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

Contents

Introduction

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

Accessing IoT OD

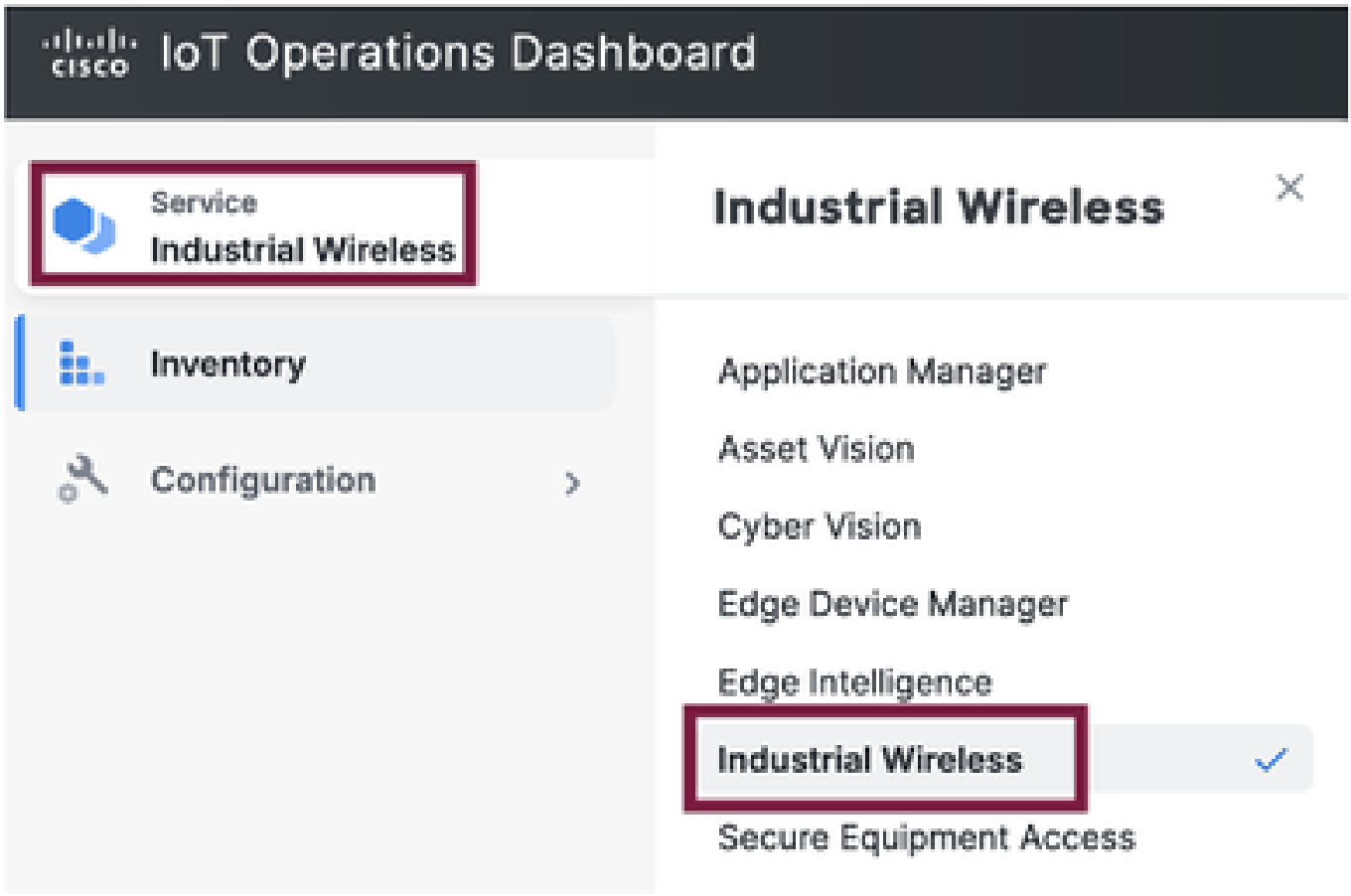
The IW Access Points (APs) like IW9165 and IW9167 can be configured in either CAPWAP or URWB mode.

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.

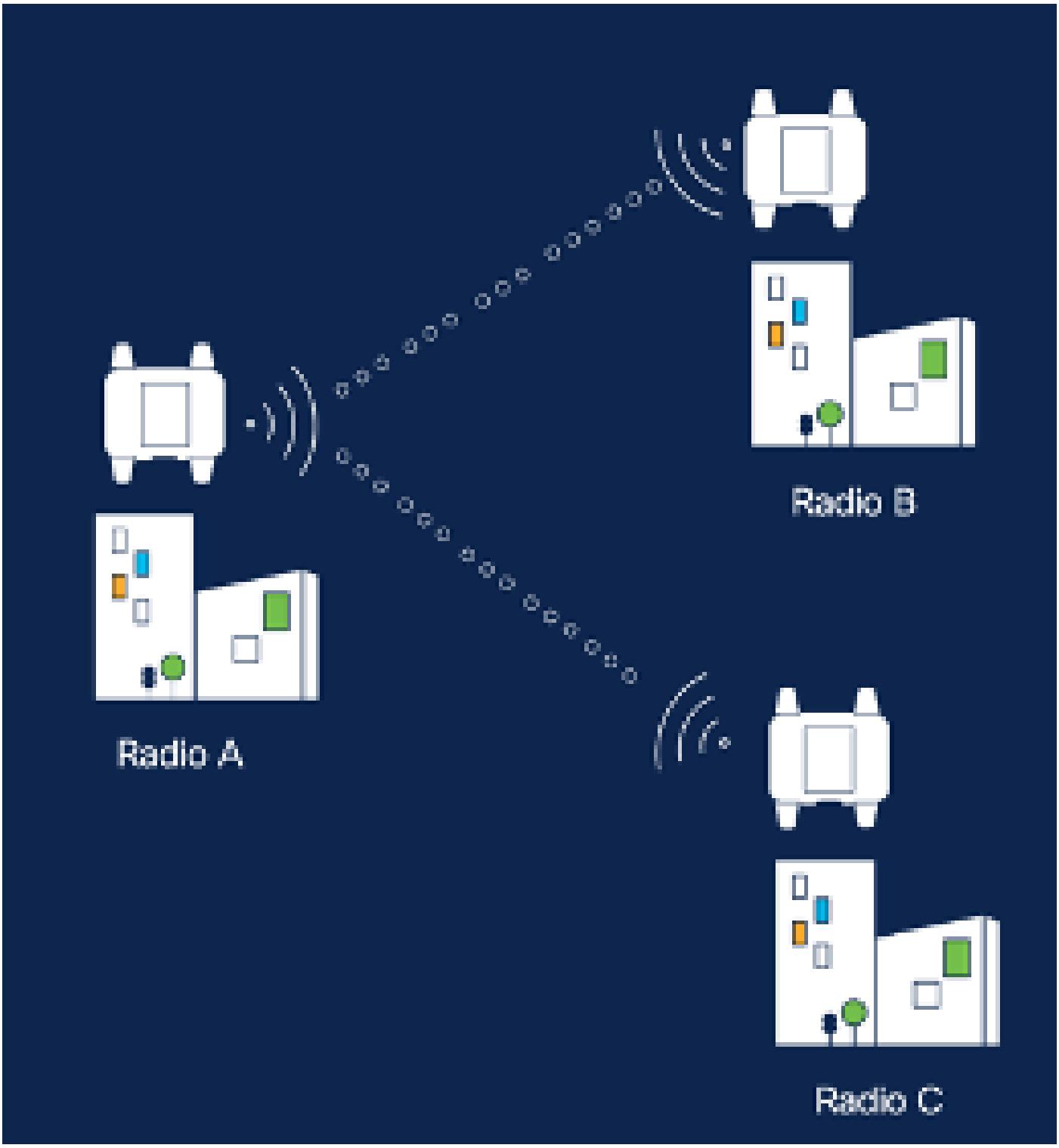
Example: SN001234,00:f1:ca:00:00:01

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

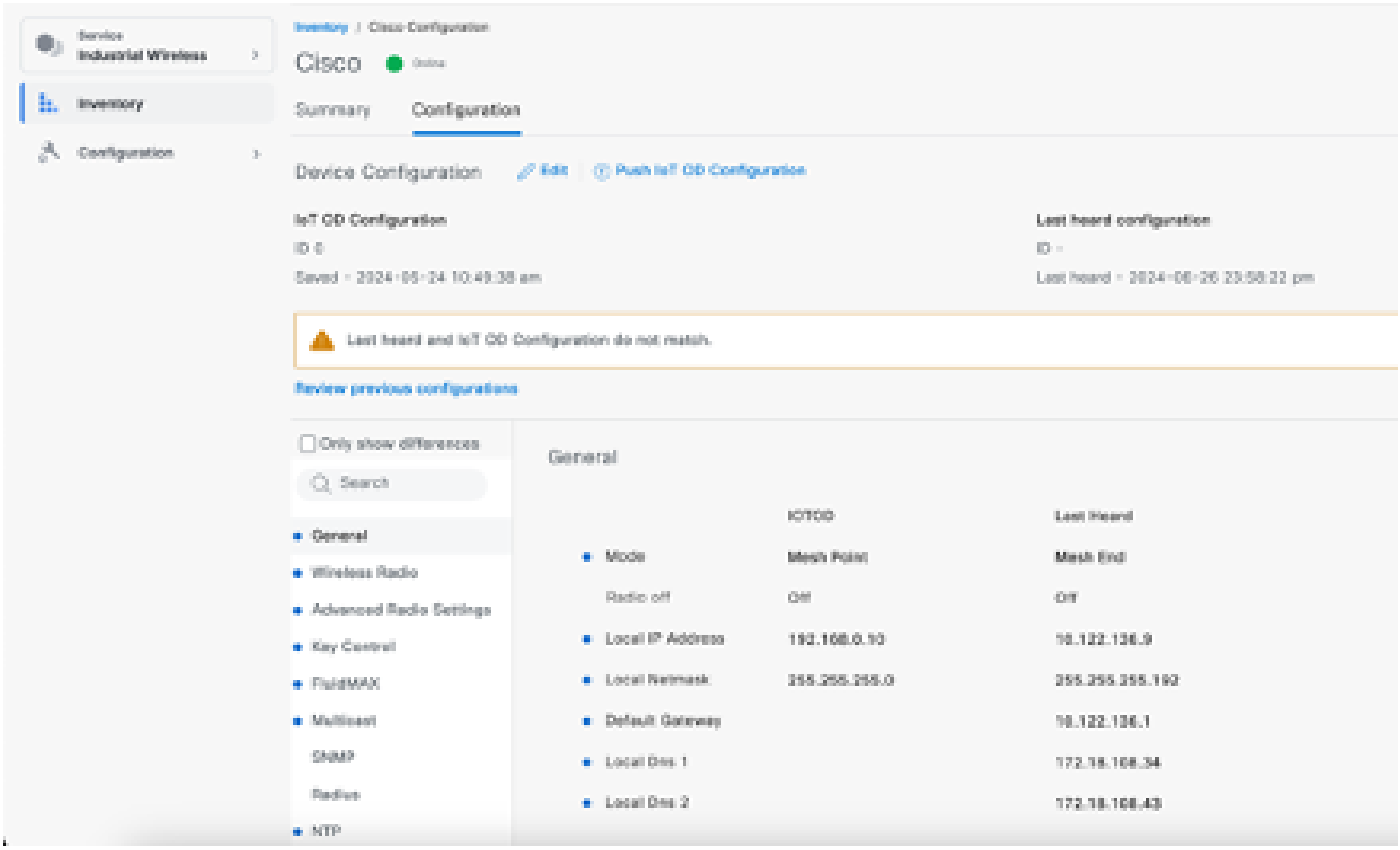
Once uploaded, click Add devices at the bottom to manually import devices to the dashboard. They then show up under the Inventory tab.

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.

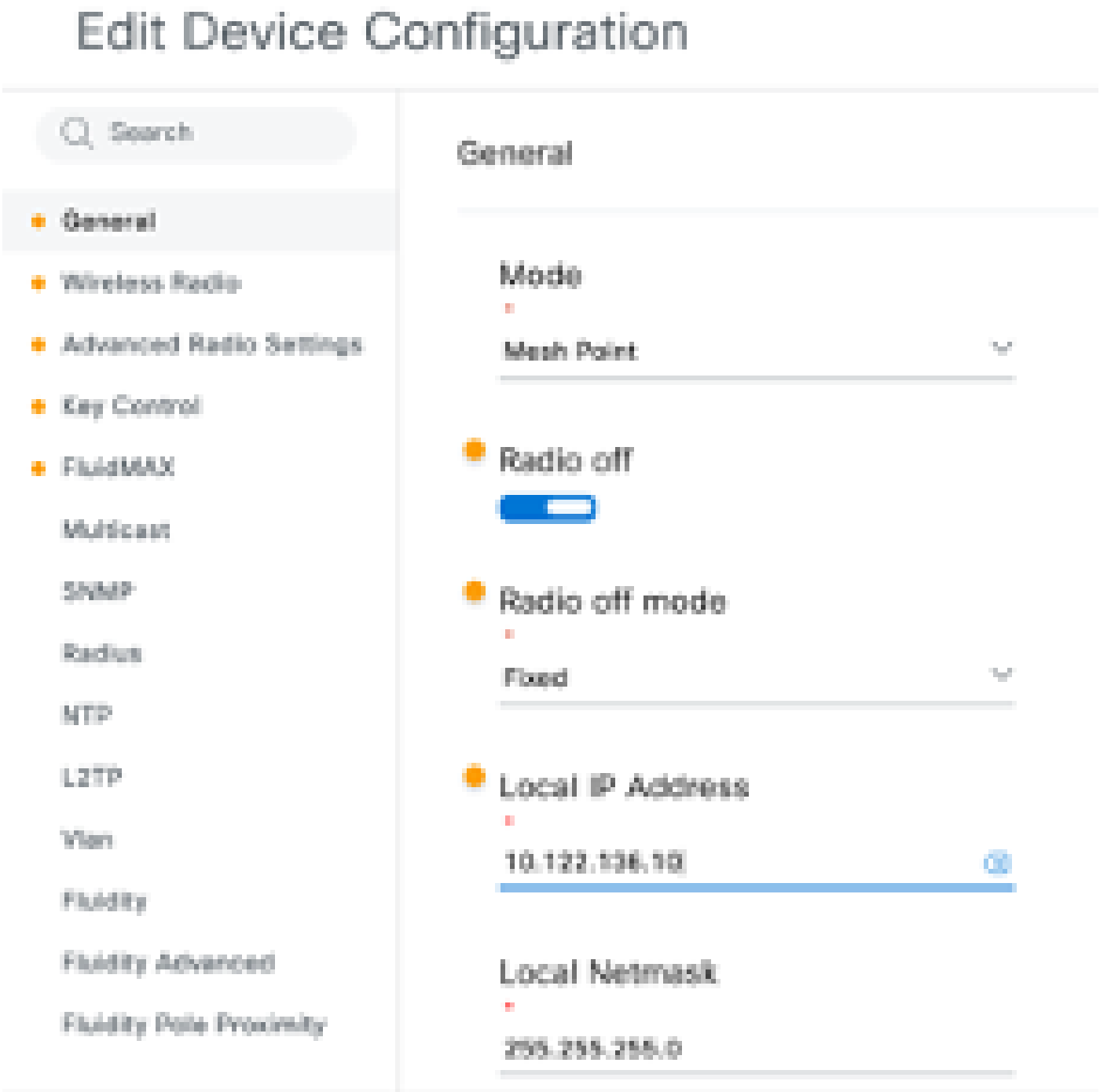


1. Once the devices are added to IoT OD and the status is ‘Online’, the configuration can be edited by selecting the required device. Click on the device and navigate to the ‘Configuration’ tab, select the ‘Edit’ button to update the configuration.

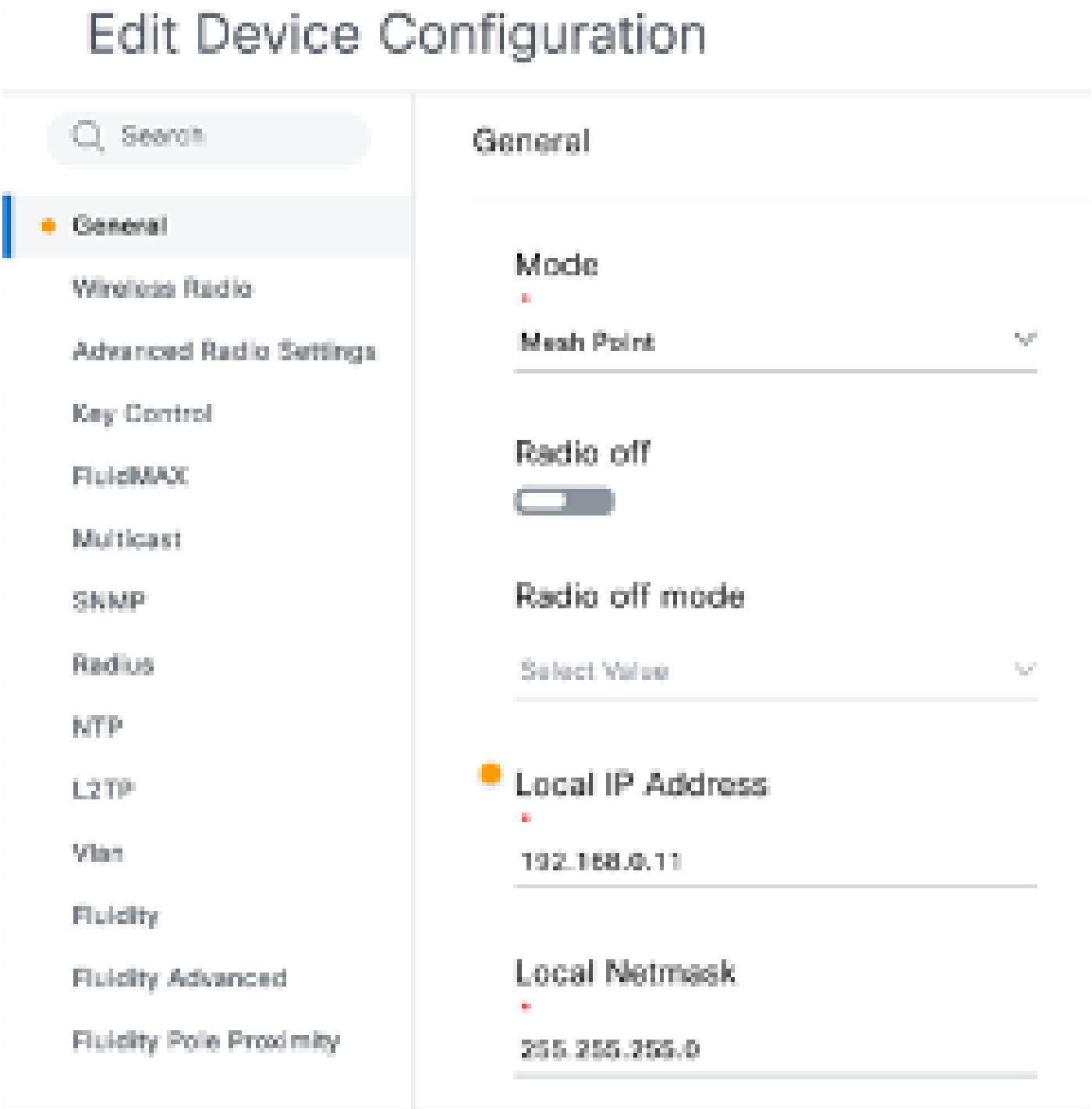

Service
Industrial Wireless
Inventory
Configuration
Inventory / Cisco Configuration
Cisco
Online
Summary
Configuration
Device Configuration
Edit
Push IoT OD Configuration
IoT OD Configuration
ID 0
Saved - 2024-05-24 10:49:38 am
Last heard configuration
ID -
Last heard - 2024-06-26 23:58:22 pm
Last heard and IoT OD Configuration do not match.
Review previous configurations
Only show differences
Search
General
Wireless Radio
Advanced Radio Settings
Key Control
FieldMAX
Multicast
SNMP
Radius
NTP
General
IOTOD
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
172.18.108.34
Local Dns 2
172.18.108.43

2. 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.

Radio A Configuration

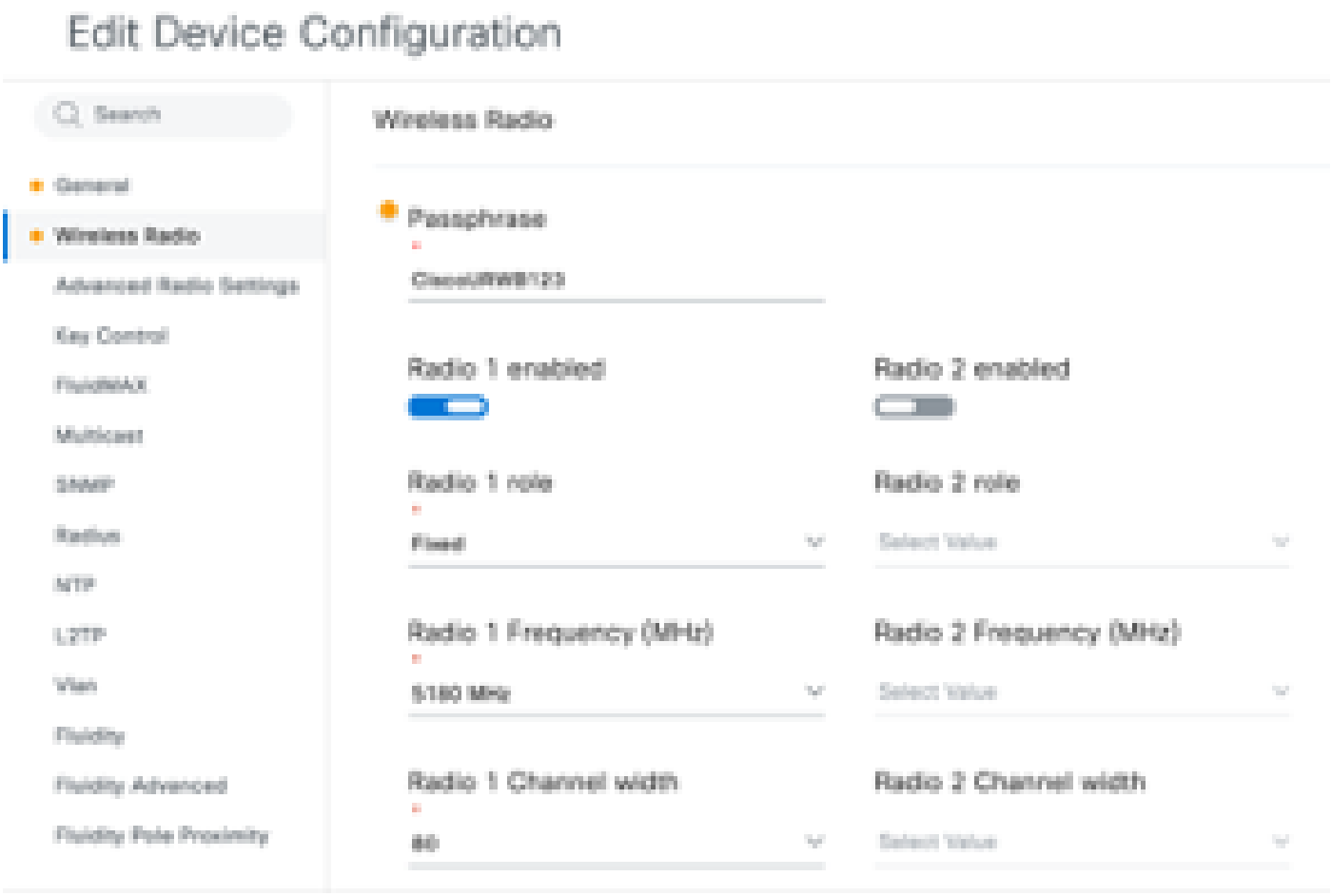


Radio B Configuration

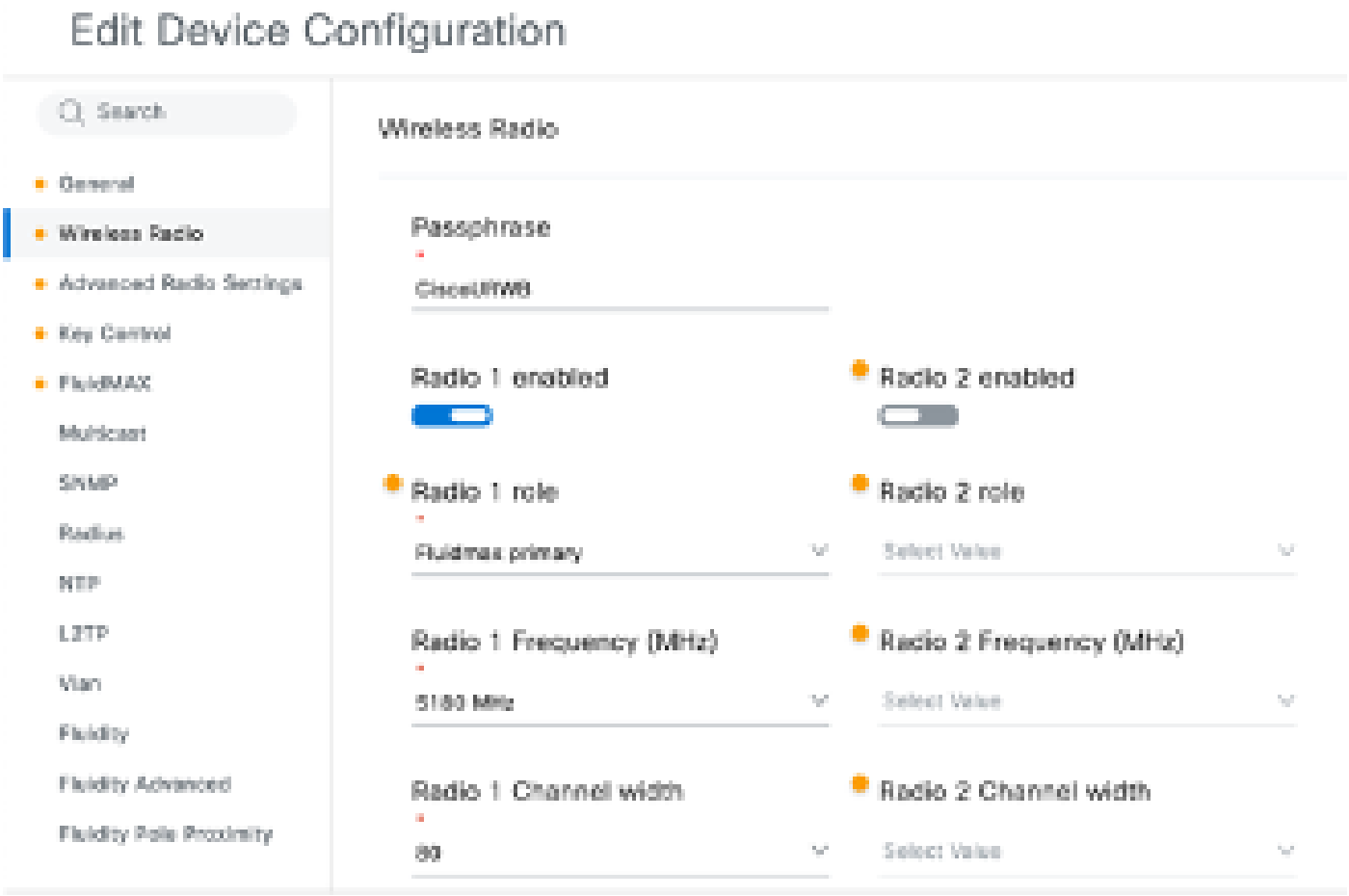


Radio C Configuration

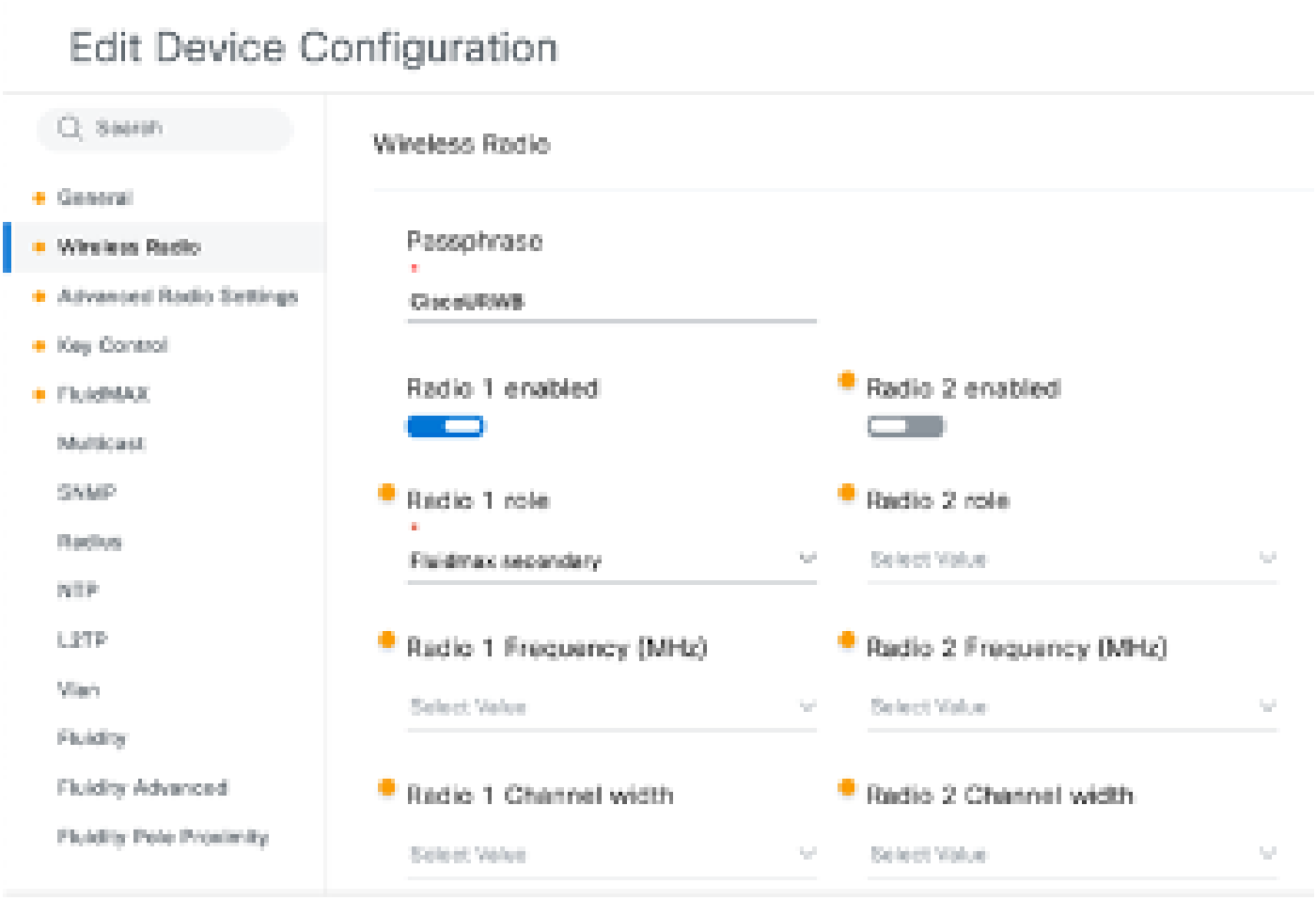
3. Under the ‘Wireless Radio’ section, all three of the radios must be configured with the same passphrase. We are only enabling one radio per IW device for this setup. Enable the radio you picked (Radio 1 or Radio 2), and make sure all the radios have the same frequency and channel width on them. When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



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.

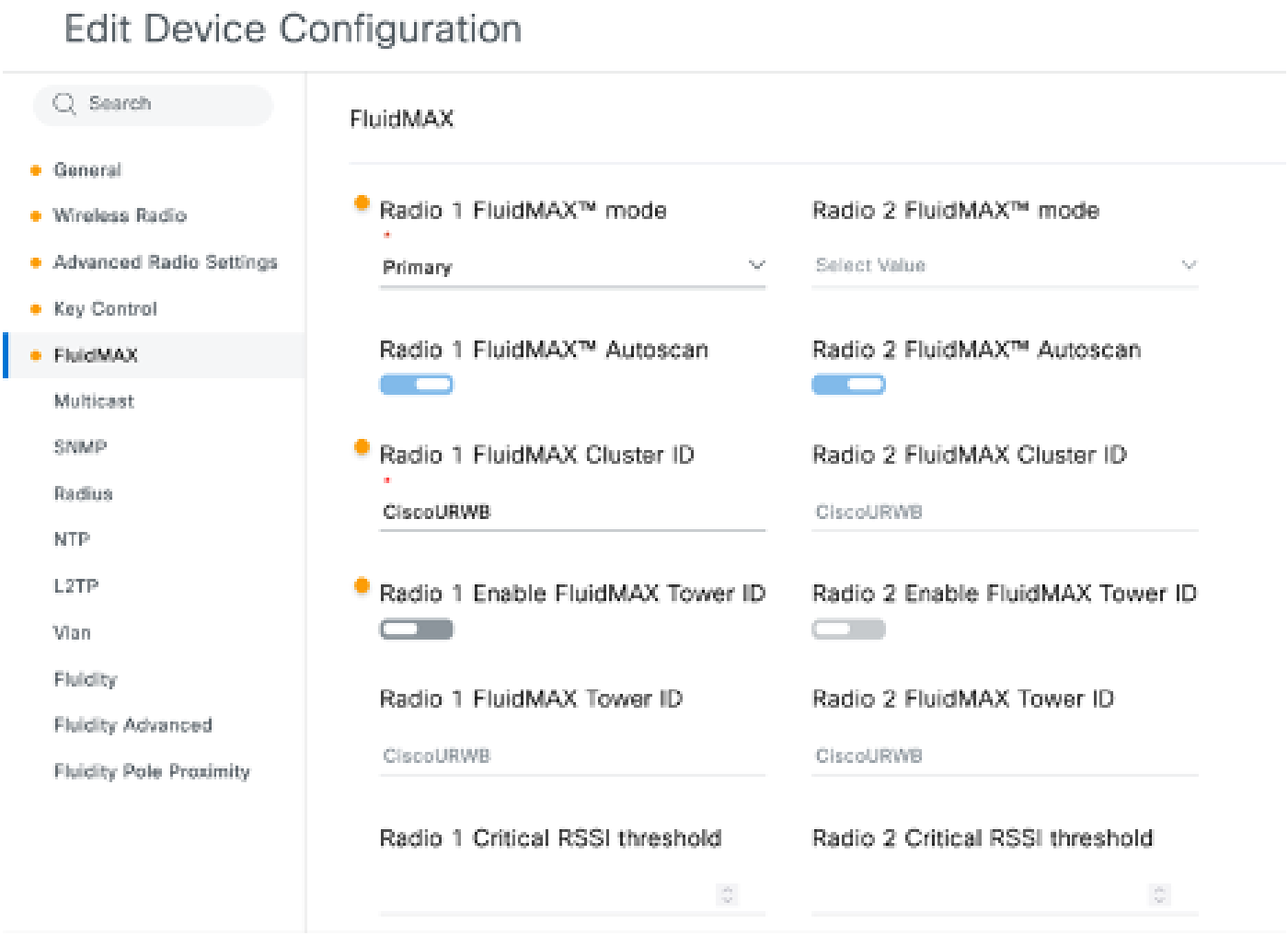


Radio A config



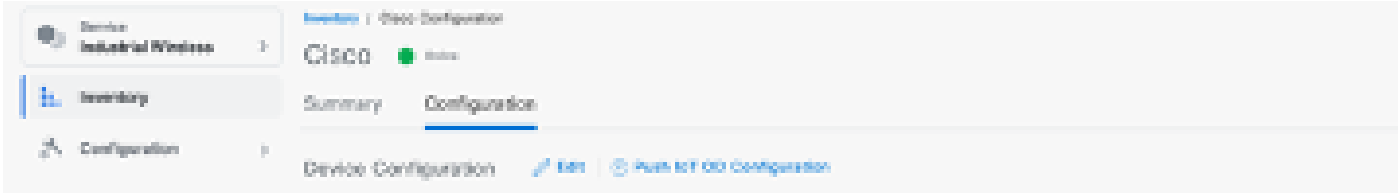
Radio B and C config

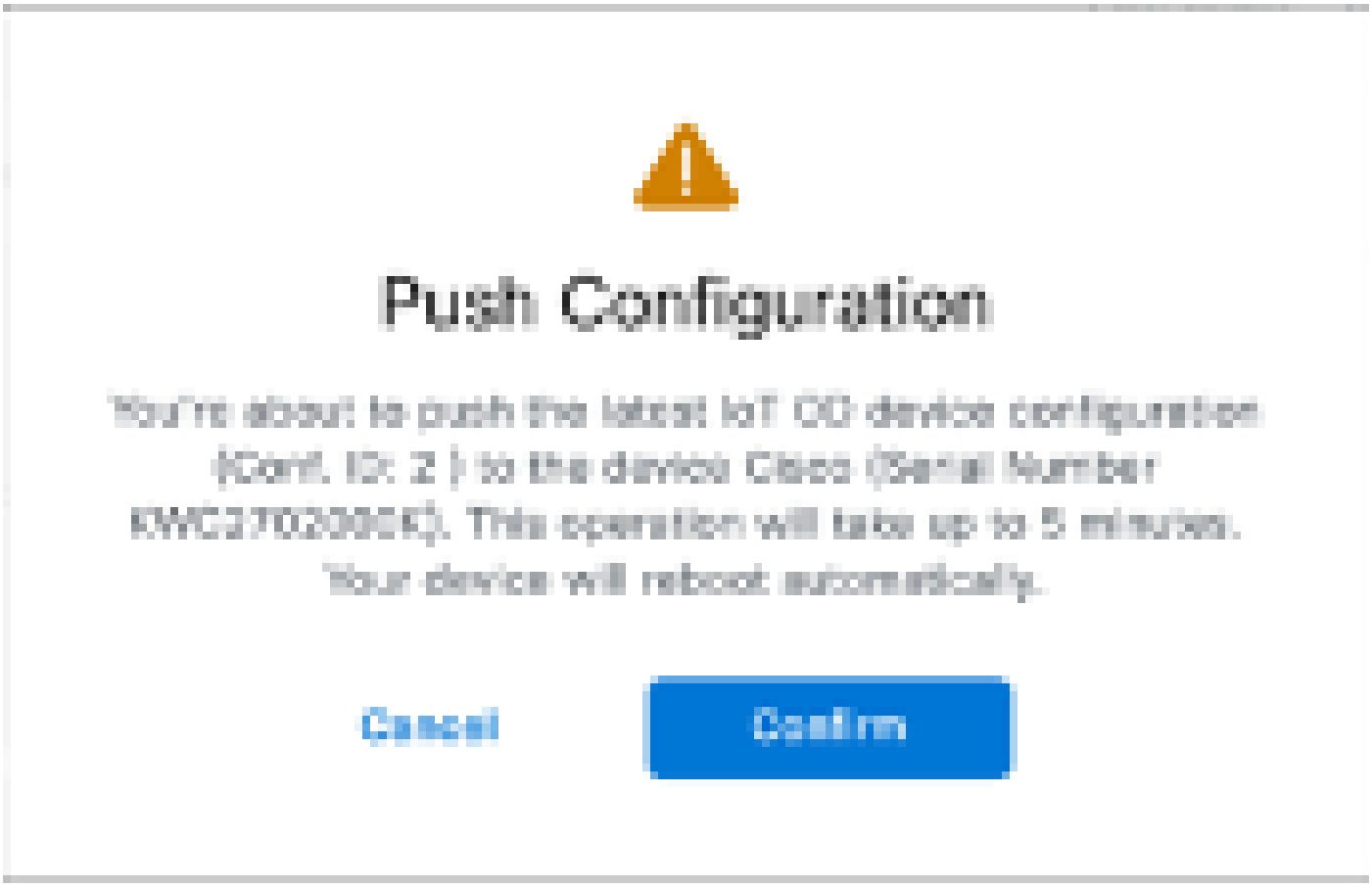
4. Fluidmax Primary/Secondary modes are used to identify individual clusters when there are multiple PTMP sections in a cascading topology. Each cluster of Fluidmax primary and its corresponding Fluidmax secondary radios are assigned a Cluster ID. This parameter is configured under the ‘Fluidmax’ section.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

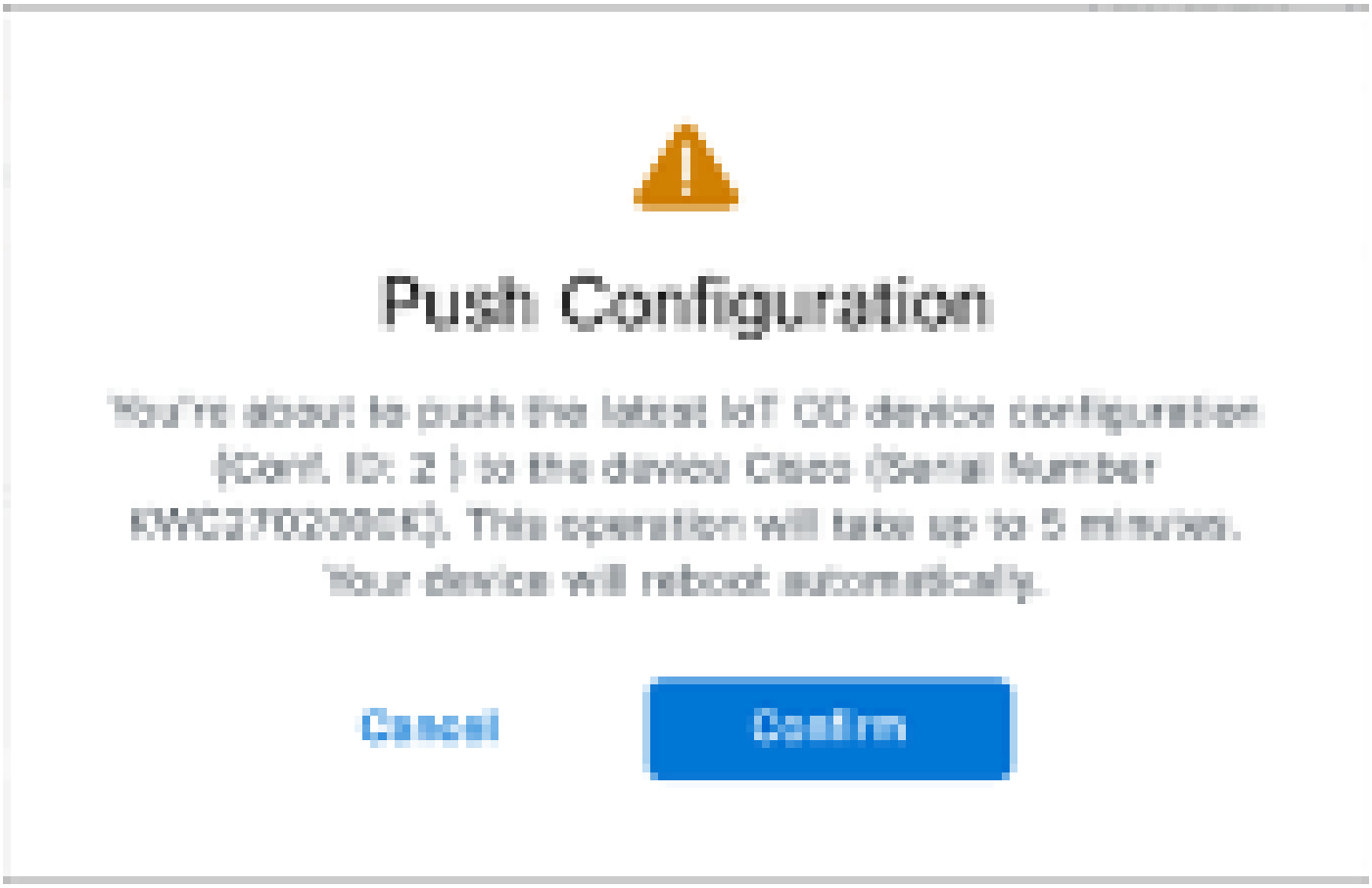


Once the configuration is edited, click ‘Save’ at the bottom.

5. 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.

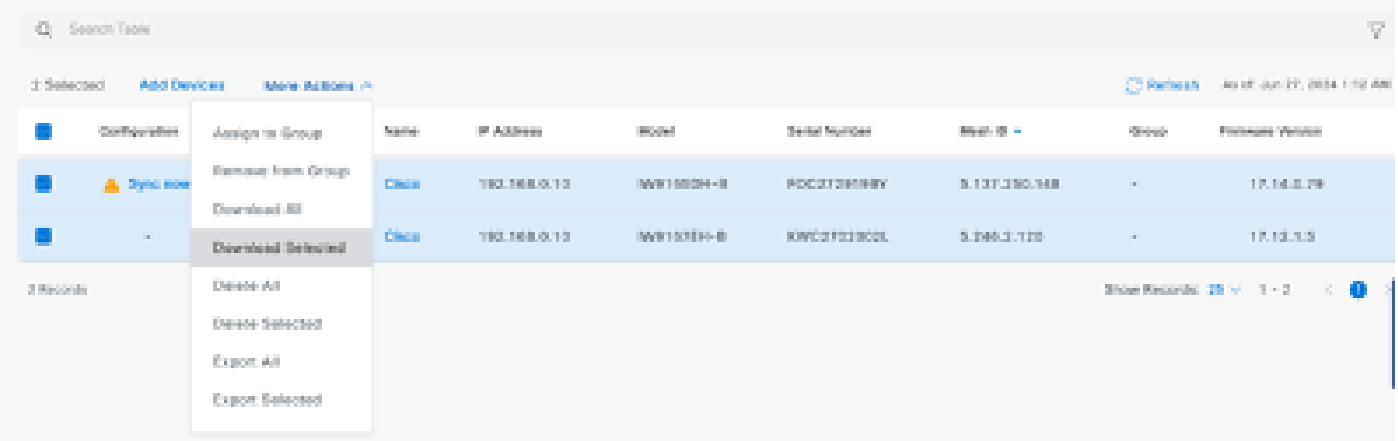




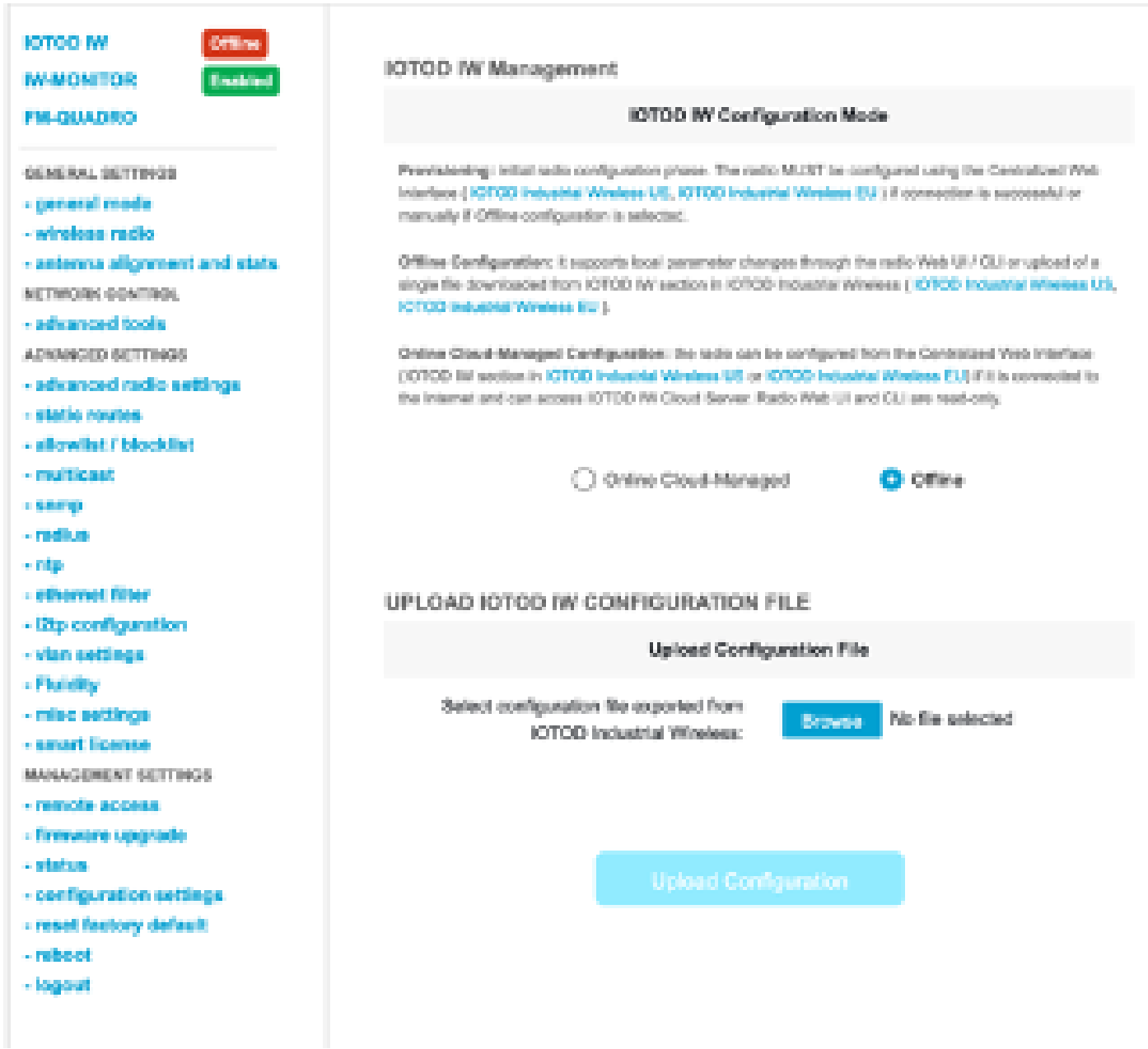


6. Another option to push config, if the radios are ‘Offline’ is to download the configuration file. From

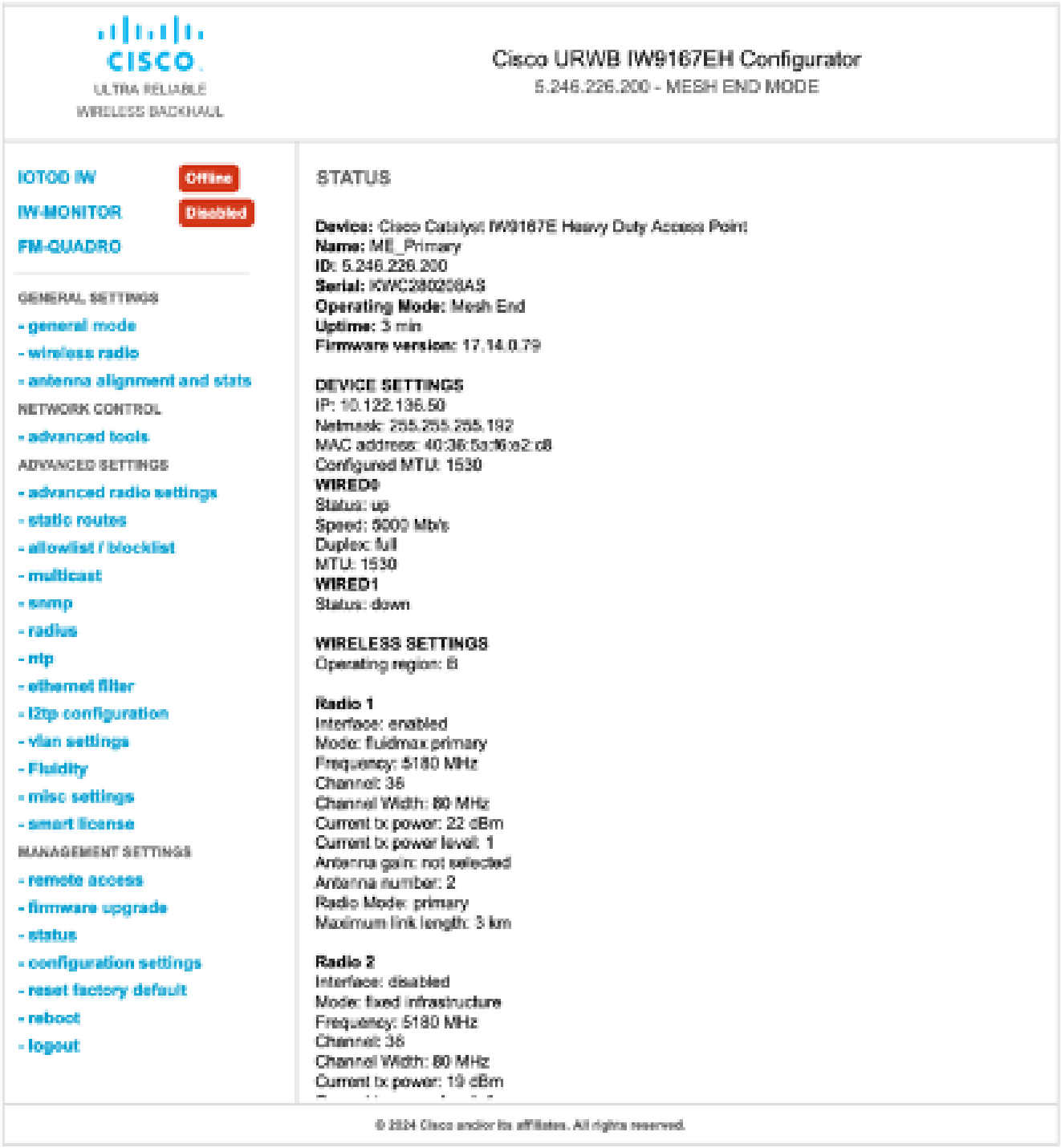
the Inventory tab, select one or multiple devices, and from the ‘More Actions’ dropdown menu, select the ‘Download Selected’ button.



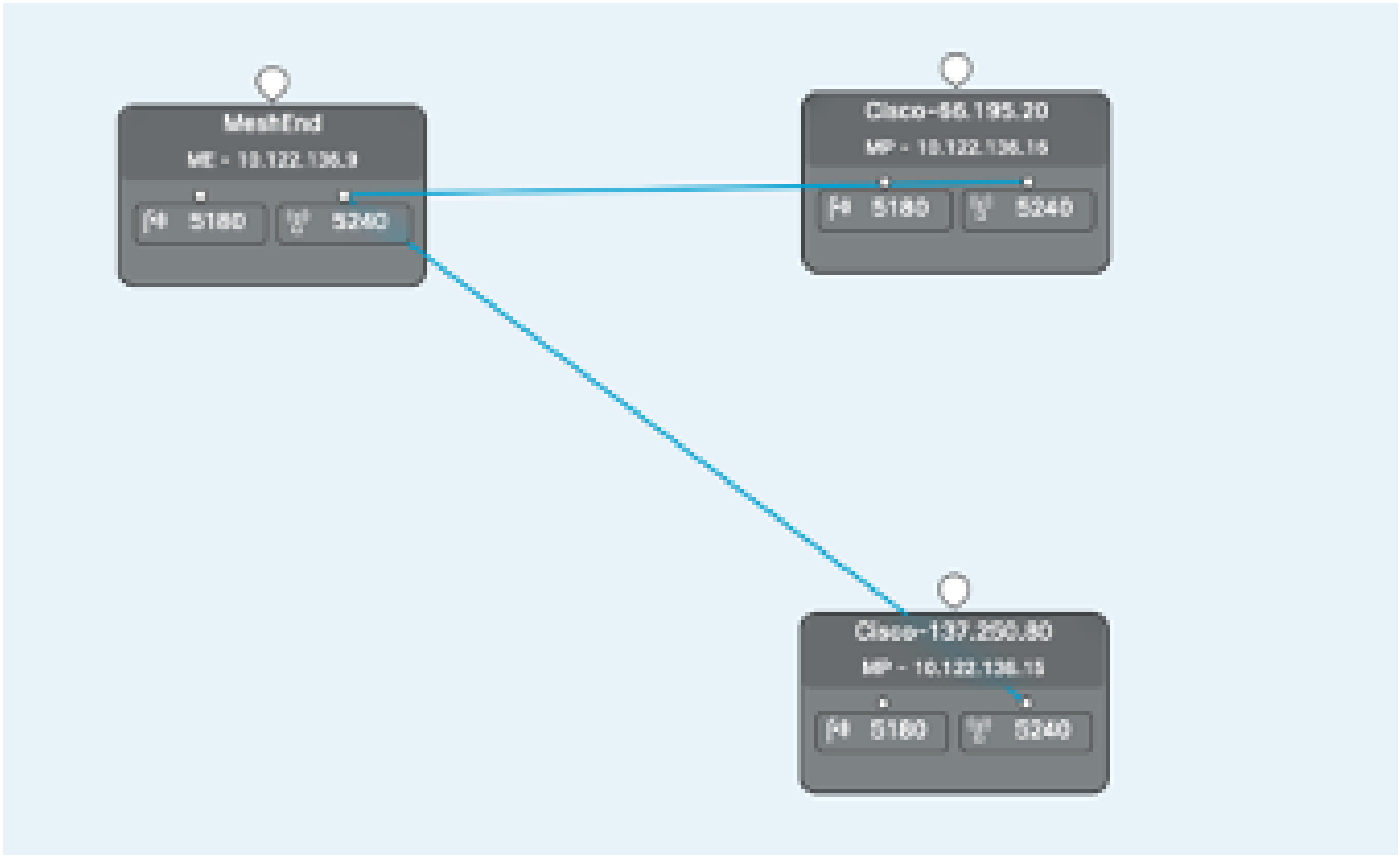
A file with extension .iwconf is downloaded. The same file can be uploaded to the GUI of the devices from the IoT-OD tab.



The configuration can be checked on the Status page.



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


MeshEnd
ME - 10.122.136.9
5180
5240
Cisco-66.195.20
MP - 10.122.136.16
5180
5240
Cisco-137.255.80
MP - 10.122.136.15
5180
5240