



Configuring MVRP

This chapter describes how to configure Layer 2 switching using IEEE 802.1ak Multiple VLAN Registration Protocol (MVRP).

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Finding Feature Information

Your software release might not support all the features documented in this module. For the latest caveats and feature information, see the Bug Search Tool at <https://tools.cisco.com/bugsearch/> and the release notes for your software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the "New and Changed Information" chapter or the Feature History table in this chapter.

Information About MVRP

Multiple VLAN Registration Protocol (MVRP) is an IEEE 802.1ak Multiple Registration Protocol (MRP) application that supports dynamic registration and deregistration of VLANs on ports in a VLAN-bridged network.

MRP allows participants in a MRP application to register attributes with other participants in a bridged local area network (LAN).

MVRP registers VLANs and enables a VLAN bridge to restrict unknown unicast, multicast, and broadcast traffic to those links that the traffic uses to access the appropriate network devices.

The IEEE 802.1ak MRP provides improved resource utilization and bandwidth conservation. With the 802.1ak MRP attribute encoding scheme, MVRP sends only one protocol data unit (PDU) that includes the state of all 4094 VLANs on a port.

Guidelines and Limitations for Configuring MVRP

- MVRP is supported only on Layer 2 ports. MVRP is not supported on sub interfaces.
- MVRP is supported only on IEEE.802.1Q (dot1q) port channel Layer 2 ports.
- MVRP must be enabled on both sides of the trunk. In vPC topologies, the MVRP configuration on the vPC legs must be identical for both peers.
- When MVRP is disabled on the Cisco Nexus device, all ingress MVRP PDUs remain unprocessed and are flooded to other ports like multicast data frames.
- MVRP and VLAN Trunk Protocol (VTP) can coexist on the same interface. You can use MVRP to perform VLAN pruning and VTP to manage VLANs, such as adding or deleting VLANs.
- MVRP pruning and VTP pruning are mutually exclusive. VTP pruning can run only on ports where MVRP is disabled. If you enable both MVRP and VTP pruning on the interfaces, MVRP pruning takes precedence.
- MVRP and Private VLANs (PVLANS) are mutually exclusive.
- Auto detection of MAC addresses is not supported.
- MVRP dynamic VLAN creation is not supported.
- FabricPath is not supported.
- Management Information Base (MIB) is not supported.
- Interaction between MVRP and the following features is not supported:
 - Fabric Extender (FEX)
 - Overlay Transport Virtualization (OTV)
 - VLAN translation

Default Settings for MVRP

The following table lists the default settings for MVRP on Cisco NX-OS devices.

Parameter	Default
MVRP	Disabled

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Enabling MVRP

You can enable MVRP on all trunk ports on an interface.

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# interface <i>type number</i>	Configure an interface and enters interface configuration mode. The range for the <i>number</i> argument is from 1 to 253.
Step 3	switch(config-if)# feature mvrp	Enables MVRP on all trunk ports. If MVRP is not successfully enabled on the port, the port is put in the errdisabled state. Enter the shutdown and no shutdown commands to clear the errdisabled state. Note You must use the no mvrp command to explicitly disable MVRP on trunk ports that are connected to devices that do not support MVRP .

Modifying the MVRP Configuration on the Interface

You can perform this task to set the MVRP registrar state and configure MVRP timer values.

Before you begin

- Ensure that MVRP is enabled on the interface to be configured.

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# [no] interface <i>type number</i>	Configure an interface and enters interface configuration mode. The range for the <i>number</i> argument is from 1 to 253.

	Command or Action	Purpose
Step 3	(Optional) switch(config-if)# mvrp registration { normal fixed forbidden }	<p>Configure an interface and enters interface configuration mode.</p> <p>Sets the registrars in a Multiple Registration Protocol (MRP) Attribute Declaration (MAD) instance associated with an interface.</p> <ul style="list-style-type: none"> • Use the normal keyword to specify that the registrar respond normally to incoming MVRP messages. Normal is the default registrar state. • Use the fixed keyword to specify that the registrar ignore all incoming MVRP messages (remain in the IN state). VLANs are not pruned. • Use the forbidden keyword to specify that the registrar ignore all incoming MVRP messages (remain in the EMPTY (MT) state) and prune VLANs. <p>Note You can use the no mvrp registration command to return the registrar to the default value (normal).</p>
Step 4	(Optional) switch(config-if)# mvrp timer { join leave join-leave } <i>timer-value</i> periodic }	<p>Sets the period timers that are used in MVRP on a given interface.</p> <ul style="list-style-type: none"> • Use the join keyword to specify the time interval between two transmit opportunities that are applied to the Applicant State Machine (ASMs). The range is from 20 to 1,000,000 centiseconds. The default value is 20. • Use the leave keyword to specify the duration time before a registrar is moved to EMPTY (MT) state from leave-all (LV) state. The range is from 60 to 1,000,000 centiseconds. The default is 60. • Use the join-leave keyword to specify the time it takes for a LeaveAll timer to expire . The range is from 10,000 to 1,000,000 centiseconds. The default is 10,000. • Use the periodic keyword to set the timer value to a fixed value of 100 centiseconds.

	Command or Action	Purpose
		Note You can use the no mvrp timer command to remove the configured timer values.

Example

Verifying the MVRP Configuration

To display MVRP information, perform one of the following tasks:

Command	Purpose
show mvrp interface	Displays MVRP interface details of the administrative and operational states for all trunk ports in a device.
show mvrp interface <i>type number</i>	Displays MVRP interface details of the administrative and operational states for the specified interface in a device.
show mvrp interface <i>type number</i> statistic	Displays MVRP statistics for the specified interface in a device.
show mvrp pruning interface <i>type number</i>	Displays the pruned VLANs for the specified interface.

For detailed information about the fields in the output from these commands, see the *Cisco Nexus 7000 Series NX-OS Layer 2 Switching Command Reference*.

Clearing MVRP Statistics

You can clear collected statistics on one or all MVRP-enabled ports.

Procedure

	Command or Action	Purpose
Step 1	switch# clear mvrp statistics [interface <i>type number</i>]	Clears collected statistics for MVRP-enabled devices or interfaces. If used without the interface keyword, the command clears all MVRP statistics on the device.

Feature History for Configuring MVRP

This table includes only the updates for those releases that have resulted in additions or changes to the feature.

Table 1: Feature History for Configuring MVRP

Feature Name	Releases	Feature Information
MVRP	6.2(6)	This feature was introduced.