



Configuring Layer 2 Mesh Transparency

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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# write
Device# reload

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# write
Device# reload

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# write
Device# reload

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
Device# write
Device# reload

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#write
Device# reboot

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:

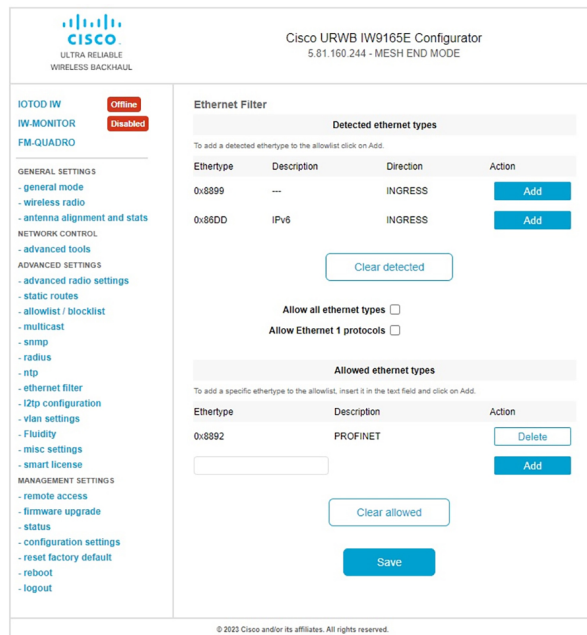
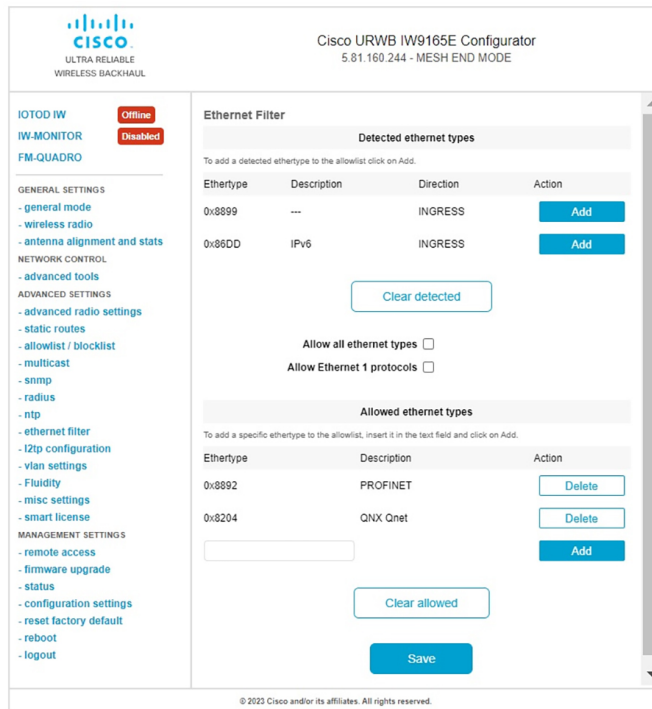
```
Device# show mpls ether-filter table
Ether-type  Direction  Description
0x8899      INGRESS    ---
0x86DD      INGRESS    IPv6
```

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**.

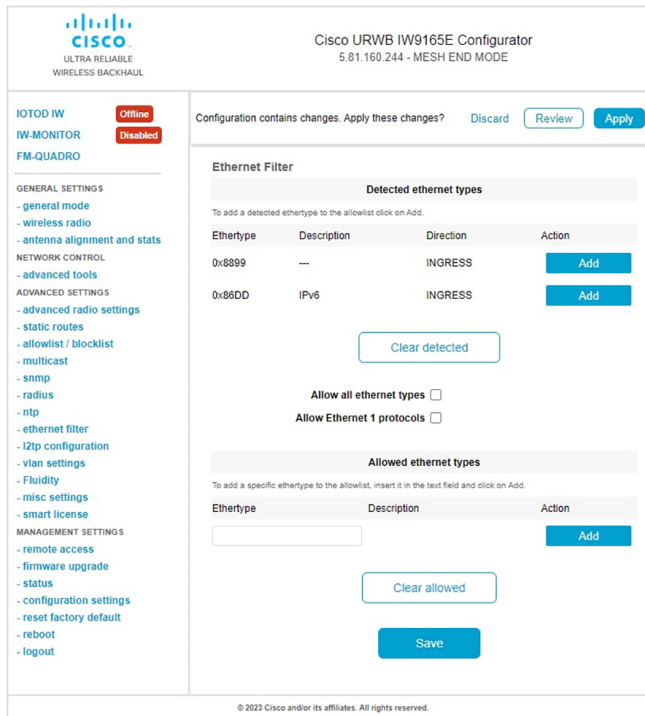
The following images show the specific and detected ether types added to the allowlist:



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:

Cisco URWB IW9165E Configurator
5.81.160.244 - MESH END MODE

Ethernet Filter

Detected ethernet types

To add a detected etherstype to the allowlist click on Add.

Ethertype	Description	Direction	Action
Clear detected			

Allow all ethernet types
 Allow Ethernet 1 protocols

Allowed ethernet types

To add a specific etherstype to the allowlist, insert it in the text field and click on Add.

Ethertype	Description	Action
0x8902	PROFINET	Delete
0x8204	QNX Onet	Delete
<input type="text"/>		Add

Clear allowed

Save

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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:

The screenshot shows the Cisco URWB IW9165E Configurator interface. The top header includes the Cisco logo and the text "Cisco URWB IW9165E Configurator 5.81.160.244 - MESH END MODE". Below the header, there are status indicators for "IOTOD IW" (Offline) and "IW-MONITOR" (Disabled). A notification bar states "Configuration contains changes. Apply these changes?" with buttons for "Discard", "Review", and "Apply".

The main content area is titled "Ethernet Filter" and contains the following elements:

- Detected ethernet types**: A section with the instruction "To add a detected ethernet type to the allowlist click on Add." Below this is a table with columns: Ethertype, Description, Direction, and Action.
- Table of Detected Ethernet Types**:

Ethertype	Description	Direction	Action
0x8899	---	INGRESS	Add
0x86DD	IPv6	INGRESS	Add
- Clear detected**: A button to clear the detected types.
- Allow all ethernet types**: A checked checkbox.
- Allow Ethernet 1 protocols**: An unchecked checkbox.
- Save**: A button to save the configuration.


The left sidebar contains a navigation menu with categories: GENERAL SETTINGS, NETWORK CONTROL, ADVANCED SETTINGS, and MANAGEMENT SETTINGS. The "ethernet filter" option is highlighted under the ADVANCED SETTINGS category.

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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:



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Cisco URWB IW9165E Configurator
5.81.160.244 - MESH END MODE

IOTOD IW Offline

IW-MONITOR Disabled

FM-QUADRO

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
0x8999	---	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
0x8992	PROFINET	Delete
0x8204	QNX Qnet	Delete
<input style="width: 80%;" type="text"/>		Add

[Clear allowed](#)

[Save](#)

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