Configuring Advanced Settings

Configuring SNMP using CLI

URWB software for network management functionalities uses SNMP applications. The SNMP implementation supports queries (solicited) and traps (unsolicited). If you enable SNMP traps, specify the server address to which the monitoring information is sent.

Note The same SNMP configuration must be set for all gateways in the network.

To configure SNMP, use the following CLI commands:

Note All parameters of SNMP are required to be configured before enabling SNMP feature using CLI:

```
snmp enabled
```

Table 1: SNMP CLI Commands

Purpose	Command or Action
To enable or disable SNMP functionality	`Device# snmp [enabled | disabled]`

Purpose	Command or Action
To specify the SNMP protocol version	`Device# snmp version {v2c | v3}`
To specify the SNMP v2c community ID number (SNMP v2c)	`Device# snmp community-id <length 1-64>`
To specify the SNMP v3 username (SNMP v3)	`Device# snmp username <length 32>`
To specify the SNMP v3 user password (SNMP v3)	`Device# snmp password <length 8-64>`
To specify the SNMP v3 authentication protocol (SNMP v3)	`Device# snmp auth-method <MD5|SHA|SHA-224|SHA-256|SHA-384|SHA-512>`
To specify the SNMP v3 encryption protocol (SNMP v3)	`Device# snmp encryption {aes | none}` **Note** Possible encryption value is aes. Alternatively, enter none if the v3 encryption protocol is not needed.
To specify the SNMP v3 encryption passphrase (SNMP v3)	`Device# snmp secret <length 8-64>`
To specify the SNMP periodic trap settings	`Device# snmp periodic-trap {enabled | disabled}`
To specify the notification trap period for periodic SNMP traps	`Device# snmp trap-period <1-2147483647>` **Note** Notification value trap period measured in minutes.
To enable or disable SNMP event traps	`Device# snmp event-trap {enabled | disabled}`
To specify the SNMP NMS hostname or IP address	`Device# snmp nms-hostname {hostname |Ip Address}`
To disable SNMP configuration	`Device# snmp disabled`

Table 2: Example of SNMP configuration:

Purpose	Command or Action

To configure SNMP v2	`Device# snmp community-id <length 1-64>`
	`Device # snmp nms-hostname hostname/Ip Address`
	`Device # snmp trap-period <1-2147483647>`
	`Device # snmp periodic-trap enabled/disabled`
	`Device # snmp event-trap enabled/disabled`
	`Device # snmp version v2c`
	`Device # snmp enabled`

Purpose	Command or Action

To configure SNMP v3	`Device # snmp nms-hostname hostname/Ip Address`
	`Device # snmp trap-period <1-2147483647>`
	`Device # snmp username <length 32>`
	`Device # snmp password <length 8-64>`
	`Device # snmp auth-method`
	`<MD5|SHA|SHA-224|SHA-256|SHA-384|SHA-512>`
	`Device # snmp encryption <aes| none>`
	`Device # snmp secret <length 8-64>`
	`Device # snmp periodic-trap enabled/disabled`
	`Device # snmp event-trap enabled/disabled`

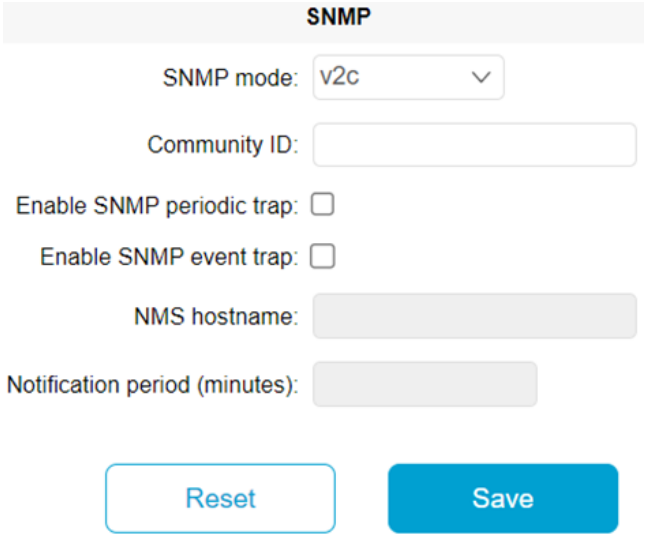
Configuring SNMP Version v2c using GUI

By default, the gateways are shipped from the factory with SNMP in disabled mode.

To change the gateway's SNMP mode to version **v2c** and configure the gateway, follow these steps:

Procedure

Step 1 Choose the version **v2c** from the **SNMP mode** drop-down list.
The **SNMP** window appears.



Step 2 Enter the community identity value in the **Community ID** field.

Important
The same community identity value must be set for all the gateways in the network.

Step 3 Check the **Enable SNMP event trap** check box to enable SNMP event traps for significant system-related events, and then enter the network management station (NMS) host name in the **NMS hostname** field.

Important

The NMS host to which traps are sent must have an SNMP agent that is configured to collect SNMP v2c traps.

Step 4 Check the **Enable SNMP periodic trap** check box to enable periodic SNMP traps to send SNMP traps at defined periodic intervals and then enter the host name of NMS in the **NMS hostname** field. Enter the notification period (minutes) in the **Notification period**.

Step 5 Click **Save**.

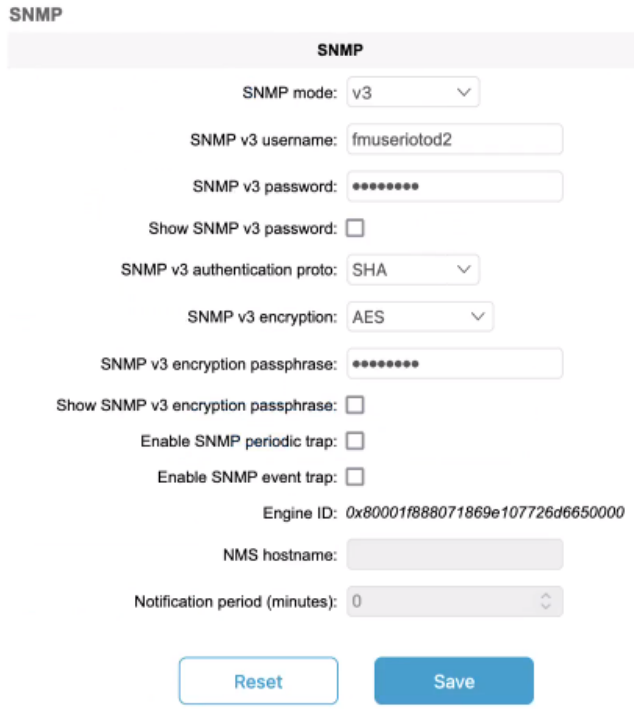
Configuring SNMP Version v3 using GUI

By default, the gateways are shipped from the factory with SNMP in disabled mode.

To change the gateway's SNMP mode to version **v3** and then configure the gateway, follow these steps:

Procedure

Step 1 Choose the version **v3** from the **SNMP mode** drop-down list.
The **SNMP** window appears.



Step 2 Enter the SNMP v3 username in the **SNMP v3 username** field.

Note
The same SNMP v3 username must be set for all the gateways in the network.

Step 3 To change the current SNMP v3 password, enter the new password in the **SNMP v3 password** field.

Check the **Show SNMP v3 password** check box to see the **SNMP v3 password** field.

Step 4 Choose the authentication type from the **SNMP v3 authentication proto** drop-down list. The available options are:

- **MD5**
- **SHA**
- **SHA-224**
- **SHA-256**
- **SHA-384**
- **SHA-512**

Important
The same SNMP authentication protocol must be set for all the gateways in the network.

Step 5 Choose the appropriate encryption protocol from the **SNMP v3 encryption** drop-down list. The available options are:

- **No Encryption**
- **AES** (Advanced Encryption Standard)

Note
The same encryption protocol must be set for all the gateways in the network.

Step 6 To change the encryption passphrase, enter a new passphrase in the **SNMP v3 encryption passphrase** field.

Step 7 Check the **Enable SNMP event trap** check box to enable the SNMP event traps for significant system-related events and then enter the host name of NMS in the **NMS hostname** field.

Note
The NMS host to which traps are sent must have an SNMP agent configured to collect v3 traps.

Step 8 Check the **Enable SNMP periodic trap** check box to enable the periodic SNMP traps to send SNMP traps at defined periodic intervals and then enter the host name of NMS in the **NMS hostname** field. Enter the notification period (minutes) in the **Notification period**.

Step 9 Click **Save**.

Configuring NTP using GUI

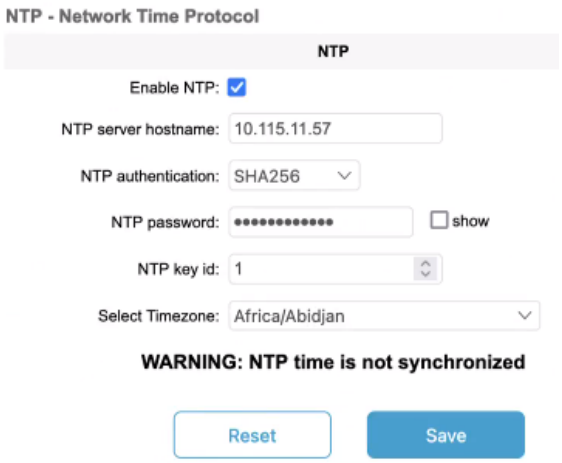
The gateway has NTP functionality that allows it to synchronize the time settings with a chosen network time server.

Important The same NTP configuration must be set for all the gateways in the network. If the same NTP settings are not applied to all gateways, the network may encounter timestamp conflicts and/or device malfunctions.

To change the NTP settings, follow these steps:

Procedure

Step 1 In the **ADVANCED SETTINGS**, click **ntp**.
The **NTP - Network Time Protocol** window appears.



Step 2 Check the **Enable NTP** check box to enable the NTP synchronization.

Step 3 Enter the host name of a chosen primary NTP server in the **NTP server hostname** field.

Step 4 Choose the authentication method from the **NTP authentication** drop-down list. Following are the available options:

- **None** (does not require an NTP password)
- **SHA1**
- **SHA256**
- **SHA512**

Step 5 Enter the password in the **NTP password** field.

Check the **show** check box to see the **NTP password** field.

Note
To configure a new password using a GUI or CLI, the password should match the following criteria:

- The password must be at least 10 characters.
- The following special characters are not allowed:
  - ' (apex)
  - " (double apex)
  - ` (backtick)
  - $ (dollar)
  - = (equal)
  - \ (backslash)

- # (number sign)
- & (ampersand)
- < > (angle brackets)
- % (percent sign)
- white spaces

Step 6 Enter the NTP key id in the **NTP key id** field.

Step 7 Choose the time zone from the **Select Timezone** drop-down list.

Step 8 Click **Save**.

Configuring NTP using CLI

To configure an NTP server address, use the following CLI command:

```
Device# ntp server <string>
```

String - IP address or domain name.

Example:

```
Device# ntp server 192.168.216.201
```

To configure an NTP authentication, use the following CLI command:

```
Device# ntp server-auth None
Device# configure ntp server-auth SHA1 <password> <keyid>
Device# configure ntp server-auth SHA256 <password> <keyid>
Device# configure ntp server-auth SHA512 <password> <keyid>
```

none - disable NTP authentication md5

sha1 - authentication method

Example:

```
Device# # ntp server-auth SHA1 test12345 65535
```

Note To configure a new password using a GUI or CLI, the password should match the following criteria:

- The password must be at least 10 characters.
- The following special characters are not allowed:
  - ' (apex)
  - " (double apex)
  - ` (backtick)
  - $ (dollar)
  - = (equal)
  - \ (backslash)
  - # (number sign)
  - & (ampersand)
  - < > (angle brackets)
  - % (percent sign)
  - white spaces

To enable or disable the NTP service, use the following CLI command:

```
Device# ntp { enabled|disabled }
```

To configure the NTP timezone, use the following CLI command:

```
Device# ntp timezone <string>
```

Example:

```
Device# ntp timezone Asia/Shanghai
```

To validate NTP configuration and status, use the following CLI commands:

```
Device# ntp
NTP: enabled
NTP: 192.168.216.201
Server auth: SHA1
Timezone: Asia/Shanghai
Current date: Thu 02 Nov 2023 07:15:02 PM CET
```

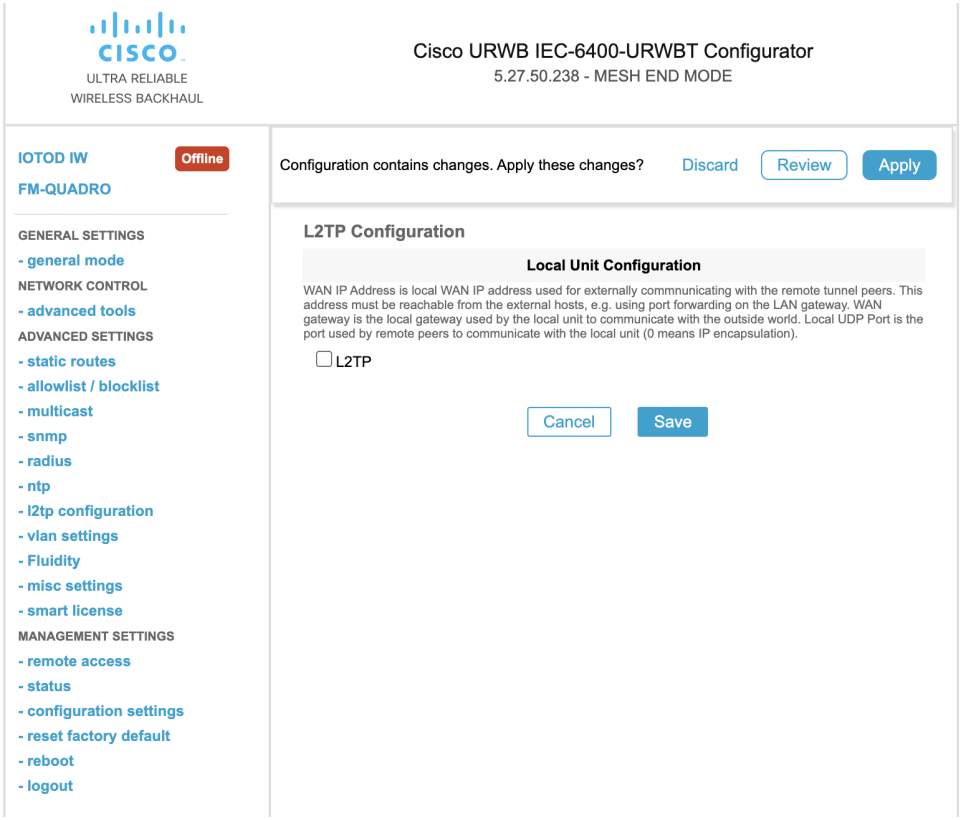
Configuring L2TP using GUI

Layer 2 Tunneling Protocol (L2TP) functionality allows the devices to support integration of URWB Fluidity technology in Layer 3 networks. To configure L2TP links, follow these steps:

Procedure

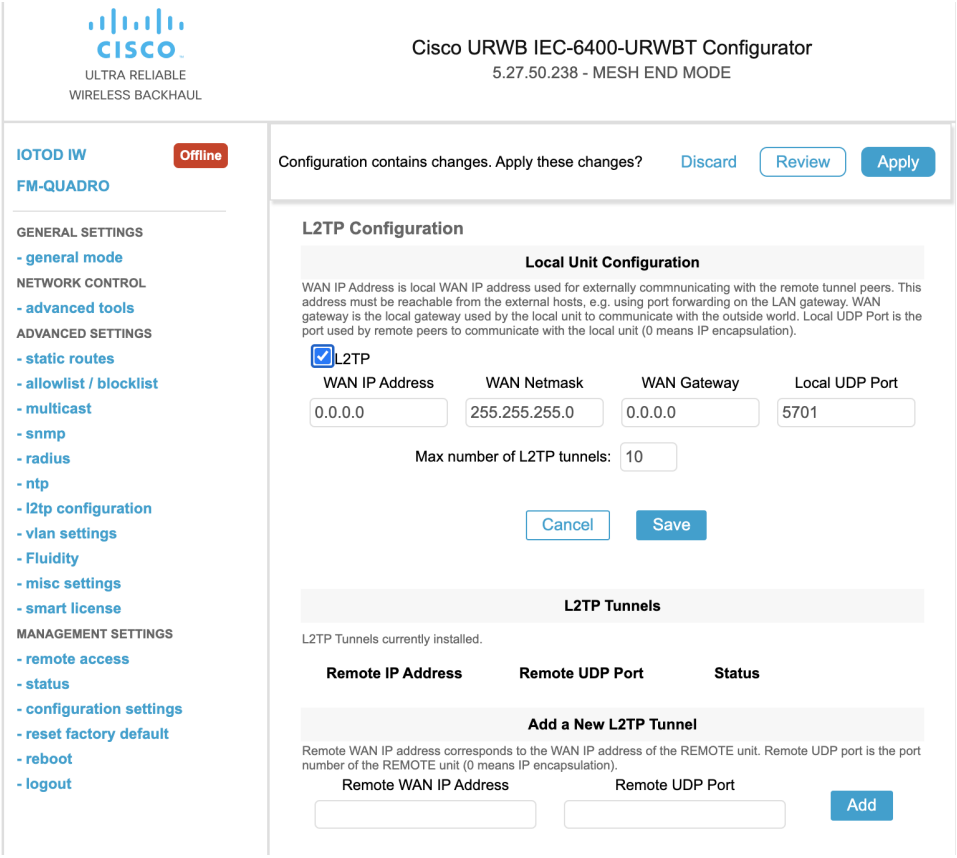
Step 1 In the **ADVANCED SETTINGS**, click **lt2p configuration**.

The **L2TP Configuration** window appears.



Step 2 Check the **L2TP** check box to enable the configuration.

The L2TP detailed configuration settings appears.



Step 3 Enter the following details:

- **WAN IP Address**
- **WAN Netmask**
- **WAN Gateway**
- **Local UDP Port**
- **Max number of L2TP tunnels**

Step 4 Click **Save**.

Step 5 To add a L2TP tunnel to remote host:

a) Enter the **Remote WAN IP Address** and **Remote UDP Port** details.

b) Click **Add**.

Configuring L2TP using CLI

To enable or disable the L2TP configuration, use the following CLI command:

```
Device# l2tp status <enable or disable>
```

Example:

```
l2tp status enable
```

To set the interface port for the L2TP communication with the gateway, use the following CLI command:

```
Device# l2tp interface <1 or 2>
```

Port 1 = ethernet LAN ports bridge

Port 2 = SFP+ ports bridge

Example:

```
Device# l2tp interface 1
```

To configure L2TP WAN parameters, use the following CLI command:

```
Device# l2tp wan <WAN IP address> <WAN netmask> <WAN gateway address>
```

Example:

```
Device# l2tp wan 192.168.0.20 255.255.255.0 192.168.0.1
```

To configure L2TP WAN interface port, use the following CLI command:

```
Device# l2tp port <UDP port>
```

Example:

```
Device# l2tp port 5701
```

Note The unsigned integer range of UDP port of remote peer is [1-65535].

To add a L2TP tunnel to remote host, use the following CLI command:

```
Device# l2tp add <IP address of remote peer> <UDP port number of remote peer>
```

Example:

```
Device# l2tp add 192.168.20.20 5701
```

Note The unsigned integer range of UDP port of remote peer is [1-65535].

To print the current list of L2TP tunnels, use the following CLI command:

```
Device# l2tp
```

To delete the L2TP tunnel, use the following CLI command:

```
Device# l2tp del <tunnel-ID>
```

tunnel-ID – It is shown in the list of L2TP tunnels. Use command `l2tp` to print the list.

Configuring VLAN Settings

Default VLAN configuration factory-set parameters for the gateway are:

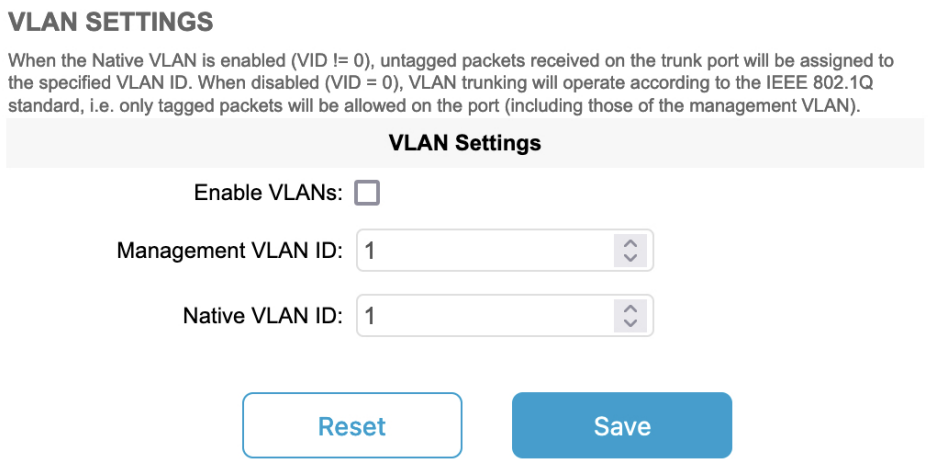
Parameter	Default value
Management VLAN ID (MVID)	1
Native VLAN ID (NVID)	1

To connect the gateway to a VLAN that is part of the local wireless network, follow these steps:

Procedure

Step 1 In the **ADVANCED SETTINGS**, click **vlan settings**.

The **VLAN SETTINGS** window appears.



Step 2 Check the **Enable VLANs** check box to connect the gateway to a VLAN that is part of the local wireless network.

Step 3 Enter the management identification number of the VLAN in the **Management VLAN ID** field. For detailed info about vlan settings and packet management, see Rules for Packet Management.

Note
The same Management VLAN ID must be used on all the gateways that are part of the same mesh network.

Step 4 Enter the native identification number of the VLAN in the **Native VLAN ID** field.

Step 5 Click **Save**.

Rules for Packet Management

Parameter	Default value
Native VLAN processing	Enabled
Port mode (all Ethernet ports)	Smart

Traffic Management

The incoming data packets are classified based on the following parameter values:

Parameter	Default value
Signaling	Ethernet protocol type
User	All other traffic
Packet tagged with MVID	Packet allowed

Access port rules for incoming packets	
Untagged packet from the gateway	Packet allowed
Untagged packet with VLAN ID (VID) is not configured	Packet allowed
Untagged packet with VID is configured	Packet tagged with specified VID
Tagged packet with valid VID	Packet dropped
Tagged packet with null (0) VID	Packet dropped

Access port rules for outgoing packets	
Tagged packet with configured and allowed VID	Packet allowed
Packet from the gateway	Packet allowed
Tagged packet with VID is not configured	Packet allowed

Parameter	Default value
Tagged packet with valid VID, but not allowed	Packet dropped
Tagged packet with null (0) VID	Packet dropped

Access port rules management for incoming packets with a gateway in smart mode	
Untagged packet	If native VLAN is ON, then the packet is allowed (tagged with NVID) If native VLAN is OFF, then the packet is dropped
Tagged packet (any VID without any check)	Packet allowed with original tag

Access port rules management for outgoing packets with a gateway in smart mode	
Packets from the gateways (for example: IoT OD IW interface)	Packet tagged with MVID
Signaling traffic	Packet tagged with MVID

Access port rules management for outgoing packets with a gateway in smart mode	
Tagged with valid VID (1–4095), but not with NVID	Packet allowed (tagged)
Tagged with null VID (0) or NVID	Packet allowed (untagged)

Note The packets transmitted through the Cisco VIC SFP+ interface is always tagged with a VLAN header. The outgoing packets from the interface are classified as untagged with an IEEE 802.1p header and VLAN ID tag of 0.

Configuring Fluidity Settings using GUI

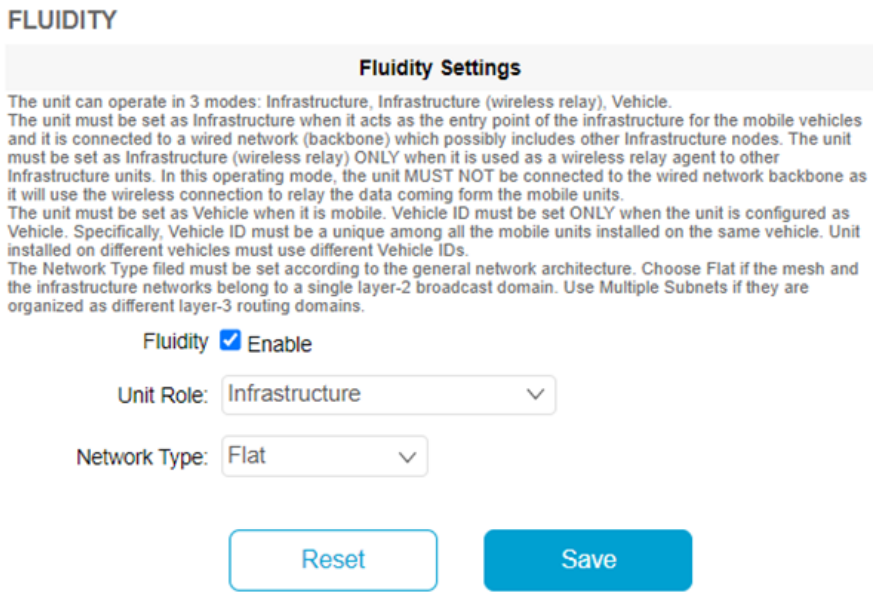
To change the fluidity settings, follow these steps:

Before you begin

By default, the gateways are shipped from the factory with Fluidity functionality in disabled mode.

Procedure

Step 1 In the **ADVANCED SETTINGS**, click **Fluidity**.
The **FLUIDITY** window appears.



Step 2 Check the **Fluidity** check box to enable the fluidity functionality.

Note
The **Unit Role** drop-down is set to **Infrastructure** mode, and it cannot be changed.

Step 3 Choose the network type designation for the gateway from the **Network Type** drop-down list and it must be set in accordance with the general network architecture. Following are the available options from the network type:

- **Flat**: Choose this option, if both the mesh network and the infrastructure network belong to a single layer 2 broadcast domain.
- **Multiple Subnets**: Choose this option, if the mesh network and the infrastructure network are organized as separate layer 3 routing domains.

Step 4 Click **Save**.

Configuring Fluidity Settings using CLI

To enable fluidity, at least one radio interface should be in fluidity mode:

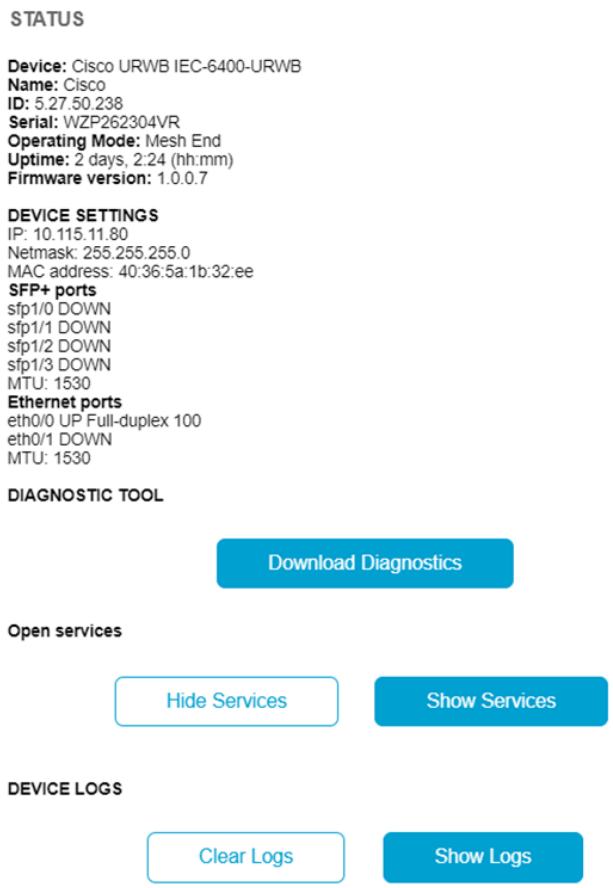
```
Device# fluidity status enabled
```

Configuring Gateway Status

The gateway status window shows information on basic settings (including the gateway's MAC address) and allows you to download diagnostic data files and view event logs.

In the **MANAGEMENT SETTINGS**, click **status**.

- The **STATUS** window appears.



The following details are shown in the **STATUS** section:

- Device details
- Device settings
- Ethernet ports

Following are the sections available in other part of the **STATUS** section:

- **DIAGNOSTIC TOOL**: To download diagnostics of the device.
- **Open services**: To show or hide services.
- **DEVICE LOGS**: To show or clear logs.