Configuring the MAC Address-Table Move Update Feature

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and 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 feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to https://cfnng.cisco.com/. An account on Cisco.com is not required.

Information About MAC Address-Table Move Update

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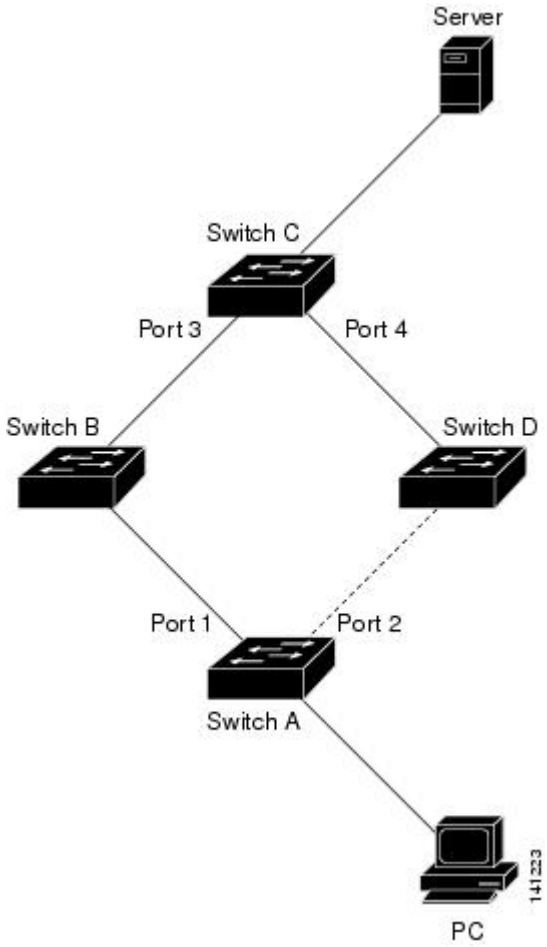
MAC Address-Table Move Update

The MAC address-table move update feature allows the device to provide rapid bidirectional convergence when a primary (forwarding) link goes down and the standby link begins forwarding traffic.

Figure 1: MAC Address-Table Move Update Example

In the following figure, switch A is an access switch, and ports 1 and 2 on switch A are connected to uplink devices B and D through a Flex Links pair. Port 1 is forwarding traffic, and port 2 is in the backup state. Traffic from the PC to the server is forwarded from port 1 to port 3. The MAC address of the PC has been

learned on port 3 of device C. Traffic from the server to the PC is forwarded from port 3 to port 1.



If the MAC address-table move update feature is not configured and port 1 goes down, port 2 starts forwarding traffic. However, for a short time, device C keeps forwarding traffic from the server to the PC through port 3, and the PC does not get the traffic because port 1 is down. If device C removes the MAC address of the PC on port 3 and relearns it on port 4, traffic can then be forwarded from the server to the PC through port 2.

If the MAC address-table move update feature is configured and enabled on the devices, and port 1 goes down, port 2 starts forwarding traffic from the PC to the server. The device sends a MAC address-table move update packet from port 2. Device C gets this packet on port 4 and immediately learns the MAC address of the PC on port 4, which reduces the reconvergence time.

You can configure the access device, device A, to *send* MAC address-table move update messages. You can also configure the uplink devices B, C, and D to *get* and process the MAC address-table move update messages. When device C gets a MAC address-table move update message from device A, device C learns the MAC address of the PC on port 4. Device C updates the MAC address table, including the forwarding table entry for the PC.

Device A does not need to wait for the MAC address-table update. The device detects a failure on port 1 and immediately starts forwarding server traffic from port 2, the new forwarding port. This change occurs in less than 100 milliseconds (ms). The PC is directly connected to device A, and the connection status does not change. Device A does not need to update the PC entry in the MAC address table.

Related Topics

Configuring a Device to Obtain and Process MAC Address-Table Move Update Messages , on page 4
Configuring MAC Address-Table Move Update , on page 3
Configuring the MAC Address-Table Move Update: Examples, on page 5

MAC Address-Table Move Update Configuration Guidelines

- You can enable and configure this feature on the access device to *send* the MAC address-table move updates.
- You can enable and configure this feature on the uplink devices to *get* the MAC address-table move updates.

How to Configure MAC Address-Table Move Update

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Configuring MAC Address-Table Move Update

SUMMARY STEPS

1. **configure terminal**
2. **interface** *interface-id*
3. Use one of the following:
   - **switchport backup interface** *interface-id*
   - **switchport backup interface** *interface-id* **mmu primary vlan** *vlan-id*
4. **end**
5. **mac address-table move update transmit**
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 2	**interface** *interface-id* **Example:** `Device#interface gigabitethernet1/0/1`	Specifies the interface, and enters interface configuration mode. The interface can be a physical Layer 2 interface or a port channel (logical interface). The port-channel range is 1 to 24.

	Command or Action	Purpose
Step 3	Use one of the following: • **switchport backup interface** *interface-id* • **switchport backup interface** *interface-id* **mmu primary vlan** *vlan-id* **Example:** `Device(config-if)# switchport backup interface gigabitethernet0/2 mmu primary vlan 2`	Configures a physical Layer 2 interface (or port channel), as part of a Flex Links pair with the interface. The MAC address-table move update VLAN is the lowest VLAN ID on the interface. Configure a physical Layer 2 interface (or port channel) and specifies the VLAN ID on the interface, which is used for sending the MAC address-table move update. When one link is forwarding traffic, the other interface is in standby mode.
Step 4	**end** **Example:** `Device(config-if)# end`	Returns to global configuration mode.
Step 5	**mac address-table move update transmit** **Example:** `Device(config)# mac address-table move update transmit`	Enables the access device to send MAC address-table move updates to other devices in the network if the primary link goes down and the device starts forwarding traffic through the standby link. Enter command **mac address-table move update** on the device, for MMU packets to update MAC tables. When the primary link comes back up, the MAC tables need to reconverge and this command will transmit the MMU, that will establish the behavior.
Step 6	**end** **Example:** `Device(config)# end`	Returns to privileged EXEC mode.

Related Topics

Configuring the MAC Address-Table Move Update: Examples, on page 5
MAC Address-Table Move Update, on page 1

Configuring a Device to Obtain and Process MAC Address-Table Move Update Messages

SUMMARY STEPS

1. **configure terminal**
2. **mac address-table move update receive**
3. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode
Step 2	**mac address-table move update receive** **Example:** `Device (config)# mac address-table move update receive`	Enables the device to obtain and processes the MAC address-table move updates.
Step 3	**end** **Example:** `Device (config)# end`	Returns to privileged EXEC mode.

Related Topics

Configuring the MAC Address-Table Move Update: Examples, on page 5
MAC Address-Table Move Update, on page 1

Monitoring the MAC Address-Table Move Update

Command	Purpose
show mac address-table move update	Displays the MAC address-table move update information on the

Configuration Examples for MAC Address-Table Move Update

Configuring the MAC Address-Table Move Update: Examples

This example shows how to verify the configuration after you configure an access device to send MAC address-table move updates:

```
Device# show mac address-table move update

Switch-ID : 010b.4630.1780
Dst mac-address : 0180.c200.0010
Vlans/Macs supported : 1023/8320
Default/Current settings: Rcv Off/On, Xmt Off/On
Max packets per min : Rcv 40, Xmt 60
Rcv packet count : 5
```

```
Rcv conforming packet count : 5
Rcv invalid packet count : 0
Rcv packet count this min : 0
Rcv threshold exceed count : 0
Rcv last sequence# this min : 0
Rcv last interface : Po2
Rcv last src-mac-address : 000b.462d.c502
Rcv last switch-ID : 0403.fd6a.8700
Xmt packet count : 0
Xmt packet count this min : 0
Xmt threshold exceed count : 0
Xmt pak buf unavail cnt : 0
Xmt last interface : None
```

Related Topics

Configuring MAC Address-Table Move Update , on page 3
Configuring a Device to Obtain and Process MAC Address-Table Move Update Messages , on page 4
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