from primary IP and secondary IP.

- IOTC-3067-N+1 configuration failed if primary and secondary have same hostname is upper and lower case.

  Workaround -Configure different names for primary and secondary.

- IOTC-3060- Telkonet cloud issue: Telkonet EcoCentral status may display down for all end devices even when device is operational.

  Workaround - None.

- IOTC-2980-connection lost message seen on switching from rules dashboard to rules configuration.

  Workaround - None (property of node-red design).

- IOTC-2868-Clicking on LoRa tab in Firefox browser gives Potential Security Issue page .

  Workaround - Right-click the lock icon at the top left corner of the iframe, then navigate This Frame->Show Only This Frame, then you see the "Advanced"->"Accept the Risk and Continue" button. Click it.After that hit "back" twice and refresh .

- IOTC-2948 - Time mismatch is seen between the actual time and the time shown in Controller.

  Workaround - None.

- IOTC-2597-Controller:Factory default AP tx power shows as 6 not setting to max value

  Workaround - Manually set the tx-power to max from the UI.

- IOTC-2711-Concurrent ZigBee-ZigBee or BLE-BLE on dual-radio platform is not supported

  Workaround - None.

Limitations

- N+1 Auto Fallback is not supported (If primary is back online, secondary will run as active secondary)
- Database backup and restore is not supported across major releases
- Gateway supporting multi-mode causes IoT by AP protocol count to go wrong as each mode is considered as a seperate AP
- IoT co-ex feature is not supported on multi-mode Gateway

Best Practices

- Both IoT Controller and vSZ/AP need to be upgraded to their release versions of 1.5.1.0/5.2 together and upgrade from the release versions of 1.5.MR1 and above and with vSZ/AP from 5.1.1.2 is supported.
- Upgrade is supported only on +1. In case of lower version eg. 1.4 then controller needs to be upgraded to 1.5.0.1 and then to 1.5.1.0.
- Time and Timezone should be properly set in Ruckus IoT Controller.
- N+1 works on Virtual IP mode. For successful failover AP MQTT Broker should be configured for Virtual IP
- N+1 Configuration Sync happens every 5 minutes. If a configuration change and failover happened within the 5 minutes window, new configuration will be lost
- In N+1 mode make sure primary and secondary have the same admin credentials (password).
- It is recommended to install IoT controller in a host (hypervisior/KVM/virtualbox/VMplayer) which has 60% CPU and 60% MEM free
- The IoT Controller (4vCPU) at max supports upto 400 BLE beacon packets/second and any load above this could lead to controller instability. Capacity planning needs to be taken care of during deployment so as not to exceed the limit
- Use the Replace primary option in N+1 only after making sure primary is not reachable from secondary.

- For information on clusters, refer to this externally available Zigbee Alliance Zigbee Cluster Library 6 document at http://www.zigbee.org/ ~zigbeeor/wp-content/uploads/2014/10/07-5123-06-zigbee-cluster-library-specification.pdf.

- Onboarding of Telkonet devices and device report propagation to the Telkonet cloud takes a long time as the Telkonet system update periods can typically be 10-30 minutes.

- When setting up offlink VLAN, routing must be correct, otherwise access points may stay over reboot in unreachable state and require reset of the VLAN state via CLI access over ssh.

- When maintaining logged in REST API session state in Rules Engine flows, refresh period should be the same as with UI, 8 hours.

- After deleting a device from the controller for 20 seconds before trying to onboard the deleted device again.

- For Samsung SmartThings IAS Zone devices to remove the device from the controller and reonboard, delete the device from the controller before doing a factory reset of the end device.if its a new device remove the battery and then put the battery and onboard

Resolved Issues

NOTE
A number of additional issues have been resolved internal to the product.

- IOTC-3012-Presence of wired device on the controller causes count mismatch on number of devices between Devices Last seen widget and Devices by Protocol widget in the Dashboard.
- IOTC-2693-On downgrading from 1.5.0.1 to 1.4, track_central_service and node_red_service should not display/running
- IOTC-3267 - When adding additional license to an existing IoT controller with license total license count may not correctly increase.
- IOTC-3251 - Soter device is sometimes shown offline in the IoT Controller even if Soter cloud shows both devices online.

Caveats

- Disk Space must re-size from 8GB to exactly 20GB (less than or greater than 20GB will cause failure) when IoT Controller is upgraded from 1.4.0.0.17 to 1.5.0.1.

- The IoT stack will not come up if the IoT controller with IoT Access Points were to upgrade from (AP FW:5.1.1.2) 1.5.0.0 **to** 5.2.0.0 **and back to** (5.1.1.2) 1.5.0.0. The work around for this issue is as follows:

  - Need to move the AP back to release 5.2.0.0
  - Run the **uboot_ctrl.sh enable** command
  - Reboot the AP
  - Downgrade the AP to Release 1.5 (5.1.1.2.15524)
  - Check that the IoT stack has come up and that the IoT Dongle was detected.

Supported Devices

This section documents the supported IoT end devices. Multiple other devices may work with this release but they have not been validated.

Device	Type	Mode	Manufacturer	Basic Name	Basic Model
Vingcard Signature	Lock	Zigbee	Assa-Abloy	AA_LOCK	
Vingcard Essence	Lock	Zigbee	Assa-Abloy	AA_LOCK	
Yale YRD220/240 TSDB Display Lock	Lock	Zigbee	Assa-Abloy	Yale	YRD220/240 TSDB
Yale YRD210 Push Button Lock	Lock	Zigbee	Assa-Abloy	Yale	YRD210 Push
Smartcode 916	Lock	Zigbee	Kwikset	Kwikset	SMARTCODE_DEADBOLT_10T
Smartcode 910 (450201)	Lock	Zigbee	Kwikset	Kwikset	
Lightify (RGB) Model 73674	Bulb	Zigbee	Osram	OSRAM	LIGHTFY A19 RGBW
Lightify Model 73693	Bulb	Zigbee	Osram	OSRAM	LIGHTIFY A19 Tunable White45856
Lightify Model 73824	Bulb	Zigbee	Osram	OSRAM	
Element Color Plus	Bulb	Zigbee	Sengled	sengled	E11-N1EA
Bulb - LED	Bulb	Zigbee	Sengled	sengled	Z01-A19NAE26
E11-G13	Bulb	Zigbee	Sengled	sengled	E11-G13
Lux	Bulb	Zigbee	Philips	Philips	LWB004
SLV E27 Lamp Valeto (Zigbee 3.0)	Bulb	Zigbee 3.0	SLV		
GE Smart Dimmer	Switch	Zigbee	GE	Jasco Products	45857
GE Smart Switch	Switch	Zigbee	GE	Jasco Products	45856
Smart Plug	Plug	Zigbee	CentraLite	CentraLite	4257050-ZHAC
Zen Thermostat	Thermostat	Zigbee	Zen Within	Zen Within	Zen-01
ZBALRM	Alarm	Zigbee	Smartenit		Model #1021 A
Temp, Humidity Sensor	Sensor	Zigbee	Heiman	HEIMAN	HT-N
Gas detector	Sensor	Zigbee	Heiman	HEIMAN	GASSensor-N
Contact Sensor/Door Sensor	Sensor	Zigbee	CentraLite	CentraLite	3300-G
3-Series Motion Sensor	Sensor	Zigbee	CentraLite	CentraLite	3305-G
Temperature Sensor	Sensor	Zigbee	CentraLite	CentraLite	3310-G
Multipurpose Sensor	Sensor	Zigbee	Smart things	Samjin	
Button	Sensor	Zigbee	Smart things	Samjin	
Motion Sensor	Sensor	Zigbee	Smart things	Samjin	
Water Leak Sensor	Sensor	Zigbee	Smart things	Samjin	
Motion Sensor	Sensor	Zigbee	Aduro SMART ERIA	ADUROLIGHT	
Smart Plug	Plug	Zigbee	Smart Things	Samjin	
Bulb	Bulb	Zigbee	Aduro SMART ERIA		
Bulb	Bulb	Zigbee	Cree		BA19-08027OMF-12CE26-1C100
Smart Plug	Plug	Zigbee	INNR		
Smart Blinds	Blinds	Zigbee	Axis Gear		
Occupancy Sensor	Sensor	Zigbee	Telkonet		

Supported Devices

Device	Type	Mode	Manufacturer	Basic Name	Basic Model
Door Sensor	Sensor	Zigbee	Telkonet		
Thermostat	Thermostat	Zigbee	Telkonet		
Picocell	Gateway	LoRa	Semtech		
Mini Hub/ Basic station	Gateway	LoRa	TABS		
Door Sensor	Sensor	LoRa	TABS		
Occupancy Sensor	Sensor	LoRa	TABS		
Panic Button	Beacon	BLE	TraknProtect		
Tray Beacon	Beacon	BLE	TraknProtect		
Asset Beacon	Beacon	BLE	TraknProtect		
Card Beacon	Beacon	BLE	TraknProtect		
Card Tag	Beacon	BLE	Kontakt.io		CT18-3
Beacon Pro	Beacon	BLE	Kontakt.io		BP16-3
Asset Tag	Beacon	BLE	Kontakt.io		S18-3
Vape/Sound Sensor	Sensor	Wired	Soter		FlySense

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