

# Configure Point-to-MultiPoint Network on IW APs Using IoT OD

## Contents

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## Introduction

This document describes configuration of point-to-multipoint networks on Industrial Wireless (IW) APs using templates from IoT Operations Dashboard.

## Accessing IoT OD

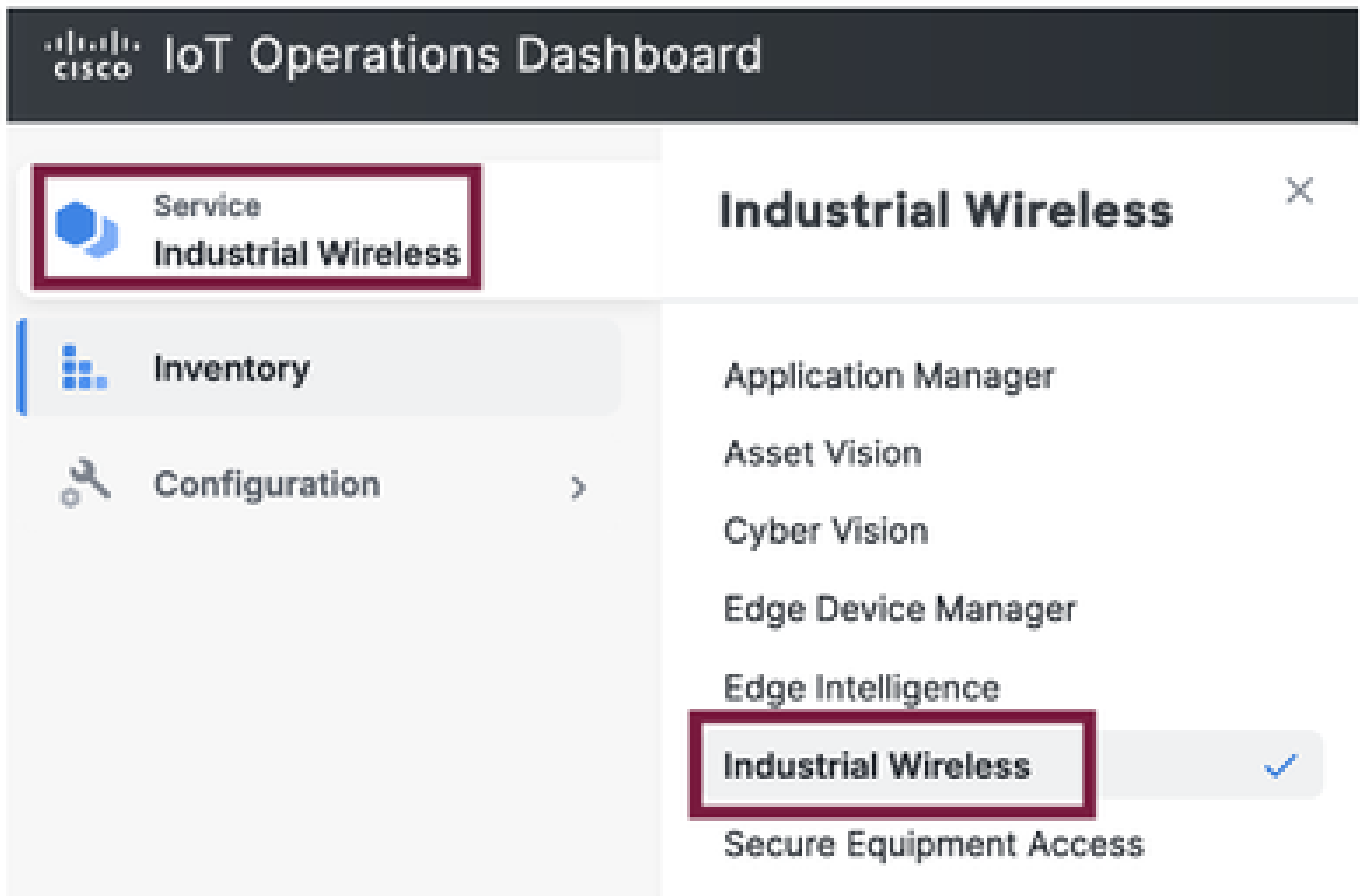
The IW Access Points (APs) like IW9165 and IW9167 can be configured in either CAPWAP or URWB mode.

When these access points are configured in the URWB mode, they can be configured using the IoT-Operations Dashboard or locally in offline mode. The IoT Operations Dashboard can be accessed with these links, depending on where the tenants are located.

<https://us.ciscoiot.com>

<https://eu.ciscoiot.com>

After logging in and picking the right tenant, select Industrial Wireless under Service to access the feature set for CURWB radios.



## Manual Onboarding

Devices can be manually onboarded to IoT OD from the Inventory page.

Select Add Devices and pick the PID of the devices that are added. A CSV file can be uploaded with the Serial Number and MAC Address of the devices on it; each line has one entry.

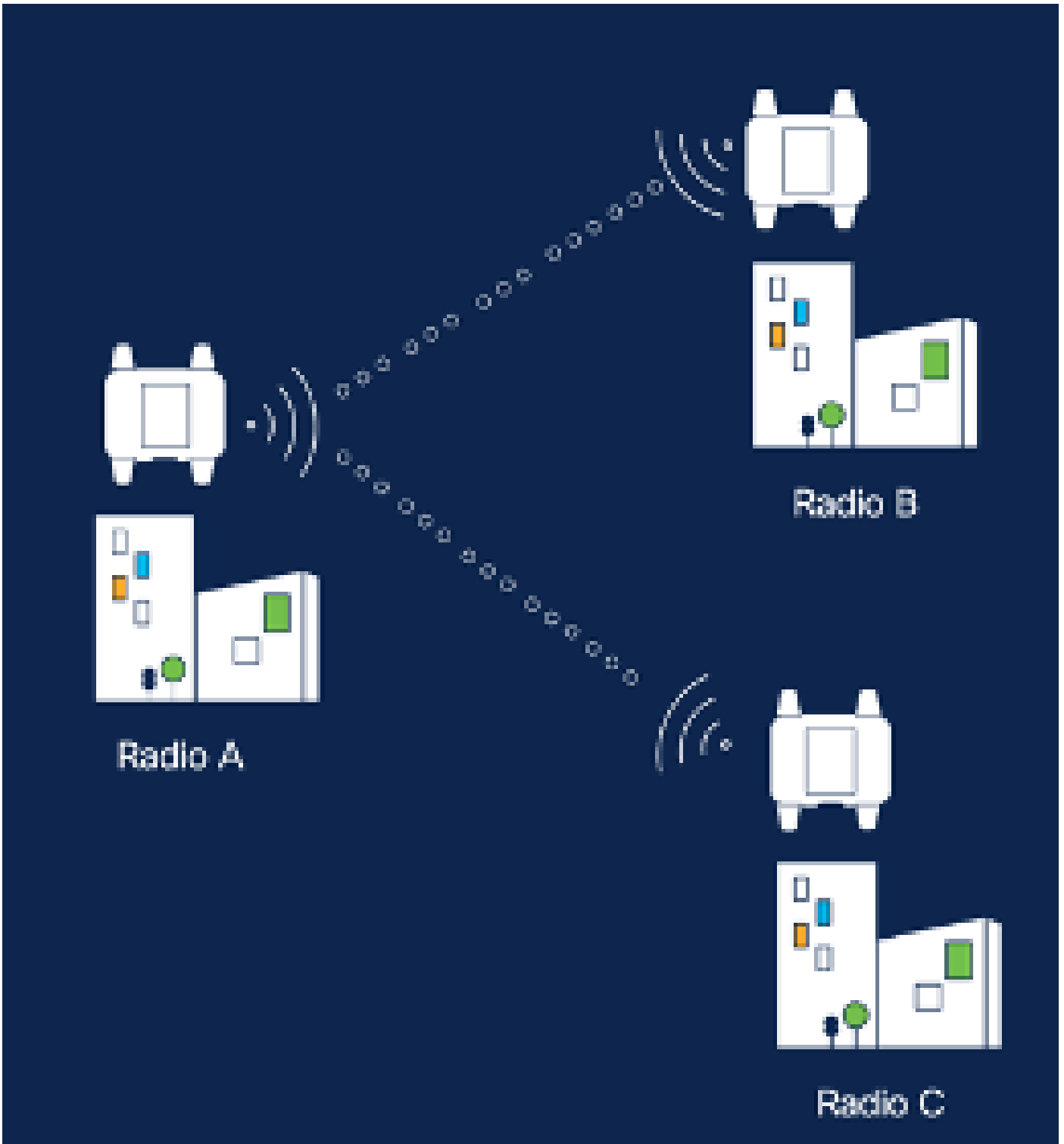
Example: SN001234,00:f1:ca:00:00:01

SN003457,00:f1:ca:00:00:02

Once uploaded, click Add devices at the bottom to manually import devices to the dashboard. They then show up under the Inventory tab.

## IoT OD Point to Multipoint configuration

A Point-to-Multi Point setup with IW916x Access Points can be configured via IoT OD with a few simple steps. Consider three APs, Radio A acting as a Mesh End and Radio B and C acting as Mesh Points.



1. Once the devices are added to IoT OD and the status is 'Online', the configuration can be edited by selecting the required device. Click on the device and navigate to the 'Configuration' tab, select the 'Edit' button to update the configuration.

Device Configuration [Edit](#) [Push IoT OB Configuration](#)

IoT OB Configuration

ID 0

Saved - 2024-06-24 10:49:38 am

Last heard configuration

ID -

Last heard - 2024-06-26 23:08:22 pm

 Last heard and IoT OB Configuration do not match.

[Review previous configurations](#)

Only show differences

- General
- Wireless Radio
- Advanced Radio Settings
- Key Control
- FastMAN
- Multicast
- SNMP
- Radios
- NTP

General

	IoT OB	Last Heard
Mode	Mesh Point	Mesh End
Radio off	Off	Off
Local IP Address	192.168.0.10	10.122.136.9
Local Netmask	255.255.255.0	255.255.255.192
Default Gateway		10.122.136.1
Local Dns 1		172.18.168.24
Local Dns 2		172.18.168.43

# Edit Device Configuration

- General**
- Wireless Radio
- Advanced Radio Settings
- Key Control
- FluidMAX
- Multicast
- SNMP
- Radius
- NTP
- L2TP
- Vlan
- Fluidity
- Fluidity Advanced
- Fluidity Pole Proximity

## General

---

**Mode**  
•

**Mesh Point**

---

**Radio off**

**Radio off mode**  
Select Value

---

**Local IP Address**  
•  
192.168.0.10

---

**Local Netmask**  
•  
255.255.255.0

---

- For a PTMP config, in the 'General Mode' section, the AP directly connected to the physical network (Radio A) is configured as a Mesh End and the two APs connected to the end devices (Radio B and Radio C) are configured as Mesh Points.

# Edit Device Configuration

Search

- General
- Wireless Radio
- Advanced Radio Settings
- Key Control
- FluidMAX
- Multicast
- SNMP
- Radius
- NTP
- L2TP
- Vlan
- Fluidity
- Fluidity Advanced
- Fluidity Pole Proximity

## General

● Mode  
Mesh End

● Radio off

● Radio off mode  
Fixed

● Local IP Address  
10.122.136.9

Local Netmask  
255.255.255.0

Radio A Configuration

# Edit Device Configuration

Search

- General
- Wireless Radio
- Advanced Radio Settings
- Key Control
- FluidMAX
- Multicast
- SNMP
- Radius
- NTP
- L2TP
- Vlan
- Fluidity
- Fluidity Advanced
- Fluidity Pole Proximity

## General

### Mode

Mesh Point

### Radio off



### Radio off mode

Fixed

### Local IP Address

10.122.136.10

### Local Netmask

255.255.255.0

Radio B Configuration

# Edit Device Configuration

- General**
- Wireless Radio
- Advanced Radio Settings
- Key Control
- FluidMAX
- Multicast
- SNMP
- Radius
- NTP
- L2TP
- Vlan
- Fluidity
- Fluidity Advanced
- Fluidity Pole Proximity

## General

Mode

Mesh Point

---

Radio off

Radio off mode

Select Value

---

**Local IP Address**

192.168.0.11

---

Local Netmask

255.255.255.0

---

## Radio C Configuration

- Under the 'Wireless Radio' section, all three of the radios must be configured with the same passphrase. We are only enabling one radio per IW device for this setup. Enable the radio you picked (Radio 1 or Radio 2), and make sure all the radios have the same frequency and channel width on them. When connecting antennas, the right external ports based on the selected radio must be used.



# Edit Device Configuration

🔍 Search

- General
- Wireless Radio**
- Advanced Radio Settings
- Key Control
- Fluidmax
- Multicast
- SNMP
- Radios
- NTP
- L2TP
- Vlan
- Fluidity
- Fluidity Advanced
- Fluidity Pole Proximity

## Wireless Radio

Passphrase  
Cisc0uPw8123

Radio 1 enabled <input checked="" type="checkbox"/>	Radio 2 enabled <input type="checkbox"/>
Radio 1 role Fluid	Radio 2 role Select Value
Radio 1 Frequency (MHz) 5180 MHz	Radio 2 Frequency (MHz) Select Value
Radio 1 Channel width 80	Radio 3 Channel width Select Value

In the 'Wireless Radio' section for a PTMP setup, the Radio role for the Mesh End Radio A is configured as Fluidmax Primary and the Mesh Point radios Radio B and C are configured as Fluidmax Secondary.

# Edit Device Configuration

Search

- General
- Wireless Radio**
- Advanced Radio Settings
- Key Control
- FluidMAX
- Multicast
- SNMP
- Radius
- NTP
- L2TP
- Vlan
- Fluidity
- Fluidity Advanced
- Fluidity Role Proximity

### Wireless Radio

Passphrase  
CiscoFW0

Radio 1 enabled  Radio 2 enabled

Radio 1 role  
Fluidmax primary Select Value

Radio 1 Frequency (MHz)  
5180 MHz Select Value

Radio 1 Channel width  
80 Select Value

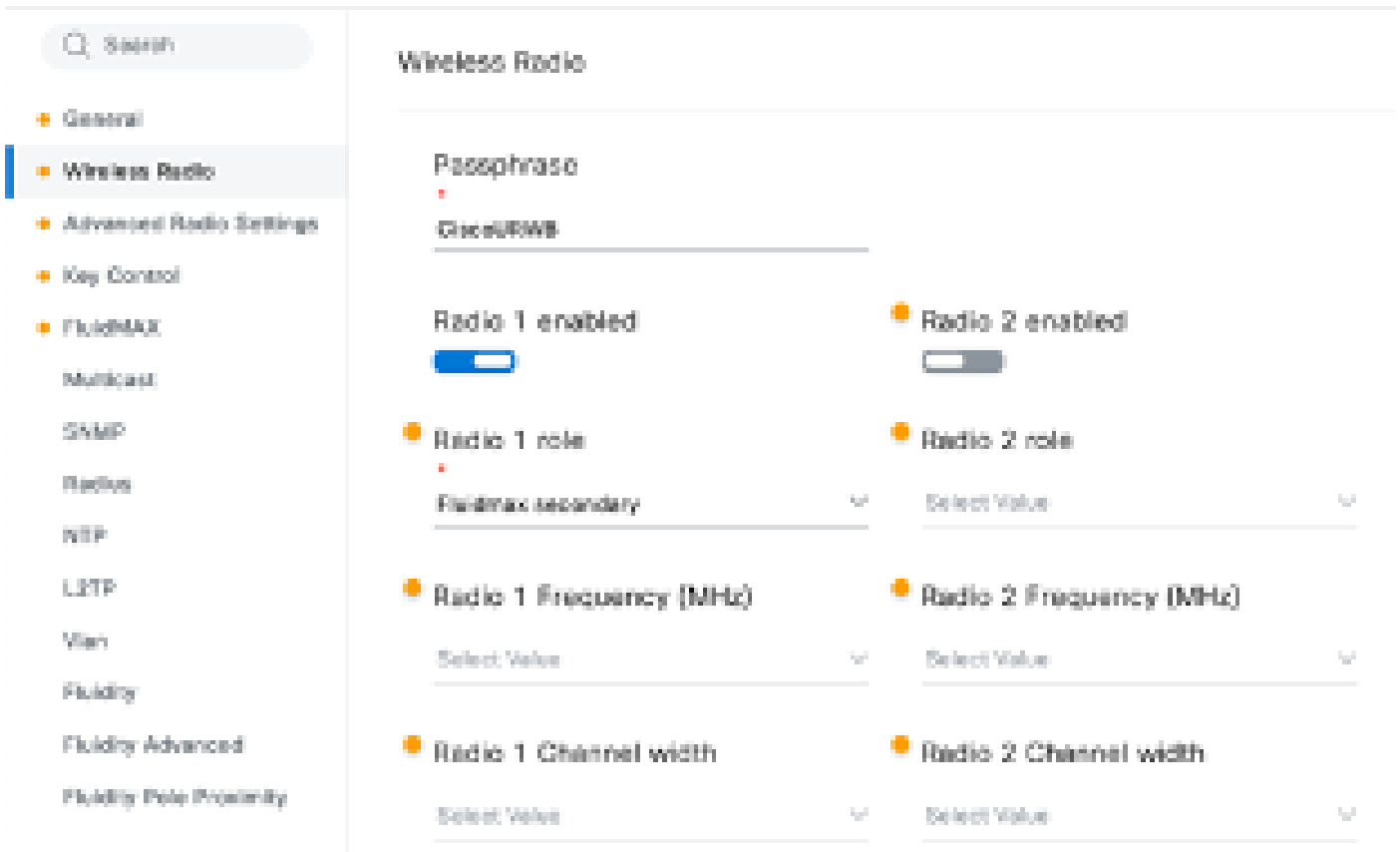
Radio 2 role  
Select Value

Radio 2 Frequency (MHz)  
Select Value

Radio 2 Channel width  
Select Value

Radio A config

# Edit Device Configuration



Search

- General
- Wireless Radio**
- Advanced Radio Settings
- Key Control
- FluidMAX
- Multicast
- SNMP
- Radius
- NTP
- L2TP
- Vlan
- Fluidfy
- Fluidfy Advanced
- Fluidfy Pole Proximity

### Wireless Radio

Passphrase  
CiscoURWB

Radio 1 enabled  Radio 2 enabled

Radio 1 role  
Fluidmax secondary Select Value

Radio 1 Frequency (MHz) Select Value Radio 2 Frequency (MHz) Select Value

Radio 1 Channel width Select Value Radio 2 Channel width Select Value

## Radio B and C config

- Fluidmax Primary/Secondary modes are used to identify individual clusters when there are multiple PTMP sections in a cascading topology. Each cluster of Fluidmax primary and its corresponding Fluidmax secondary radios are assigned a Cluster ID. This parameter is configured under the 'Fluidmax' section. In this setup, the Cluster ID is set as the default "CiscoURWB" on all three radios.

# Edit Device Configuration

The screenshot shows the 'Edit Device Configuration' page for FluidMAX. On the left is a navigation menu with options: General, Wireless Radio, Advanced Radio Settings, Key Control, FluidMAX (selected), Multicast, SNMP, Radius, NTP, L2TP, Vlan, Fluidity, Fluidity Advanced, and Fluidity Pole Proximity. The main content area is titled 'FluidMAX' and contains two columns of settings for Radio 1 and Radio 2. The settings include FluidMAX mode (Primary and Select Value), FluidMAX Autoscan (both toggled on), FluidMAX Cluster ID (CiscoURWB), Enable FluidMAX Tower ID (both toggled off), FluidMAX Tower ID (CiscoURWB), and Critical RSSI threshold (both with input fields).

Once the configuration is edited, click 'Save' at the bottom.

- Now the updated configuration can be pushed from IoT-OD directly to the radios with the 'Push IoT OD Configuration' button. Hit Confirm once prompted. The device is rebooted and accessible from the IP from the pushed config.

The screenshot shows the configuration management interface. On the left is a navigation menu with options: Inventory (selected), Configuration, and another Configuration option. The main content area shows the configuration for a Cisco device. At the bottom, there is a 'Push IoT OD Configuration' button.



## Push Configuration

You're about to push the latest IoT CG device configuration (Conf. ID: 2 ) to the device Class (Serial Number KWC2702000K). This operation will take up to 5 minutes. Your device will reboot automatically.

Cancel

Confirm



## Push Configuration

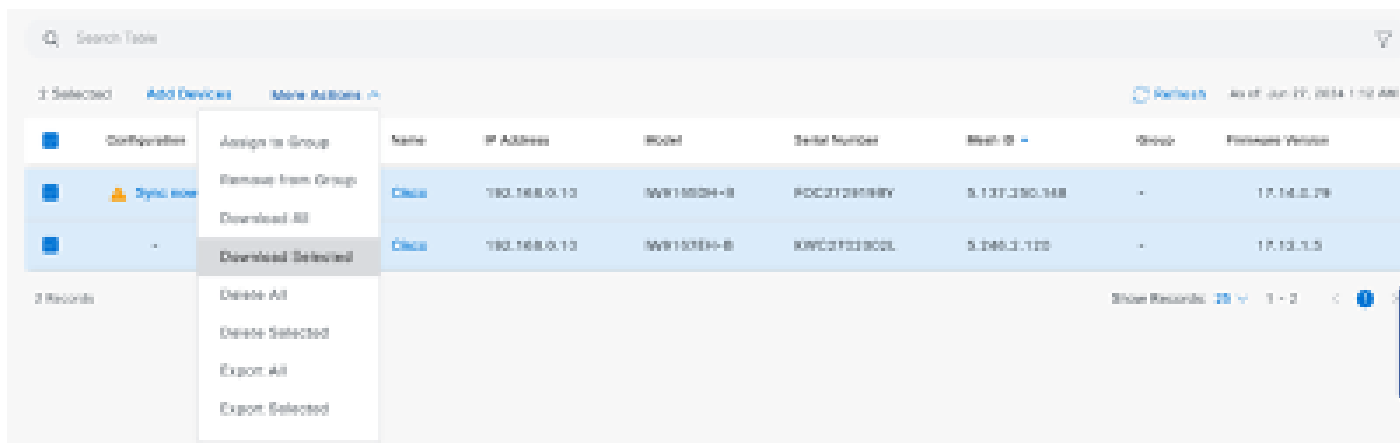
You're about to push the latest IoT CG device configuration (Conf. ID: 2 ) to the device Class (Serial Number KWC2702000K). This operation will take up to 5 minutes. Your device will reboot automatically.

Cancel

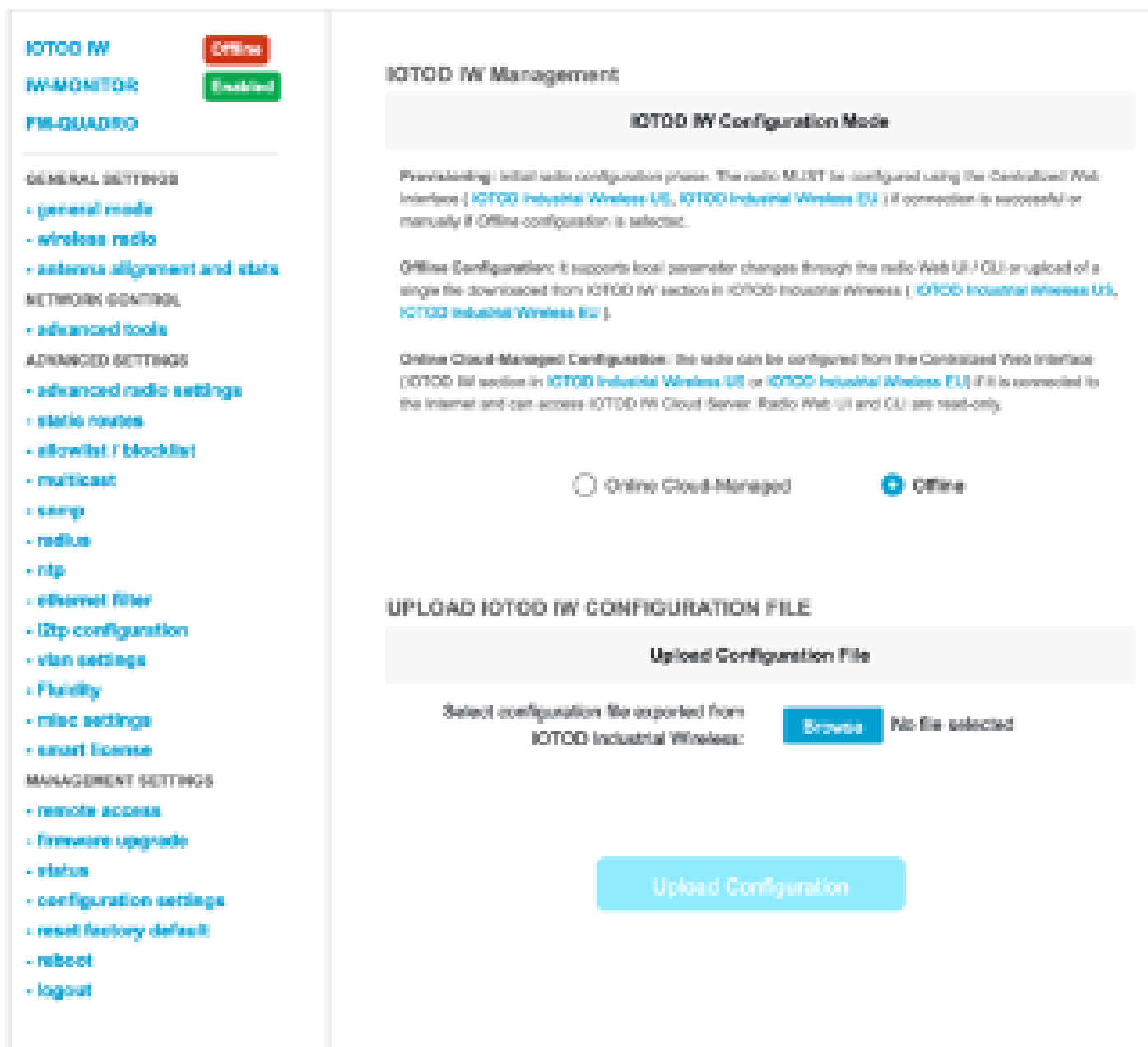
Confirm

6. Another option to push config, if the radios are 'Offline' is to download the configuration file. From


the Inventory tab, select one or multiple devices, and from the 'More Actions' dropdown menu, select the 'Download Selected' button.



A file with extension .iwconf is downloaded. The same file can be uploaded to the GUI of the devices from the IoT-OD tab.



The configuration can be checked on the Status page.



ULTRA RELIABLE  
WIRELESS BACKHAUL

### Cisco URWB IW9167EH Configurator

5.246.226.200 - MESH END MODE

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**IOT00 IW** Offline

**IW-MONITOR** Disabled

**FM-QUADRO**

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GENERAL SETTINGS

- general mode
- wireless radio
- antenna alignment and stats

NETWORK CONTROL

- advanced tools

ADVANCED SETTINGS

- advanced radio settings
- static routes
- allowlist / blocklist
- multicast
- snmp
- radius
- ntp
- ethernet filter
- l2tp configuration
- vlan settings
- Fluidity
- misc settings
- smart license

MANAGEMENT SETTINGS

- remote access
- firmware upgrade
- status
- configuration settings
- reset factory default
- reboot
- logout

#### STATUS

**Device:** Cisco Catalyst IW9167E Heavy Duty Access Point  
**Name:** ME\_Primary  
**ID:** 5.246.226.200  
**Serial:** KWC280258AS  
**Operating Mode:** Mesh End  
**Uptime:** 3 min  
**Firmware version:** 17.14.0.79

#### DEVICE SETTINGS

**IP:** 10.122.136.50  
**Netmask:** 255.255.255.192  
**MAC address:** 40:36:5a:76:a2:c8  
**Configured MTU:** 1530

#### WIRED0

**Status:** up  
**Speed:** 6000 Mb/s  
**Duplex:** full  
**MTU:** 1530

#### WIRED1

**Status:** down

#### WIRELESS SETTINGS

**Operating region:** B

#### Radio 1

**Interface:** enabled  
**Mode:** fluidmax:primary  
**Frequency:** 5180 MHz  
**Channel:** 36  
**Channel Width:** 80 MHz  
**Current tx power:** 22 dBm  
**Current tx power level:** 1  
**Antenna gain:** not selected  
**Antenna number:** 2  
**Radio Mode:** primary  
**Maximum link length:** 3 km

#### Radio 2

**Interface:** disabled  
**Mode:** fixed infrastructure  
**Frequency:** 5180 MHz  
**Channel:** 36  
**Channel Width:** 80 MHz  
**Current tx power:** 19 dBm

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7. FM-Quadro page on the Mesh End radio can be accessed to check the layout of the PTP setup.

