Configuring the Gateway Initially in Provisioning Mode

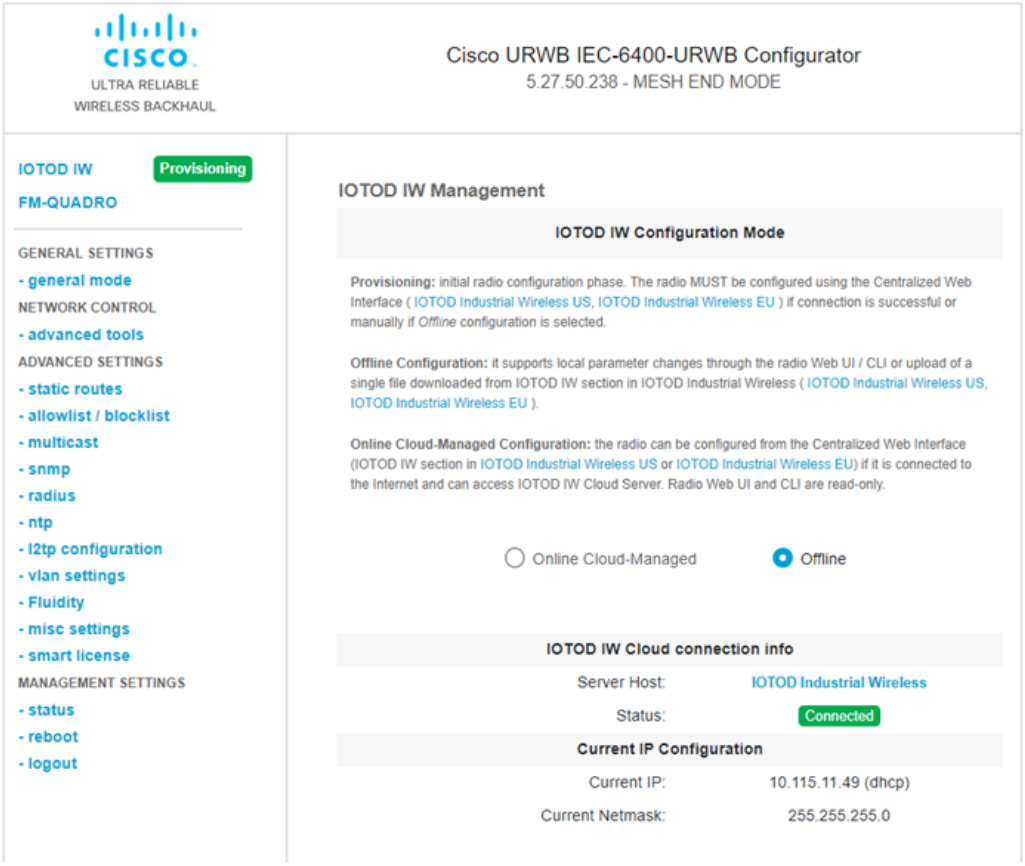
You can use IoT OD IW for online cloud configuration or alternatively you can switch to offline mode for configuring the gateway manually using the CLI or web UI.

Switching Between Offline and Online modes

To switch between offline and online mode, follow these steps:

Step 1 Log into the configurator interface, see Log into the IEC-6400-URWB Gateway Configurator for the First Time. The **URWB IEC-6400-URWB Configurator** window appears.

Configuring the Gateway Initially in Provisioning Mode



Step 2 Click **IOTOD IW**.
IOT OD IW Configuration Mode window appears.

Step 3 **IOT OD IW Configuration Mode** section has two options. Click the option you need:

- **Online Cloud-Managed** mode
- **Offline** mode

Step 4 Click **Confirm**.

- If you select **Online Cloud-Managed mode**, a 10 second countdown pop-up appears.
- If you select **Offline mode**, a five second countdown pop-up appears.

Configuring the Gateway Initially in Provisioning Mode

The IEC6400 gateway running on URWB mode supports configuration from IoT OD IW or using local management configurator interface. IoT OD is the cloud management portal, where the gateway connects to the online cloud through the network. In the offline mode, the gateway is configured using the CLI or web

UI. A gateway with no configuration settings defaults to provisioning mode, which allows the initial configuration to be sent to the gateway from IoT OD IW.

- The provisioning mode where the gateway attempts to request network configuration using the DHCP and connects to IoT OD IW.
- If there is no network connectivity, the gateway can be configured locally using either GUI, or CLI and it is accessible through console port.

The DHCP server assigns a default gateway and domain name system (DNS) server. IoT OD uses DNS geo-location to direct the gateway in the United States to the US cluster. Other locations are directed to the EU cluster. Ensure your IoT OD organization is configured to the correct cluster.

DHCP is used only in provisioning mode. A static IP address must be assigned for normal operation. If DHCP is unavailable and configuration using IoT OD IW is required, the IP address, subnet, default gateway, and DNS can be manually configured.

Note When the gateway is in provisioning mode, the gateway attempts to get an IP address from a DHCP server. If the gateway fails to receive an IP address using DHCP, the gateway reverts to a fallback IP address of 192.168.0.10/24. For easier accessibility, the gateway is also assigned an additional backup IP address as 169.254.C.D, where C and D are the last two octets of the Mesh ID.

Initial Mode	Gateway Status	Solution	Gateway Mode	Refer
Provisioning mode	Gets an IP address from DHCP	Yes (Received IP address)	Configure the gateway using IoT OD IW (Online mode)	If the gateway status is shown as Online, do the next step by Configuring the gateway using IoT OD IW
		No (Reverts to fallback IP address)	Configure the gateway using the configurator Web UI or CLI (Offline mode)	If the gateway status is shown as Offline, do the next step by Log into the IEC-6400-URWB Gateway Configurator for the First Time

Troubleshooting: Gateway Status in Provisioning Mode	Refer topic
If the gateway connects to the network in provisioning mode, but not able to connect to IoT OD IW.	Gateway Fails to Connect to IoT OD IW, on page 5
If the gateway is not able to connect to the network.	Gateway Fails to Connect to the Network, on page 6

Gateway in Provisioning Mode

The gateway is in provisioning mode if the status is shown as **Provisioning**.

Alternatively, if the status of IoT OD IW is shown as **Online** or **Offline**, you must choose between two further options:

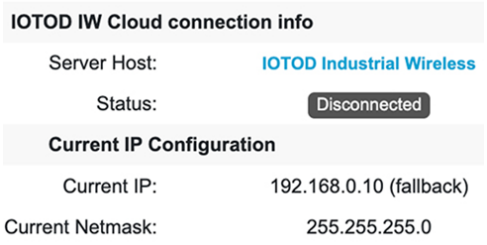
- To configure the gateway as a new gateway, revert the gateway to provisioning mode and reset the gateway, see Resetting the Gateway to Factory Default using GUI.
- To change the connection settings with the current configuration, see Configuring General Settings using GUI.

To verify if the gateway is in provisioning mode, use the following CLI command:

```
Device# iotod-iw show status
IOTOD IW mode: Provisioning
Status: Connected
```

Gateway in Disconnected Mode

If the gateway is in provisioning mode, IoT OD IW status is shown as:

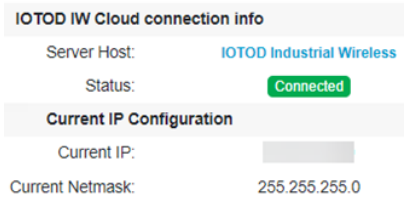


When the gateway fails to receive an IP address from the DHCP server, it reverts to the fallback IP address (192.168.0.10/24).

Note DHCP is only used in provisioning mode. A static IP address must be assigned for normal operation.

Gateway in Connected Mode

Ensure that the gateway is connected to a network that supports DHCP. If the connection to IoT OD IW is successful, the cloud connection status is shown as **Connected**.



To configure a fallback address, use the following CLI command:

Note IP, Netmask, Default Gateway, Primary DNS, and Secondary DNS configuration (**ip** command) must be allowed when provisioning mode is on.

```
Device# ip [ addr <static IP address> [ netmask <static netmask> [ gateway <IP
address of default gateway[ dns1 <IP of primary DNS server> [ dns2 <IP of
alternate DNS server> ] ] ] ] ]
```

Example:

```
Device# ip addr 192.168.10.2 netmask 255.255.255.0 gateway 192.168.10.1 dns1
192.168.10.200 dns2 192.168.10.201
```

Gateway Fails to Connect to IoT OD IW

If the gateway obtains an IP address through DHCP but cannot connect to IoT OD IW, it will retain the DHCP-assigned IP address instead of reverting to the fallback IP address. To connect the gateway to IoT OD IW, follow these steps:

Step 1 Check if the ethernet cable leading to the gateway is connected properly.

Step 2 Check if the local DNS server can fix the IP address of an IoT OD IW cloud server and verify if the IP address can be reached.

Step 3 Check if the gateway uses an outbound HTTPS connection on tcp/443 for the following domains:

- gateway.ciscoiot.com
- us.ciscoiot.com
- eu.ciscoiot.com

Step 4 During the provisioning mode, if the gateway fails to connect to IoT OD IW, the device remains in provisioning mode. You must manually configure the gateway in offline mode to change the state.

Gateway Fails to Connect to the Network

Before you begin

Verify the following for the gateway:

- It is in the correct VLAN.
- It can reach the DHCP server.
- The DHCP server has an IP address assigned to the gateway.

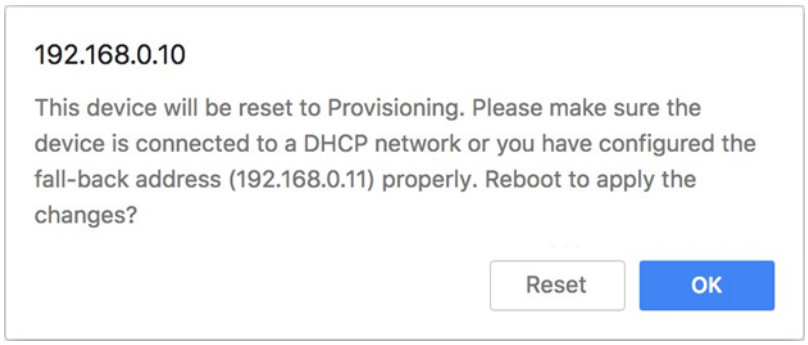
To connect to the network, follow these steps:

Step 1 If needed, enter the values for the following fields in **IOT OD IW** window:

- **Local IP**
- **Local Netmask**
- **Default Gateway**
- **Local Dns 1**
- **Local Dns 2**

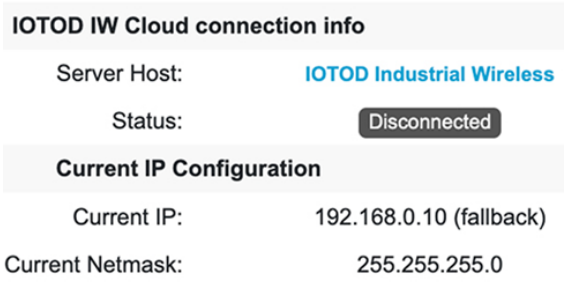
Step 2 Click **Save fallback IP**.

The web browser shows the gateway reboot window appears.



Step 3 Click **OK**, then the gateway reboots and remains in provisioning mode and the gateway tries to connect to the network using the new connection values.

Step 4 If the gateway cannot connect to the network using the **DHCP** settings, **IOT OD IW Cloud connection** info status is shown as **Disconnected**.



To verify if the gateway is in provisioning mode and it is not connected to IoT OD IW, use the following CLI command:

```
Device# iotod-iw show status
IOTOD IW mode: Provisioning
Status: Disconnected
```

The following CLI example shows that the gateway is in provisioning mode and retrieved the IP address from the DHCP server:

```
Device# ip
IP: 192.168.0.10
Network: 255.255.255.0
Device:
Nameservers:
DHCP Address (PROVISIONING Mode):
IP: 10.115.11.29
Network: 255.255.255.0
Device: 10.115.11.1
Nameservers: 8.8.8.8
Fallback Address (PROVISIONING Mode):
IP: 169.254.201.72
Network: 255.255.0.0
```

The following CLI example shows the gateway in provisioning mode but not able to retrieve the IP address from the DHCP server, so it uses the fallback IP address of 192.168.0.10:

```
Device# ip
IP: 192.168.0.10
Network: 255.255.255.0
Device:
Nameservers:
DHCP Address (PROVISIONING Mode):
IP: 192.168.0.10
Network: 255.255.255.0
Device:
Nameservers: 127.0.0.1
Fallback Address (PROVISIONING Mode):
IP: 169.254.201.72
Network: 255.255.0.0
```

Configuring General Settings using GUI

Before you begin

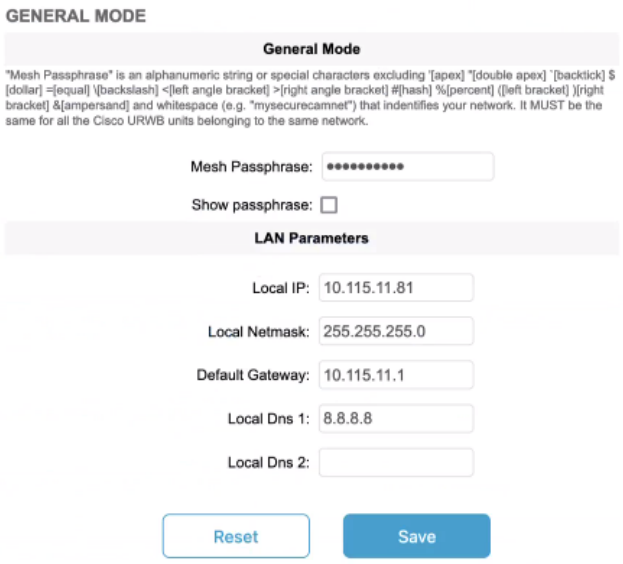
By default, when the **General Mode** window is opened for the first time, the **Local IP**, **Local netmask**, and **LAN parameters** fields are with factory-set default values.

The general mode window contains controls on how to monitor and/or change the following settings:

- Shared network passphrase
- Gateway's LAN parameters

To change the **General Mode** settings, follow these steps:

Step 1 In the **GENERAL SETTINGS**, click **general mode**.
The **GENERAL MODE** window appears.



Step 2 In the **General Mode** section, verify that the **Mesh Passphrase** field is set as desired.

Check the **Show passphrase** check box to see the **Mesh Passphrase** field.

Step 3 In the **LAN Parameters** section, enter the following details:

- Enter the local IP address in the **Local IP** field.
- Enter the local netmask address in the **Local Netmask** field.
- Enter the default gateway IP address in the **Default Gateway** field.
- Enter the local primary DNS IP address value in the **Local Dns 1** field.
- Enter the local secondary DNS IP address value in the **Local Dns 2** field.

Step 4 Click **Save**.

Configuring LAN Parameters using CLI

To configure LAN parameters, use the following CLI command:

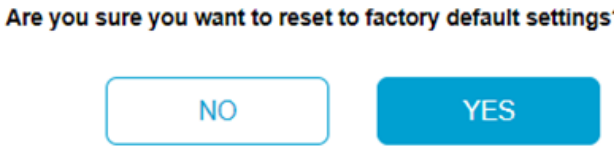
Example:

```
ip addr 192.168.10.2 netmask 255.255.255.0 gateway 192.168.10.1 dns1
192.168.10.200 dns2 192.168.10.201
```

Resetting the Gateway to Factory Default using GUI

To reset the gateway to its factory defaults, follow these steps:

Step 1 In the **MANAGEMENT SETTINGS**, click **reset factory defaults**.
The gateway reset window appears.



Step 2 Click **YES** to reset the gateway with the factory reset or click **NO**.

Note If you have previously saved the gateway configuration file, you can restore the saved configuration settings to the gateway as described in Saving and Restoring the Gateway Settings.

Note Perform a hard reset only if the gateway needs to be reconfigured using its factory configuration as an unpacked gateway. A hard reset performs the reset of the gateway's IP address, administrator password, and then it disconnects the gateway from the network. Instead, if you want to reboot the gateway, see Rebooting the Gateway using GUI.

Resetting the Gateway to Factory Default using CLI

To perform reset the configuration, use the following CLI command:

```
Device# factory reset config
Factory reset configuration and reboot? Type YES to continue.
```

Enter `YES` in the CLI command to start the device reset.

To reset the configuration and data wipe, use the following CLI command:

```
Device# factory reset default
WARNING: Secure data wipe will be performed on the next reboot. This could take a long time
```

```
 DO NOT POWER OFF THE DEVICE DURING THIS OPERATION!
Perform DATA WIPE (Configuration, logs, crashfiles) and reboot? Type YES to continue.
```

These files are cleared as part of this process:

```
1)Config, Bak config files
2) Crashfiles
3) syslogs
4) Boot variables
5) Pktlogs
6) Manually created files
Do you want to proceed? (y/n)
```

Enter `y` in the CLI command to start the device reset of the configuration and data wipe or enter `n` to abort the process.

Rebooting the Gateway using GUI

Before you begin

This procedure allows you to reboot the gateway's operating system.

Step 1 In the **MANAGEMENT SETTINGS**, click **reboot**.
The gateway reboot window appears.

Step 2 Click **Yes** to reboot.

Rebooting the Gateway using CLI

To perform a reboot, use the following CLI command:

```
Device#reboot
Proceed with reload command (cold)? [confirm]
```

Enter `confirm` in the CLI command to start the device reboot.

Saving and Restoring the Gateway Settings

The **LOAD OR RESTORE SETTINGS** window allows you to perform the following tasks:

- Save the gateway's current software configuration as a configuration (*.conf) file.
- Upload and apply a saved configuration file to the current gateway.

Note Gateway software configuration (*.conf) files are not interchangeable with IoT OD IW configuration setup (*.iwconf) files.

Tip Saved configuration files can be reused for all gateways of the same type. It simplifies the configuration task.

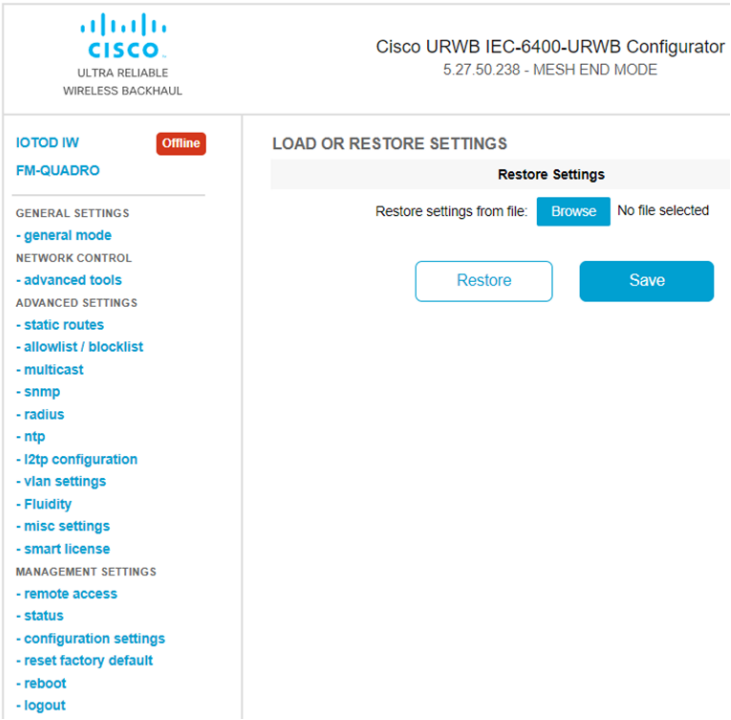
These saved configuration files act as configuration backup files to speed up redeployment if you need to replace the damaged gateway with a new gateway of the same type.

Downloading the Gateway's Current Configuration Settings

Before you begin

To download the gateway's existing configuration settings to your computer, follow these steps:

Step 1 In the **MANAGEMENT SETTINGS**, click **configuration settings**.
The **LOAD OR RESTORE SETTINGS** window appears.



Step 2 Click **Save** to download the gateway's configuration (*.conf) file.

Uploading a Saved Configuration File to the Gateway

To upload the saved configuration file on to the gateway, follow these steps:

Before you begin

Before initiating the restoration process using the configuration file, ensure you have the file stored on your computer. For downloading the file, see Downloading the Gateway's Current Configuration Settings.

Step 1 In the **MANAGEMENT SETTINGS**, click **configuration settings**.
The **LOAD OR RESTORE SETTINGS** window appears.

Step 2 Click **Browse** to upload the configuration (*.conf) file.
The selected configuration file is shown next to the **Browse** button.

Step 3 Click **Restore** to apply the configuration settings to the gateway.
Once you apply the configuration, the gateway starts rebooting.

Configuring IoT OD IW Online and Offline Mode using CLI

To configure the gateway using IoT OD IW, use the following CLI command:

```
Device# iotod-iw configure {offline | online}
```

Online – It sets up IoT OD IW to online mode. The gateway can be managed from an IoT OD IW cloud server.

Offline – It sets up IoT OD IW in offline mode. The gateway is disconnected from IoT OD IW and must be manually configured.

To configure the gateway using IoT OD IW, see Configure IW gateways in online / offline mode.