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# QinQ commands

This document uses the following terms:

- **CVLAN**—Customer network VLANs, also called inner VLANs, refer to VLANs that a customer uses on the private network.
- **SVLAN**—Service provider network VLANs, also called outer VLANs, refer to VLANs that a service provider uses to transmit VLAN tagged traffic for customers.

## display qinq

Use **display qinq** to display QinQ-enabled interfaces.

### Syntax

```
display qinq [ interface interface-type interface-number ]
```

### Views

Any view

### Predefined user roles

network-admin  
network-operator

### Parameters

**interface** *interface-type interface-number*: Specifies an interface by its type and number. If you do not specify an interface, this command displays all QinQ-enabled interfaces.

### Usage guidelines

If QinQ is not enabled on any interfaces, this command does not provide any output.

### Examples

# Enable QinQ on Ten-GigabitEthernet 1/0/1. Then, verify that QinQ is enabled on the interface.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] qinq enable
[Sysname-Ten-GigabitEthernet1/0/1] display qinq interface ten-gigabitethernet 1/0/1
Interface
  Ten-GigabitEthernet1/0/1
```

# Enable QinQ on Ten-GigabitEthernet 1/0/1 and Ten-GigabitEthernet 1/0/3. Then, verify that QinQ is enabled on the interfaces.

```
<Sysname> system-view
[Sysname] interface ten-gigabitethernet 1/0/1
[Sysname-Ten-GigabitEthernet1/0/1] qinq enable
[Sysname-Ten-GigabitEthernet1/0/1] quit
[Sysname] interface ten-gigabitethernet 1/0/3
[Sysname-Ten-GigabitEthernet1/0/3] qinq enable
[Sysname-Ten-GigabitEthernet1/0/3] display qinq
Interface
  Ten-GigabitEthernet1/0/1
  Ten-GigabitEthernet1/0/3
```

## Related commands

**qinq enable**

# qinq enable

Use **qinq enable** to enable QinQ on an interface.

Use **undo qinq enable** to disable QinQ on an interface.

## Syntax

**qinq enable**

**undo qinq enable**

## Default

QinQ is disabled on interfaces.

## Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

## Predefined user roles

network-admin

## Examples

```
# Enable QinQ on Ten-GigabitEthernet 1/0/1.  
<Sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] qinq enable
```

## Related commands

**display qinq**

# qinq ethernet-type (interface view)

Use **qinq ethernet-type** to set the TPID value in SVLAN tags.

Use **undo qinq ethernet-type** to restore the default TPID value in SVLAN tags.

## Syntax

**qinq ethernet-type service-tag** *hex-value*

**undo qinq ethernet-type service-tag**

## Default

The TPID value in SVLAN tags is 8100 in hexadecimal notation.

## Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

## Predefined user roles

network-admin

## Parameters

**service-tag**: Sets the TPID value in the SVLAN tag.

*hex-value*: Sets a hexadecimal TPID value in the range of 1 to ffff, excluding the reserved EtherType values listed in [Table 1](#).

**Table 1 Reserved EtherType values**

Protocol type	Value
ARP	0x0806
PUP	0x0200
RARP	0x8035
IP	0x0800
IPv6	0x86dd
PPPoE	0x8863/0x8864
MPLS	0x8847/0x8848
IPX/SPX	0x8137
IS-IS	0x8000
LACP	0x8809
LLDP	0x88cc
802.1X	0x888e
802.1ag	0x8902
Cluster	0x88a7
Reserved	0xfffd/0xfffe/0xffff

## Usage guidelines

A service provider-side port uses the SVLAN TPID to replace the TPID in outgoing frames' SVLAN tags and match incoming tagged frames. An incoming frame is handled as untagged if the TPID in its outer VLAN tag is different from the SVLAN TPID.

## Examples

```
# Set the TPID value in SVLAN tags to 9100 (hexadecimal) on Ten-GigabitEthernet 1/0/1.  
<Sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] qinq ethernet-type service-tag 9100
```

## Related commands

**qinq ethernet-type** (system view)

## qinq ethernet-type (system view)

Use **qinq ethernet-type** to set the TPID value in CVLAN tags.

Use **undo qinq ethernet-type** to restore the default TPID value in CVLAN tags.

## Syntax

**qinq ethernet-type customer-tag** *hex-value*

**undo qinq ethernet-type customer-tag**

## Default

The TPID value in CVLAN tags is 8100 in hexadecimal notation.

## Views

System view

## Predefined user roles

network-admin

## Parameters

**customer-tag**: Sets the TPID value in the CVLAN tag.

*hex-value*: Sets a hexadecimal TPID value in the range of 1 to ffff, excluding the reserved EtherType values listed in [Table 2](#).

**Table 2 Reserved EtherType values**

Protocol type	Value
ARP	0x0806
PUP	0x0200
RARP	0x8035
IP	0x0800
IPv6	0x86dd
PPPoE	0x8863/0x8864
MPLS	0x8847/0x8848
IPX/SPX	0x8137
IS-IS	0x8000
LACP	0x8809
LLDP	0x88cc
802.1X	0x888e
802.1ag	0x8902
Cluster	0x88a7
Reserved	0xfffd/0xfffe/0xffff

## Usage guidelines

A QinQ-enabled port uses the CVLAN TPID to match incoming tagged frames. An incoming frame is handled as untagged if its TPID is different from the CVLAN TPID.

## Examples

```
# Set the TPID value in CVLAN tags to 8200 (hexadecimal).
<Sysname> system-view
[Sysname] qinq ethernet-type customer-tag 8200
```

## Related commands

**qinq ethernet-type** (interface view)

## qinq transparent-vlan

Use **qinq transparent-vlan** to enable transparent transmission for a list of VLANs on a port.

Use **undo qinq transparent-vlan** to disable transparent transmission for a list of VLANs on a port.

## Syntax

```
qinq transparent-vlan vlan-id-list  
undo qinq transparent-vlan { vlan-id-list | all }
```

## Default

Transparent transmission is disabled for all VLANs.

## Views

Layer 2 Ethernet interface view

Layer 2 aggregate interface view

## Predefined user roles

network-admin

## Parameters

*vlan-id-list*: Specifies a space-separated list of up to 10 VLAN items. Each item specifies a single VLAN ID or a VLAN ID range in the form of *vlan-id1* to *vlan-id2*. The value range for VLAN IDs is 1 to 4094. The end VLAN ID must be equal to or greater than the start VLAN ID.

**all**: Specifies all VLANs.

## Usage guidelines

By default, QinQ tags all incoming frames with the PVID on a port. This command disables QinQ to tag incoming traffic from a list of VLANs. These VLANs are called transparent VLANs.

You can repeat this command to add VLANs to the list of transparent VLANs.

To ensure successful transmission for a transparent VLAN, follow these configuration guidelines:

- Set the link type of the port to trunk or hybrid, and assign the port to the transparent VLAN.
- Do not configure any other VLAN manipulation actions for the transparent VLAN on the port.
- Make sure all ports on the traffic path permit the transparent VLAN to pass through.
- If you use both transparent VLANs and VLAN mappings on an interface, the transparent VLANs cannot be the following VLANs:
  - Original or translated VLANs of one-to-one, many-to-one, or one-to-two VLAN mappings.
  - Original or translated outer VLANs of two-to-two VLAN mappings.

## Examples

# Configure Ten-GigabitEthernet 1/0/1 as a trunk port, and assign the port to VLAN 2, VLAN 3, and VLANs 50 through 100. Enable QinQ on Ten-GigabitEthernet 1/0/1, and configure the port to transparently transmit frames from VLAN 2.

```
<Sysname> system-view  
[Sysname] interface ten-gigabitethernet 1/0/1  
[Sysname-Ten-GigabitEthernet1/0/1] port link-type trunk  
[Sysname-Ten-GigabitEthernet1/0/1] port trunk permit vlan 2 3 50 to 100  
[Sysname-Ten-GigabitEthernet1/0/1] qinq enable  
[Sysname-Ten-GigabitEthernet1/0/1] qinq transparent-vlan 2
```