

# RUCKUS IoT 1.6 Release Notes

Supporting IoT Controller Release 1.6

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# Document History

Revision Number	Summary of changes	Publication date
A	Initial Release Notes	October, 2020

## Overview

This document provides release information about RUCKUS IoT Suite 1.6 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-1.6 Suite provides the following update

- Dormakaba Integration
- BLEscan plugin integration (AVsystems)
- Full Multi-Radio support with arbitrary modes up to 3 radios
- Export IoT GW APs /IoT Devices List as CSV
- Enhancement to React Mobile integration
- Documentation/Guide to convert controller image to AWS AMI Image
- MQTT Push Plugin interface
- Security Vulnerability Fixes
- General Stability Fixes

## Changed Behavior

### **STOP and READ before upgrading to 1.6**

Downgrade from 1.6.0.0 to a lower version is not supported

**IoT Controller Licensing:**

Starting from Release 1.5 onwards IOT controller require following licenses to operate

- RTU
- IOT AP Capacity Licenses
- Support Licenses

**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 expected 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. In case 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)

## Release Information

- 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: 5.2.1.0.515
- Control plane software version in the WLAN Controller: 5.2.1.0.383
- AP firmware version in the WLAN Controller: 5.2.1.0.698
- IoT Gateway Version: 1.6.0.0.16003

### RIoT:

- RUCKUS IoT Controller version: 1.6.0.0.42
- VMWare ESXi version: 6.0 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

**TABLE 1** Release Build Compatibility Matrix

Release	IoT Controller	SZ	AP	Supported AP Models
<b>SZ 5.1.1.2</b>	1.3.1.0.1	5.1.1.2.14019	5.1.1.2.14019	H510, R510, T310d, R610, R710, R720, T610, R730
<b>SZ 5.1.2</b>	1.3.1.0.1	5.1.2.0.302	5.1.2.0.373	H510, R510, T310d, R610, R710, R720, T610, R730, R750
<b>IoT GA 1.4</b>	1.4.0.0.17	5.1.1.2.15014	5.1.1.2.15014	H510, R510, T310d, R610, R710, R720, T610, R730, C110
<b>IoT 1.5</b>	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
<b>IoT 1.5MR1</b>	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
<b>IoT 1.5.0.1</b>	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
<b>IoT 1.5.1.0</b>	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
<b>IoT 1.5.1.1</b>	1.5.1.1.22	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
<b>IoT 1.6.0.0</b>	1.6.0.0.42	5.2.1.0.515	5.2.1.0.698 IoT Version : 1.6.0.0.16003	H510, R510, T310d, E510, R610, R650, R710, R720, T610, R730, R750, T750, C110, M510

**TABLE 2** IoT Upgrade Support Matrix

Version		GA-1.3.1.0	GA-1.4.0.0	GA-1.5.0.0	GA-1.5MR1	GA-1.5.0.1	GA-1.5.1.0	GA-1.5.1.1	Ga-1.6.0.0
<b>GA-1.3.1.0</b>	<b>5.1.1.2/5.1.2</b>	Yes	Yes	No	No	No	No	No	No
<b>GA-1.4.0.0</b>	<b>5.1.1.2</b>	No	Yes	Yes	Yes	No	No	No	No
<b>GA-1.4.0.0</b>	<b>5.2.0.0</b>	No	Yes	No	No	Yes	Yes	No	No
<b>GA-1.5.0.0</b>	<b>5.1.1.2</b>	No	No	Yes	Yes	No	No	No	No
<b>GA-1.5MR1</b>	<b>5.1.1.2</b>	No	No	No	Yes	Yes	Yes	No	No
<b>GA-1.5.0.1</b>	<b>5.2.0.0</b>	No	No	No	No	Yes	Yes	No	No
<b>GA-1.5.1.0</b>	<b>5.2.0.0</b>	No	No	No	No	No	Yes	Yes	No
<b>GA-1.5.1.1</b>	<b>5.2.0.0</b>	No	No	No	No	No	No	Yes	Yes
<b>GA-1.6.0.0</b>	<b>5.2.1.0</b>	No	No	No	No	No	No	No	Yes

## Known Issues

The following are the list of known issues.

### Component: IoT feature in Access Point with IoT Module I100

- IOTC-3502 - Gateway: Remove old Coex related commands from rkscli  
**Workaround** - Enable/Disable the coex from the IoT controller
- IOTC-3159 - Factory resetting the T750 AP disables the IOT  
**Workaround** - Setting correct power level automatically enables the IoT process
- IOTC-2911 - get iotg-zigbee-ch rkscli returning wrong channel value for the BLE mode  
**Workaround** - None

## Known Issues

Component: RUCKUS IoT Controller

- IOTC-1832 - In Dense BLE beacon deployments (more than 800 beacons seen by single AP) the beacon packets are dropped and would experience longer latency to reach the endpoint  
**Workaround** - None
- IOTC-3551 - Configuring the MQTT brokerip with more than 40 characters crashes the rksccli  
**Workaround** - None
- IOTC-3557 - Zigbee\_DK mode allows generic zigbee devices to connect by no attributes or commands are listed  
**Workaround** - None

## Component: RUCKUS IoT Controller

- IOTC-3765 - When Ambiance Server is set to European date format, date shows up nana/nana/  
**Workaround** - Set the date in US format in the Ambiance Server
- IOTC-3760 - Ambiance UI shows Door is Unlatch under Metric though Door is latched  
**Workaround** - None. Contact Dormakaba.
- ER-9013- IOT controller showing invalid AP capacity license count with -ve value  
**Workaround** - Contact Customer Support to provide Workaround
- IOTC-3757 - Removing and readding a AP with BLE scan enabled causes instability on the AP  
**Workaround** - remove the BLE scan plugin in the AP config page and once the AP is properly setup, re-enable the BLE scan plugin
- IOTC-3731 - Node-Red Deploy Icons are not correctly displayed when node-red config screen is opened in a new window  
**Workaround** - None
- IOTC-3720/ IOTC-3674 - Zone\_ID of IAS devices may be displayed as 255 for some devices  
**Workaround** - Triggering an event from the device sometimes sets the correct Zone\_ID
- IOTC-3719 - MQTT Push events sent even with no state/device change/Action  
**Workaround** - None
- IOTC-3705 - No logs shown in UI for BLE scan on clicking on View Logs  
**Workaround** - None
- IOTC-3690 - Sometimes messages may be lost in Ambiance Server when onboarding leading to lock not showing up in Ambiance Server  
**Workaround** - Tap a guest card on the lock (trigger an event from the lock) to make the lock show up in Ambiance Server
- IOTC-3650 - Restoring a db backup from a N+1 controller on a standalone controller enables N+1  
**Workaround** - None
- IOTC-3646 - Activate/Deactivate of Plugin logs the user out when deployed in Virtualbox or VMplayer  
**Workaround** - None
- IOTC-3540-Telkonet: setting static ip from controller shell does causing telkonet plugin not to run  
**Workaround** - deactivate and activate the plugin
- IOTC-3524 - Dormakaba: After battery field replacement, lock's clock does not sync up.  
**Workaround** - Use the lock encoder to set the proper time in the lock
- IOTC-3080-Blacklisted devices are part of total device count in the dashboard.  
**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-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-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-2971- After initial configuration of the controller the UI will remain stuck in the EULA page in Firefox Browser  
**Workaround** – Refresh the page in the browser
- 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 .

## Resolved Issues

### NOTE

The following issues are Resolved for this release

Key	Summary
IOTC-2691	RUCKUS IoT Controller: Three network interfaces are shown for the R730 AP while connecting the AP to old Controller
IOTC-3355	User will not be able to load .mov format file to node-red file manager.
IOTC-3314	Heartbeat message is not sent when enabled only on Vendor 2
IOTC-3313	Heartbeat message is sent for both the vendors even if enabled for only for vendor1
IOTC-3227	LNS tab does not present the LoRa Network Server after upgrade
IOTC-3194	Disabling N+1 resets the fallback node and removes the default license.
IOTC-3087 IOTC-3005	In a DB restored controller license alert and second license upload will not work.
IOTC-3075	Only the first 10 APs is shown in the Beacons (IoT Devices) page irrespective of AP being BLE or Zigbee.
IOTC-3067	N+1 configuration failed if primary and secondary have same hostname is upper and lower case.
IOTC-2948	Time mismatch is seen between the actual time and the time shown in Controller.
IOTC-2597	Controller: Factory default AP tx power shows as 6 not setting to max value

## Best Practices

Following is the list best practices

- Both RUCKUS IoT Controller and vSZ/AP need to be upgraded to their release versions of 1.6.0.0/5.2.1 together and upgrade from the release versions of 1.5.1.1 and above and with vSZ/AP from 5.2.0.0 is supported.
- Upgrade is supported only on +1. In case of lower version eg. 1.5.1.0 then controller needs to be upgraded to 1.5.1.1 and then to 1.6.0.0
- 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

## Caveats and Limitations

- 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 (hypervisor/KVM/virtualbox/VMplayer) which has 60% CPU and 60% MEM free
- The RUCKUS IoT Controller (4vCPU) at maximum 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 wait for 20 seconds before trying to onboard the deleted device again.
- For IAS Zone devices to remove the device from the controller and re-onboard, 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

# Caveats and Limitations

## Caveats

- Dormakaba support relies on Dormakaba's Ambiance server version 2.5 that is not officially released at the time of writing this release note. We have verified and tested basic connectivity and functional aspects, however a limited number of test cases are dependent on Ambiance server version 2.5 and will need to be verified with the official release by Dormakaba
- Disk Space must re-size from 8GB to exactly 20GB (less than or greater than 20GB will cause failure) starting from 1.5 Release onwards and exactly 20GB should be allocated during deployment in cloud.

## Limitations

- Downgrade is not supported from 1.6 to any other lower version
- HTTPS Communication is not supported between Ambiance (Dormakaba) and IoT Controller
- Concurrent ZigBee-ZigBee, ZigbeeAA-ZigbeeAA, ZigbeeDK-Zigbee-DK on dual-radio platform is not supported.
- Broker IP is set to Unconfigured if controller is not reachable for 24Hrs. Broker IP has to be reconfigured either manually through RKSLI or DHCP Option-43
- 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 separate AP
- IoT co-ex feature is not supported on multi-mode Gateway

## 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	
RT+	Lock	Zigbee	Dormakaba	Dormakaba	79PS01011ER-626
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	LIGHTIFY 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 Valetto (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		
Door Sensor	Sensor	Zigbee	Telkonet		

## Supported Devices

Device	Type	Mode	Manufacturer	Basic Name	Basic Model
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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