Configuring Layer 2 Mesh Transparency

Configuring Layer 2 Mesh Transparency

Layer 2 mesh transparency feature allows you to select the ether type for a specific protocol. To forward the ether-types, use CLI or GUI to enable or disable the network. The following list of reserved ether-types cannot be configured:

Table 1: List of reserved ether-types

Ether-type (range)	Forwardable	Additional information
0x0000 – 0x05FF	User-configurable	Ethernet-I frames. STP and CDP are subject to other configuration options
0x0800	Yes	IPv4
0x0806	Yes	ARP (IPv4)
0x0900 – 0x09FF	No	URWB signaling protocols
0x8100	Yes	IEEE 802.1Q VLAN encapsulation
0x8847 – 0x8848	No	MPLS
0xFFFF	No	IANA reserved

The following functionalities are supported using the URWB data plane mesh network when used in MPLS Layer 2 mode.

- The Layer 2 mesh transparency feature forwards non-IPv4 Layer 2 protocols across the URWB network by selectively filtering which ether-types are permitted.
- Ether-types present in URWB network are detected and reported automatically.
- Ability to add and remove ether-types from the allowlist.

- Ability to configure full transparency (enable all Layer 2 protocols) in a convenient manner.
- Both CLI and GUI are supported.

Configuring and Verifying Layer-2 Protocols Forwarding Using CLI

To configure a Layer 2 protocol forwarding, use the following CLI command:

To add an ethernet type to allowlist, use the following CLI command:

```
Device# configure mpls ether-filter allow-list add

<0x0-0xffff> ether-type value
         all allow all ether-types
```

Example:

```
Device# configure mpls ether-filter allow-list add 0x86DD

Device# show mpls config
        ...
        Ethernet Filter allow-list: 0x8892 0x8204 0x86dd, ethernet-I block
        ...
```

To delete an ethernet type from allowlist, use the following CLI command:

```
Device# configure mpls ether-filter allow-list delete
         <0x0-0xffff> ether-type value
```

Example:

```
Device# configure mpls ether-filter allow-list delete 0x86DD

Device# show mpls config
        ...
        Ethernet Filter allow-list: 0x8892 0x8204, ethernet-I block
        ...
```

To clear all ethernet types from allowlist, use the following CLI command:

```
Device# configure mpls ether-filter allow-list clear
```

Example:

```
Device# show mpls config
                ...
                Ethernet Filter allow-list: 0x8892 0x8204 0x86dd, ethernet-I block
                ...
        Device# configure mpls ether-filter allow-list clear
        Device# write
        Device# reload

        Device# show mpls config
        ...
        Ethernet Filter allow-list: none, ethernet-I block
        ...
```

To add all ethernet types to allowlist, use the following CLI command:

```
Device# configure mpls ether-filter allow-list add all
```

Example:

```
Device# configure mpls ether-filter allow-list add all

        Device# show mpls config
        ...
        Ethernet Filter allow-list: all, ethernet-I block
```

Note The **all** keyword is used to set the ether filter in all-pass mode (fill allowlist with single entry 0x0000).

To clear list of detected ether-types, use the following CLI command:

```
Device# configure mpls ether-filter table clear
```

Example:

```
Device# show mpls ether-filter
                Ether-type Direction Description
                0x8899      INGRESS    ---
                0x86DD      INGRESS    IPv6
        Device# configure mpls ether-filter table clear
                Cisco-81.160.136#show mpls ether-filter
                Ether-type Direction Description
                0x8899      INGRESS    ---
```

Note The detection process works in background after clearing the detected ethernet types.

To configure Ethernet – I protocol, use the following CLI command:

```
Device# configure mpls ether-filter ethernet-I forward
```

Example:

```
Device# configure mpls ether-filter ethernet-I forward

Deive# show mpls config
        ...
        Ethernet Filter allow-list: 0x88F8 0x891D, ethernet-I forward
        ...


Device# configure mpls ether-filter ethernet-I block
```

Example:

```
Device# configure mpls ether-filter ethernet-I block

         Device# show mpls config
         ...
         Ethernet Filter allow-list: 0x88F8 0x891D, ethernet-I block
```

To verify list of allowed ether-types, use the following show command:

```
Device# show mpls config
```

Example:

```
Device# show mpls config
                ...
                Ethernet Filter allow-list: 0x8892 0x8204 0x86dd, ethernet-I block
                ...
```

To verify list of detected ether-types, use the following show command:

```
Device# show mpls ether-filter table
```

Example:

```
Device# show mpls ether-filter table
                Ether-type   Direction   Description
                0x8899        INGRESS       ---
                0x86DD        INGRESS       IPv6
```

Configuring Layer-2 Protocol Forwarding using GUI

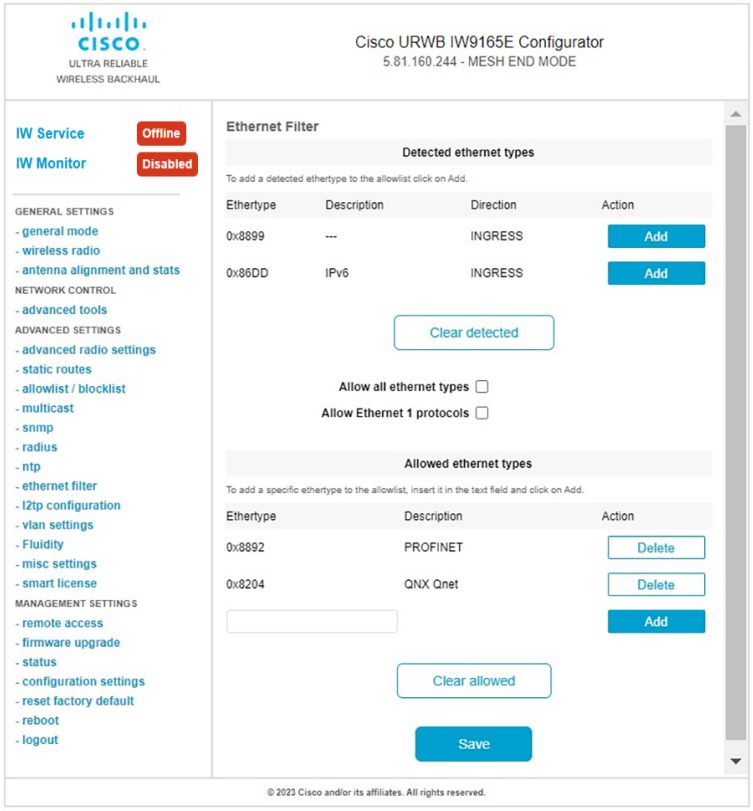
To add specific and detected ether types to the allowlist, follow these steps:

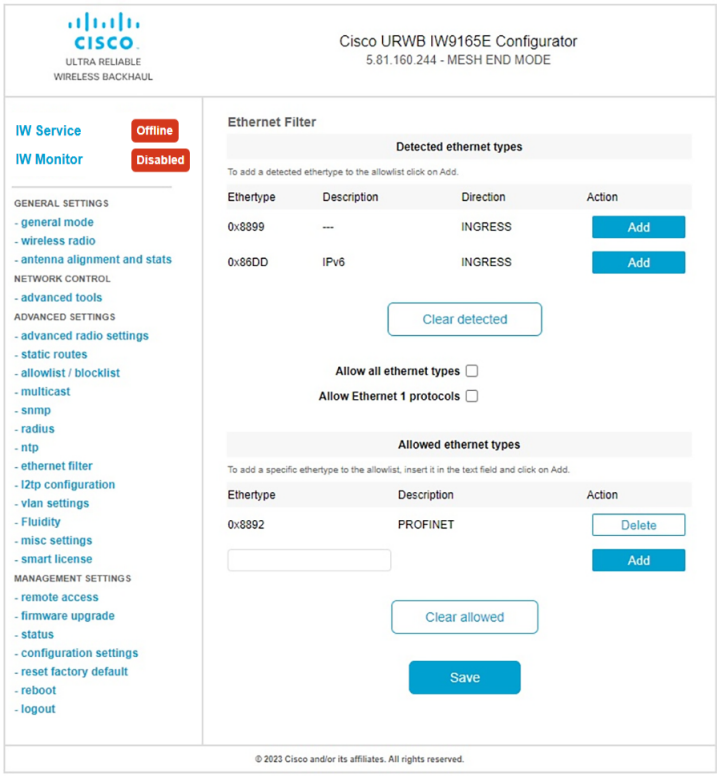
1. In the **ADVANCED SETTINGS**, click **ethernet filter**.

   The **Ethernet Filter** window appears.

2. Click **Add** to add an ether types to the allowlist in the **Detected ethernet types** section.
3. Once it is added, you can see the added ether types reflected in the **Allowed Ethernet type** section.
4. In the **Allowed ethernet types** section, to add a specific ether type to the allowlist, enter the **Ethertype** name in the text box and click **Add**.

The following images show the specific and detected ether types added to the allowlist:





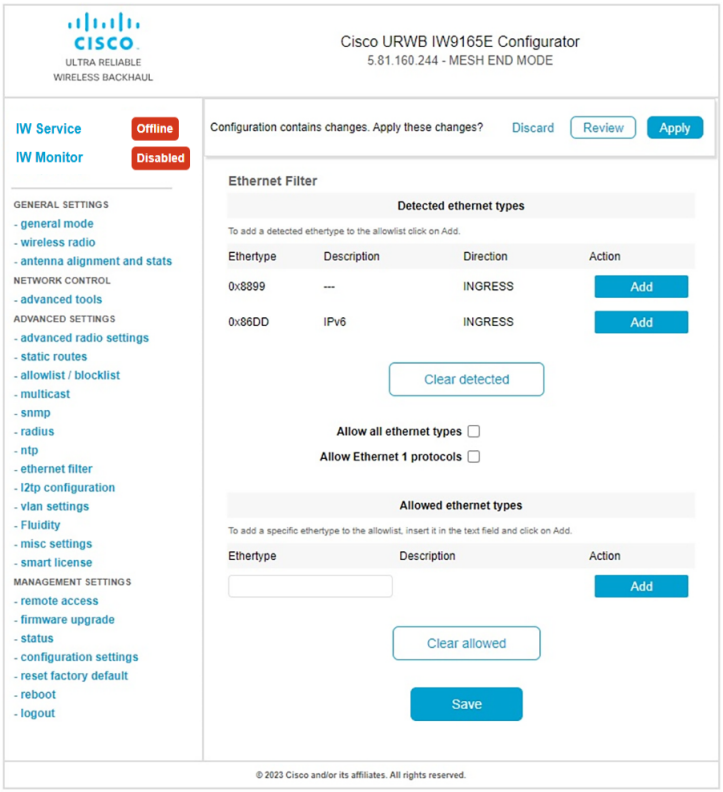
To clear all allowed ethernet types from the allowlist, follow these steps:

1. In the **ADVANCED SETTINGS**, click **ethernet filter**.

   The **Ethernet Filter** window appears.

2. Click **Clear allowed** in the **Allowed ethernet types** section to clear all the ethernet types from the allowlist.
3. Once you click **Clear allowed**, you can see all ethernet types cleared from allowlist.

The following image shows all allowed ethernet types cleared from the allowlist:



To clear all detected ethernet types from the allowlist, follow these steps:

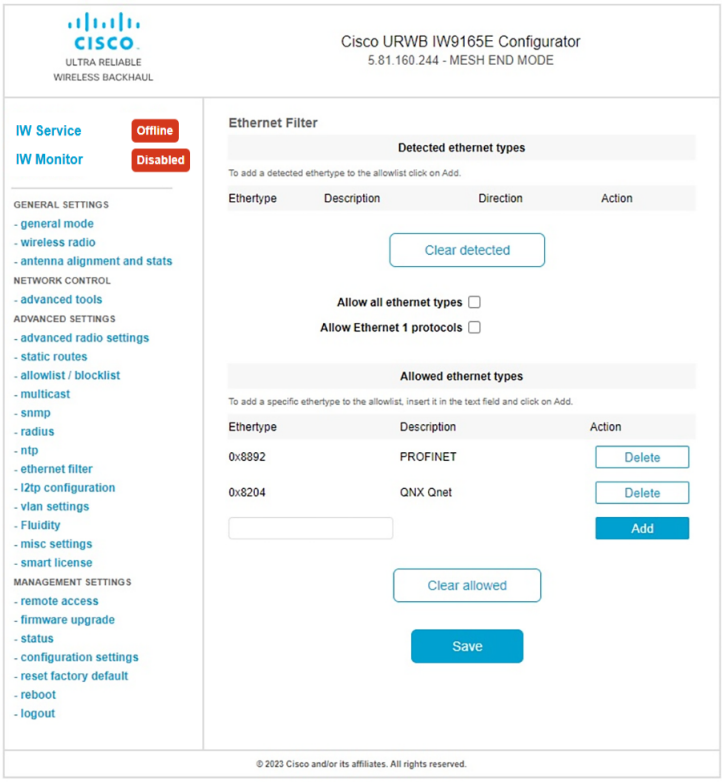
1. In the **ADVANCED SETTINGS**, click **ethernet filter**.

   The **Ethernet Filter** window appears.

2. Click **Clear detected** in the **Detected ethernet types** section to clear the detected ethernet types from allowlist.

3. Once you click **Clear detected**, you can see ethernet types cleared in the **Detected ethernet types** section.

The following image shows all detected ethernet types cleared from the allowlist:



To add or allow all ethernet types to the allowlist, follow these steps:

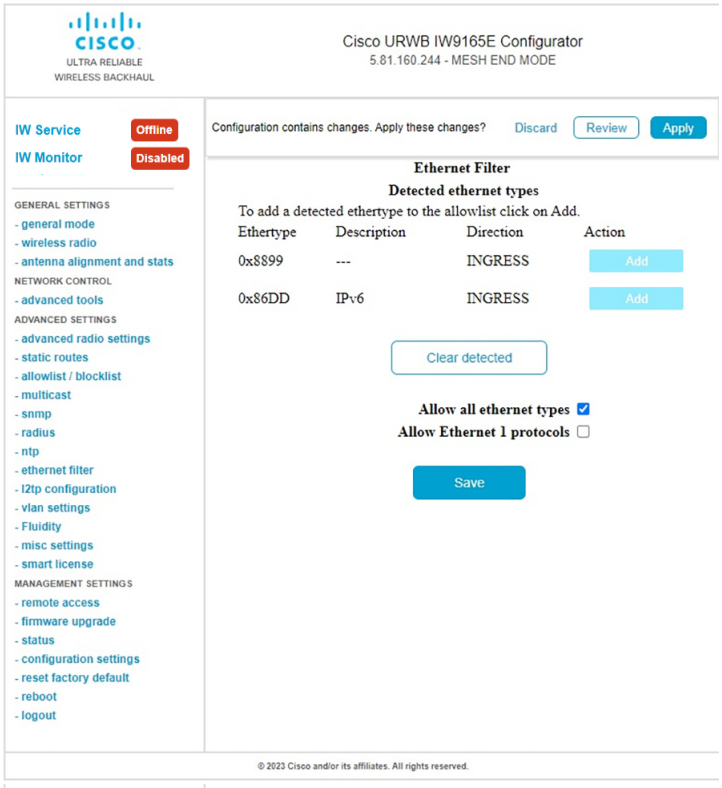
1. In the **ADVANCED SETTINGS**, click **ethernet filter**.

   The **Ethernet Filter** window appears.

2. Check the **Allow all ethernet types** check box in the **Ethernet Filter** section to allow all ethernet type to allowlist.

3. Click **Save** and then **Apply** to change the configuration.

The following image shows adding of all ethernet types to the allowlist:



To configure an ethernet 1 protocol, follow these steps:

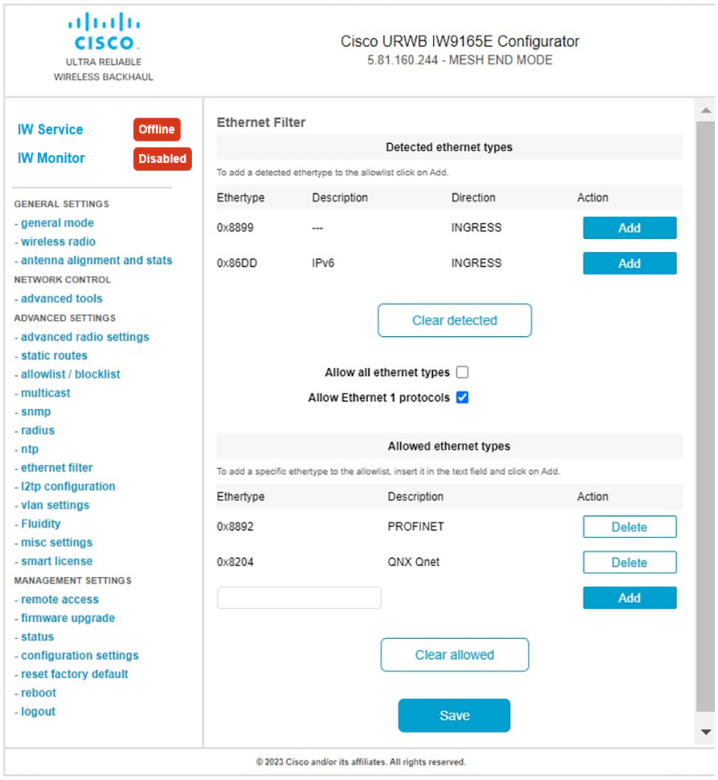
1. In the **ADVANCED SETTINGS**, click **ethernet filter**.

   The **Ethernet Filter** window appears.

2. Check the **Allow Ethernet 1 protocols** check box in the **Ethernet Filter** section to enable ethernet 1 protocol mode.

3. Click **Save** and then **Apply** to change the configuration.

The following image shows the configuration of allowing an ethernet 1 protocol:


ULTRA RELIABLE
WIRELESS BACKHAUL
Cisco URWB IW9165E Configurator
5.81.160.244 - MESH END MODE
IW Service
Offline
IW Monitor
Disabled
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
Ethernet Filter
Detected ethernet types
To add a detected ethertype to the allowlist click on Add.
Ethertype
Description
Direction
Action
0x8899

INGRESS
Add
0x86DD
IPv6
INGRESS
Add
Clear detected
Allow all ethernet types
Allow Ethernet 1 protocols
Allowed ethernet types
To add a specific ethertype to the allowlist, insert it in the text field and click on Add.
Ethertype
Description
Action
0x8892
PROFINET
Delete
0x8204
QNX Qnet
Delete
Add
Clear allowed
Save
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