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Introduction

This document provides MAC address table configuration examples.

Prerequisites

This document is not restricted to specific software or hardware versions.

The configuration examples in this document were created and verified in a lab environment, and all the devices were started with the factory default configuration. When you are working on a live network, make sure you understand the potential impact of every command on your network.

This document assumes that you have basic knowledge of the MAC address table.

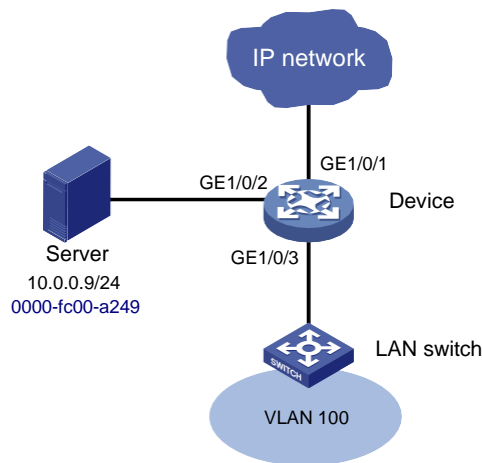
Example: Configuring static MAC address entries

Network configuration

As shown in [Figure 1](#), for secure communication between users in VLAN 100 and the server, perform the following tasks:

- Assign GigabitEthernet 1/0/2 and GigabitEthernet 1/0/3 to VLAN 100.
- Add a static MAC address entry on Device to bind the server MAC address to GigabitEthernet 1/0/2.

Figure 1 Network diagram



Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

Hardware	Software version
SC 3570 switch series	Release 11xx
SC 5525 switch series	Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 5520 switch series	Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 3170 switch series	Release 11xx
SC 3130 switch series	Release 63xx

Procedures

Create VLAN 100, and assign GigabitEthernet 1/0/2 to VLAN 100.

```
<Device> system-view
[Device] vlan 100
[Device-vlan100] quit
[Device] interface gigabitethernet 1/0/2
```

```
[Device-GigabitEthernet1/0/2] port access vlan 100
[Device-GigabitEthernet1/0/2] quit
```

Configure GigabitEthernet 1/0/3 (port connected to the LAN switch) as a trunk port, and assign the port to VLAN 100.

```
[Device] interface gigabitethernet 1/0/3
[Device-GigabitEthernet1/0/3] port link-type trunk
[Device-GigabitEthernet1/0/3] port trunk permit vlan 100
[Device-GigabitEthernet1/0/3] quit
```

Add a static entry for MAC address 0000-fc00-a249 on GigabitEthernet 1/0/2 that belongs to VLAN 100.

```
[Device] mac-address static 0000-fc00-a249 interface gigabitethernet 1/0/2 vlan 100
```

Verifying the configuration

Verify that any 10.0.0.0/24 host in VLAN 100 can communicate with the server. (Details not shown.)

Verify that the static MAC address entry has been added.

```
[Device] display mac-address
```

MAC Address	VLAN ID	State	Port/NickName	Aging
0000-fc00-a249	100	Static	GE1/0/2	N
7425-8a02-4d00	100	Learned	GE1/0/3	Y

...

Configuration files



IMPORTANT:

Support for the **port link-mode bridge** command depends on the device model.

```
#
sysname Device
#
vlan 1
#
vlan 100
#
interface GigabitEthernet1/0/2
 port link-mode bridge
 port access vlan 100
 mac-address static 0000-fc00-a249 vlan 100
#
interface GigabitEthernet1/0/3
 port link-mode bridge
 port link-type trunk
 port trunk permit vlan 1 100
#
```

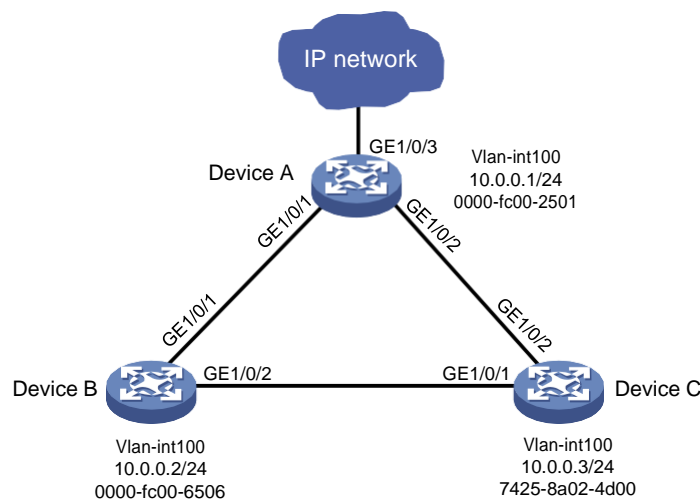
Example: Configuring MAC address move suppression

Network configuration

As shown in Figure 2, Devices A, B, and C form a loop because of cable misconnection, and spanning tree protocols are not enabled on the devices. As a result, MAC addresses are frequently moves among Devices A, B, and C. To deal with loop-triggered MAC flapping, perform the following tasks:

- Display MAC address move records to locate the Layer 2 loop.
- Configure MAC address move suppression on Device A to eliminate the Layer 2 loop.

Figure 2 Network diagram



Analysis

To meet the network requirements, you must perform the following tasks:

- For Devices A, B, and C to communicate with each other, assign all inter-connected ports to VLAN 100.
- Configure MAC address move suppression on one or more ports of Device A.
- To monitor the port status change of Device A, enable the log monitoring of the current terminal feature.
- For loop detection, create VLAN-interface 100 and assign an IP address to the interface on each device.
- To display MAC address move records, ping Device B from Device A.

Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

Hardware	Software version
SC 3570 switch series	Release 11xx
SC 5525 switch series	Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 5520 switch series	Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 3170 switch series	Release 11xx
SC 3130 switch series	Release 63xx

Procedures

Configuring Device A

Enable the monitoring of logs on the current terminal.

```
<DeviceA> terminal monitor
```

```
<DeviceA> terminal debugging
```

Create VLAN 100.

```
<DeviceA> system-view
[DeviceA] vlan 100
[DeviceA-vlan100] quit
```

Configure GigabitEthernet 1/0/1 and GigabitEthernet 1/0/2 as trunk ports, and assign the ports to VLAN 100.

```
[DeviceA] interface range gigabitethernet 1/0/1 gigabitethernet 1/0/2
[DeviceA-if-range] port link-type trunk
[DeviceA-if-range] port trunk permit vlan 100
[DeviceA-if-range] quit
```

Set the suppression interval to 300 seconds. A suppressed port will automatically come up after 300 seconds.

```
[DeviceA] mac-address notification mac-move suppression interval 300
```

Set the suppression threshold to 0. A port will be shut down when the system detects a MAC address move on the port within a MAC move detection interval (1 minute by default).

```
[DeviceA] mac-address notification mac-move suppression threshold 0
```

Enable MAC address move suppression on GigabitEthernet 1/0/1.

```
[DeviceA] interface gigabitethernet 1/0/1
[DeviceA-GigabitEthernet1/0/1] mac-address notification mac-move suppression
[DeviceA-GigabitEthernet1/0/1] quit
```

Create VLAN-interface 100, and assign an IP address to the interface.

```
[DeviceA] interface vlan-interface 100
[DeviceA-Vlan-interface100] ip address 10.0.0.1 24
[DeviceA-Vlan-interface100] quit
```

Configuring Device B and Device C

1. Configure Device B:

Create VLAN 100.

```
<DeviceB> system-view
[DeviceB] vlan 100
[DeviceB-vlan100] quit
```

Configure GigabitEthernet 1/0/1 and GigabitEthernet 1/0/2 as trunk ports, and assign the ports to VLAN 100.

```
[DeviceB] interface range gigabitethernet 1/0/1 gigabitethernet 1/0/2
[DeviceB-if-range] port link-type trunk
[DeviceB-if-range] port trunk permit vlan 100
[DeviceB-if-range] quit
```

Create VLAN-interface 100, and assign an IP address to the interface.

```
[DeviceB] interface vlan-interface 100
[DeviceB-Vlan-interface100] ip address 10.0.0.2 24
[DeviceB-Vlan-interface100] quit
```

2. Configure Device C in the same way Device B was configured. (Details not shown.)

Verifying the configuration

Ping Device B from Device A. (Details not shown.)

Verify that GigabitEthernet 1/0/1 on Device A is shut down.

```
[DeviceA] %Dec 11 09:51:06:309 2016 DeviceA IFNET/3/PHY_UPDOWN: -MDC=1; Physical state on the GigabitEthernet1/0/1 changed to down.
```

```
%Dec 11 09:51:06:323 2016 DeviceA IFNET/5/LINK_UPDOWN: -MDC=1; Line protocol state on the interface GigabitEthernet1/0/1 changed to down.
```

Verify that GigabitEthernet 1/0/1 is shut down because a MAC address move is detected.

```
[DeviceA] display interface gigabitethernet 1/0/1
GigabitEthernet1/0/1
```

```
Current state: mac-address moving down
```

```
Line protocol state: DOWN
```

```
...
```

Verify that GigabitEthernet 1/0/1 comes up automatically after 300 seconds.

```
[DeviceA] %Dec 11 09:56:07:002 2016 DeviceA IFNET/3/PHY_UPDOWN: -MDC=1; Physical state on the GigabitEthernet1/0/1 changed to up.
```

```
%Dec 11 09:56:07:004 2016 DeviceA IFNET/5/LINK_UPDOWN: -MDC=1; Line protocol state on the interface GigabitEthernet1/0/1 changed to up.
```

Verify that the MAC address of Device B's VLAN-interface 100 moves between GigabitEthernet 1/0/1 and GigabitEthernet 1/0/2. You can manually shut down either port to eliminate the loop.

```
[DeviceA] display mac-address mac-move
```

MAC address	VLAN	Current port	Source port	Last time	Times
0000-fc00-6506	100	GE1/0/2	GE1/0/1	2014-12-11 09:29:48	3
0000-fc00-6506	100	GE1/0/1	GE1/0/2	2014-12-11 09:51:03	4

```
--- 2 MAC address moving records found ---
```

Configuration files



IMPORTANT:

Support for the **port link-mode bridge** command depends on the device model.

- Device A:

```
#
sysname DeviceA
#
mac-address notification mac-move suppression interval 300
mac-address notification mac-move suppression threshold 0
#
vlan 1
#
vlan 100
#
interface Vlan-interface100
 ip address 10.0.0.1 255.255.255.0
#
interface GigabitEthernet1/0/1
 port link-mode bridge
 port link-type trunk
 port trunk permit vlan 1 100
```



```

mac-address notification mac-move suppression
#
interface GigabitEthernet1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
#

```

- **Device B:**

```

#
sysname DeviceB
#
vlan 1
#
vlan 100
#
interface Vlan-interface100
ip address 10.0.0.2 255.255.255.0
#
interface GigabitEthernet1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
#
interface GigabitEthernet1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
#

```

- **Device C:**

```

#
sysname DeviceC
#
vlan 1
#
vlan 100
#
interface Vlan-interface100
ip address 10.0.0.3 255.255.255.0
#
interface GigabitEthernet1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
#
interface GigabitEthernet1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100

```

#