

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:

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

Table 1: List of reserved ether-types

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:

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# 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:

ULTRA RELIABLE WIRELESS BACKHAUL		Cisco 5	URWB IW9165E .81.160.244 - MESH E	Configurato ND MODE	r
OTOD IW Offline	Ethernet	Filter			
W-MONITOR Disabled			Detected ethernet ty	nes	
M-QUADRO	To add a dated	ted athertune to the ally	wilst eliek on Add	pes	
	The set as	Description	Disection		A = 1 = -
SENERAL SETTINGS	Ethertype	Description	Direction		Action
general mode	0×8899		INGRES	s	Add
wireless radio	0.0500	ID-6	INCRES	0	
ETWORK CONTROL	0100000	IFV0	INGRES	5	Add
advanced tools					
ADVANCED SETTINGS			Clear detected	1	
advanced radio settings					
allowlist / blocklist		Allow all	ethernet types 🗌		
multicast		Allow Etherr	net 1 protocols		
snmp		Allow Edition			
radius			Allowed othernet fur		
ntp ethernet filter			Allowed ethernet typ	Jes	
12tp configuration	To add a speci	ific ethertype to the allow	vlist, insert it in the text field a	ind click on Add.	
vlan settings	Ethertype		Description		Action
Fluidity	0×8892		PROFINET		Delete
misc settings					
SMART LICENSE	0×8204		QNX Qnet		Delete
remote access					Add
firmware upgrade					
status					
- configuration settings			Clear allowed	J	
reset factory default					
reset factory default reboot					
reset factory default reboot logout			Save		
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reset factory default reboot .logout	© 200 Ethernet Filb To add a detected Ethertype 0x8899 0x88DD	23 Cisco andior its affilia Cisco URW 5.81.160 er Description IPv6	Estave Esta All rights reserved. TB IW9165E Configu 244 - MESH END MODE ected ethemet types ected ethemet types Direction INGRESS INGRESS Clear detected	rator Acton	dd
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resel factory default rebot logout	© 201 Ethernet Filt To add a detected Ethertype 0x8899 0x88DD	23 Cisco andior its affilia Cisco URW 5.81.160 er Description IPv6 Allow all etherr Allow Ethernet 1 p	Save Save Save Save Save Save Save Save	Action	5d d
reset factory default reboot logout	© 200 Ethernet Filb To add a detected Ethertype 0x8899 0x86DD	23 Cisco andior its affilia Cisco URW 5.81.160 er Description IPvS Allow all etherr Allow Ethernet 1 p Cisco URW Cisco URW 5.81.160	Earl aphts reserved. B IW9165E Configu B IW9165E Configu C44 - MESH END MODE acted athemet types acted athemet types Clear detected INGRESS INGRESS Clear detected Clear d	Action	id id
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reset factory default reboot logout 	© 200 Ethernet Filt To add a deacted Ethertype 0x8899 0x86DD	23 Cisco andior its affilia Cisco URW 5.81.160 er Det teterpse to the allowaist of Description 	Save Its. All rights reserved. Its. All righ	Action Deep Action Deep Action Action Deep Action A	dd iete
reset factory default reboot logout 	© 200 Ethernet Filt To add a detected Ethertype 0x8899 0x86DD	23 Cisco andior its affilia Cisco URW 5.81.160 er Description IPv6 Allow all etherr Allow Ethernet 1 p Description 2000 Children 1 p Per Children 1 p Per Ch	Save Save Save Save Save Save Save Save	Action Action Action Action	5d
reset factory default reboot logout Ligout LUTAR RELABLE WERESS BACOHAUL ULTAR RELABLE WERESS BACOHAUL ULTAR RELABLE WERESS BACOHAUL ULTAR RELABLE WERESS BACOHAUL SALESS ULTAR RELABLE MUNORY ON SALESS MACHINESS MAC	© 200 Ethernet Filb To add a detected Ethertype 0x8899 0x880D	23 Cisco andier its affilia Cisco URW 5.81.160 er Description IPv6 Allow all etherr Allow Ethernet 1 p Low Ethernet 1 p Per Cisco URW Pr Cisco URW Pr Cisco URW Cisco URW 5.81.160	Eacle attents types clear detected Clear det	Action Action Action Action Det	d d d d d
reset factory default reboot logout	Ethernet Filt To add a desceled Ethertype 0x880D 0x88DD	23 Cisco andior its affilia Cisco URW 5.81.160 er Decription IPv6 Allow all ethern Allow Ethernet 1 p Perception Decription	Save Save Save	Action	Hd Hd Hd Hd
reset factory default reboot logout 	© 200 Ethernet Filt To add a detected Ethertype 0x8899 0x86DD To add a specific er Ethertype 0x8892	23 Cisco andior its affilia Cisco URW 5.81.160 er Description IPv6 Allow all ethern Allow all ethern Allow Ethernet 1 p Cisco URW Allow Ethernet 1 p Perfyse to the allowist. In Perfyse to the allowist.	Ear All rights reserved. IB IW9165E Configu 244 - MESH END MODE acted ethemet types acted ethemet types INGRESS INGRESS Clear detected aret types control field and did not on acted the and the and did not control field and did not on of INET Clear allowed	Action	dd dd
reset factory default reboot logout 	© 200 Ethernet Filt 7a add a deacadd Ethertype 0x8899 0x88DD	23 Cisco andior its affilia Cisco URW 5.81.160 er Description IPv6 Allow all etherr Allow Ethernet 1 p Description Description Rescription Description Callow Ethernet 1 p Description Description Callow Ethernet 1 p Description Description Callow Ethernet 1 p Description Description 	Save tes. All rights reserved. B IW9165E Configu 244 - MESH END MODE acted ethemet types core on Add. Direction INGRESS INGRESS Clear detected clear detected acted the inst field and otics on core on Configure acted in the last field and otics on core on Configure Clear allowed Clear allowed	Add.	dd
reset factory default reboot rest factory default reboot	© 200 Ethernet Filth To add a detected o Ethertype 0x8899 0x880D	23 Cisco andior its affilia Cisco URW 5.81.160 er Det berype to the allowfat of Prof Allow all etherr Allow Ethernet 1 p Prof Pr	Save B INP166E Configu 244 - MESH END MODE acted ethemet types acted ethemet types acted ethemet types acted ethected INGRESS INGRESS Clear detected acted ethected acted	Acton	1d 1d 1d

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.

ULTRA RELIABLE WIRELESS BACKHAUL	Cisco URWB IW9165E Configurator 5.81.160.244 - MESH END MODE			
OTOD IW Offline W-MONITOR Disabled	Configuration con	tains changes. App	bly these changes? Discard	d Review Apply
FM-QUADRO	Ethernet Fi	Iter		
GENERAL SETTINGS			Detected ethernet types	
general mode	To add a detecte	d ethertype to the allow	vlist click on Add.	
wireless radio antenna alignment and stats	Ethertype	Description	Direction	Action
IETWORK CONTROL advanced tools	0×8899		INGRESS	Add
ADVANCED SETTINGS advanced radio settings static routes allowlist / blocklist multicast	0x86DD	IPv6	INGRESS Clear detected	Add
snmp radius		Allow all e	thernet types 🗌	
ntp ethernet filter		Allow Etherne	et 1 protocols	
I2tp configuration vlan settings			Allowed ethernet types	
Fluidity	To add a specific	ethertype to the allow	ist, insert it in the text field and click or	Add.
misc settings smart license	Ethertype		Description	Action
ANAGEMENT SETTINGS remote access firmware upgrade				Add
status configuration settings			Clear allowed	
reboot reboot logout			Save	

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:

ULTRA RELIABLE WIRELESS BACKHAUL	Cisco URWB IW9165E Configurator 5.81.160.244 - MESH END MODE				
OTOD IW Offline	Ethernet Fil	ter			
W-MONITOR Disabled	Detected ethernet types				
FM-QUADRO	To add a detected	To add a detected ethertype to the allowlist click on Add.			
SENERAL SETTINGS	Ethertype	Description	Direction	Action	
general mode					
wireless radio		(
antenna alignment and stats			Clear detected		
advanced tools		Allow all at			
DVANCED SETTINGS		Allow all el	inemet types		
advanced radio settings		Allow Etherne	t 1 protocols		
static routes					
allowlist / blocklist			Allowed ethernet types		
multicast			Anonea enternet gpes		
snmp	To add a specific	ethertype to the allowli	st, insert it in the text field and click on	Add.	
radius	Ethertype		Description	Action	
ntp	0.0000		PROFINET		
ethernet filter	0x8892		PROFINET	Delete	
- I2tp configuration	0×9204		ONX Onet	Delete	
vlan settings	0,0204		CITY CITEL	Delete	
Fluidity				Add	
misc settings				7100	
smart license					
MANAGEMENT SETTINGS			Clear allowed		
remote access			Cicul anoned		
- firmware upgrade					
- status			Sava		
- configuration settings			Save		
- reset factory default					
reboot					

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:

ULTRA RELIABLE WIRELESS BACKHAUL	Cisco URWB IW9165E Configurator 5.81.160.244 - MESH END MODE					
IOTOD IW Offline IW-MONITOR Disabled	Configuration contains changes. Apply these changes? Discard Review Apply these changes?					
FM-QUADRO		Ethernet Filter				
		Detecte	d ethernet types			
GENERAL SETTINGS	To add a dete	ected ethertype to th	e allowlist click on A	dd		
- general mode	Ethertune	Description	Direction	Action		
- wireless radio	Eulertype	Description	Direction	Action		
- antenna alignment and stats	0x8899		INGRESS			
NETWORK CONTROL						
- advanced tools	0x86DD	IPv6	INGRESS			
ADVANCED SETTINGS						
- advanced radio settings		_				
- static routes		C	lear detected			
- allowlist / blocklist)			
- multicast				_		
- snmp		Al	low all ethernet typ	es 🗹		
- radius		Allow	Ethernet 1 protoco	ls 🗆		
- ntp						
- ethernet filter						
- I2tp configuration			Save			
- vlan settings						
- Fluidity						
- misc settings						
- smart license						
MANAGEMENT SETTINGS						
- remote access						
- firmware upgrade						
- status						
 configuration settings 						
- reset factory default						
- reboot						
In most in						

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				
IOTOD IW Offline	Ethernet Fi	Iter			
IW-MONITOR Disabled			Detected ethernet types		
FM-QUADRO	To add a detected ethertype to the allowlist click on Add.				
GENERAL SETTINGS	Ethertype	Description	Direction	Action	
general mode wireless radio	0x8899		INGRESS	Add	
- antenna alignment and stats NETWORK CONTROL	0×86DD	IPv6	INGRESS	Add	
- advanced tools ADVANCED SETTINGS - advanced radio settings		(Clear detected		
- static routes - allowlist / blocklist		Allow all et	hernet types 🗌		
- multicast - snmp		Allow Etherne	t 1 protocols 🗹		
- radius - ntp			Allowed ethernet types		
- ethernet filter	To add a specific ethertype to the allowlist, insert it in the text field and click on Add.				
- I2tp configuration - vlan settings	Ethertype		Description	Action	
- Fluidity - misc settings	0×8892		PROFINET	Delete	
- smart license MANAGEMENT SETTINGS	0x8204		QNX Qnet	Delete	
- remote access - firmware upgrade				Add	
- status		ſ	Clear allowed		
- reset factory default		l			