CHAPTER 8

Configuring MAC ACLs

This chapter describes how to configure MAC access lists (ACLs) on NX-OS devices.

This chapter includes the following sections:

Information About MAC ACLs

MAC ACLs are ACLs that filter traffic using information in the Layer 2 header of each packet. MAC ACLs share many fundamental concepts with IP ACLs, including support for virtualization. For information about these shared concepts, see the "Information About ACLs" section on page 7-1.

Licensing Requirements for MAC ACLs

The following table shows the licensing requirements for this feature:

Product	License Requirement
DCNM	MAC ACLs require no license. Any feature not included in a license package is bundled with the Cisco DCNM and is provided at no charge to you. For a complete explanation of the DCNM licensing scheme, see the *Cisco DCNM Licensing Guide*.
NX-OS	MAC ACLs require no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For a complete explanation of the NX-OS licensing scheme, see the *Cisco Nexus 7000 Series NX-OS Licensing Guide, Release 4.0*.

Prerequisites for MAC ACLs

MAC ACLs have the following prerequisites:

- You must be familiar with MAC addressing and non-IP protocols to configure MAC ACLs.
- You must be familiar with the concepts in the "Information About ACLs" section on page 7-1.

Guidelines and Limitations

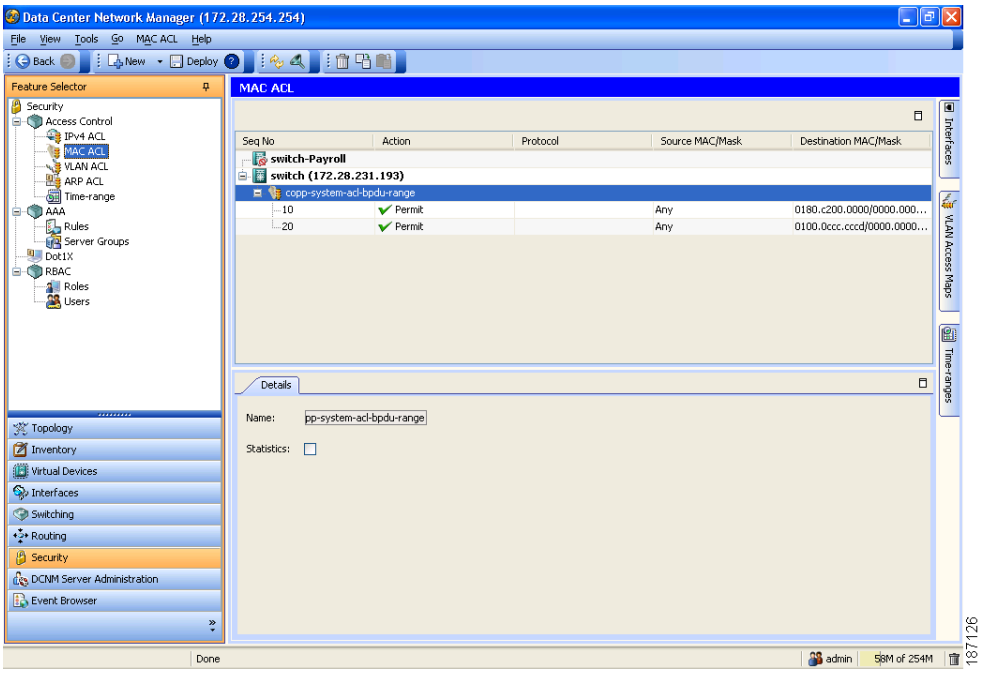
MAC ACLs have the following configuration guidelines and limitations:

- MAC ACLs apply to ingress traffic only.
- ACL statistics are not supported if the DHCP snooping feature is enabled.

Configuring MAC ACLs

Figure 8-1 shows the MAC ACL content pane.

Figure 8-1 MAC ACL Content Pane



This section includes the following topics:

- Creating a MAC ACL, page 8-3
- Changing a MAC ACL, page 8-3
- Removing a MAC ACL, page 8-4
- Applying a MAC ACL to a Physical Port, page 8-4

- Applying a MAC ACL as a VACL, page 8-5

Creating a MAC ACL

You can create a MAC ACL and add rules to it.

DETAILED STEPS

To create a MAC ACL on the device, follow these steps:

Step 1 From the Feature Selector pane, choose **Security > Access Control > MAC ACL**.

The Summary pane displays available devices.

Step 2 From the Summary pane, double-click the device to which you want to add an ACL.

Step 3 From the menu bar, choose **File > New > MAC ACL**.

A new row appears in the Summary pane and the ACL Details tab appears in the Details pane.

Step 4 On the ACL Details tab, in the Name field, type a name for the ACL.

Step 5 (Optional) If you want the device to maintain global statistics for rules in this MAC ACL, check **Statistics**.

Step 6 For each rule that you want to add to the ACL, from the menu bar, choose **File > New** and choose the type of rule. On the Details tab, configure fields as needed.

Step 7 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Changing a MAC ACL

In an existing MAC ACL, you can change, reorder, add, and remove rules.

DETAILED STEPS

To change a MAC ACL, follow these steps:

Step 1 From the Feature Selector pane, choose **Security > Access Control > MAC ACL**.

The Summary pane displays available devices.

Step 2 From the Summary pane, double-click the device that has the ACL you want to change and then double-click the ACL.

The ACLs on the device and the rules of the ACL that you double-clicked appear in the Summary pane.

Step 3 (Optional) If you change whether the device maintains global statistics for rules in this MAC ACL, click the ACL in the Summary pane. On the ACL Details tab, check or uncheck **Statistics** as needed.

Step 4 (Optional) If you want to change the details of a rule, click the rule in the Summary pane. On the Details tab, configure fields as needed.

Step 5 (Optional) If you want to move a rule to a different position in the ACL, click the rule and then from the menu bar, choose **MAC ACL > Move Up** or **MAC ACL > Move Down**.

The rule moves up or down, as you chose. The sequence number of the rules adjust accordingly.

Step 6 (Optional) If you want to add a rule, click the ACL in the Summary pane and then from the menu bar, choose **File > New** and choose the type of rule. On the Details tab, configure fields as needed.

Step 7 (Optional) If you want to remove a rule, click the rule and then from the menu bar, choose **MAC ACL > Delete**.

Step 8 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Removing a MAC ACL

You can remove a MAC ACL from the device.

BEFORE YOU BEGIN

Ensure that you know whether the ACL is applied to an interface. The device allows you to remove ACLs that are currently applied. Removing an ACL does not affect the configuration of interfaces where you have applied the ACL. Instead, the device considers the removed ACL to be empty.

DETAILED STEPS

To remove a MAC ACL, follow these steps:

Step 1 From the Feature Selector pane, choose **Security > Access Control > MAC ACL**.

The Summary pane displays available devices.

Step 2 From the Summary pane, double-click the device from which you want to remove an ACL.

The Summary pane displays the ACLs currently on the device.

Step 3 Click the ACL that you want to remove, and then from the menu bar, choose **MAC ACL > Delete**.

Cisco DCNM removes the ACL from the Summary pane.

Step 4 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Applying a MAC ACL to a Physical Port

You can apply a MAC ACL to incoming traffic on a physical Ethernet port, regardless of the port mode.

BEFORE YOU BEGIN

Ensure that the ACL that you want to apply exists and that it is configured to filter traffic in the manner that you need for this application. For more information, see the "Creating a MAC ACL" section on page 8-3 or the "Changing a MAC ACL" section on page 8-3.

DETAILED STEPS

To apply a MAC ACL to incoming traffic on a physical Ethernet port, follow these steps:

Step 1 From the Feature Selector pane, choose **Ports > Physical > Ethernet**.

The Summary pane displays available devices.

Step 2 From the Summary pane, double-click the applicable device and then double-click the slot containing the port.

The Summary pane displays the ports in the slot that you double-clicked.

Step 3 Click the port to which you want to apply a MAC ACL.

Step 4 From the Details pane, click the **Details** tab and expand the **Advanced Settings** section, if necessary.

In the Advanced Settings section, the MAC ACL area contains an Incoming Traffic drop-down list.

Step 5 In the MAC ACL area, from the Incoming Traffic drop-down list, choose the MAC ACL that you want to apply.

Step 6 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Applying a MAC ACL as a VACL

You can apply a MAC ACL as a VACL. For information about how to create a VACL using a MAC ACL, see the "Creating or Changing a VACL" section on page 9-3.

Displaying MAC ACL Statistics

The following window appears in the Statistics tab:

- Access Rule Statistics Chart—Information about the number of packets that match the selected MAC ACL rule.

See the *Cisco DCNM Fundamentals Configuration Guide, Release 4.0* for more information on collecting statistics for this feature.

Field Descriptions for MAC ACLs

The section includes the following topics:

MAC ACL: ACL Details Tab

Table 8-1 MAC ACL: ACL Details Tab

Field	Description
Name	Specifies the name of the MAC ACL. Names can be alphanumeric characters but must begin with an alphabetic character. Maximum length is 64 characters. No name is assigned by default.
Statistics	Whether the device logs statistics about traffic filtered by the ACL. This check box is unchecked by default.

MAC Access Rule: Details: General Section

Table 8-2 MAC Access Rule: Details: General Section

Field	Description
Sequence Number	*Display only.* Shows the sequence number assigned to the rule.
Action	Action taken by the device when it determines that the rule applies to the packet. Valid values are as follows: • Deny—Stop processing the packet and drop it. This is the default value. • Permit—Continue processing the packet.

MAC Access Rule: Details: Source and Destination Section

Table 8-3 MAC Access Rule: Details: Source and Destination Section

Field	Description
Source	Type of source. Valid values are: • Any—The rule matches packets from any source. This is the default value. When you choose Any, the MAC Address and Wildcard Mask fields below this list are unavailable because you do not need to specify either of them. • Host—The rule matches packets from a specific MAC address. When you choose Host, the MAC Address field below this list is available but the Wildcard Mask field remains unavailable. • Network—The rule matches packets from a MAC network. When you choose Network, the MAC Address and Wildcard Mask fields below this list are both available.
MAC Address (Source)	MAC address of a host or a network. Valid addresses are in dotted hexadecimal format. This field is available when you choose Host or Network from the Source drop-down list. By default, this field is blank.

Table 8-3 MAC Access Rule: Details: Source and Destination Section (continued)

Field	Description
Wildcard Mask (Source)	Wildcard mask of a MAC network. Valid masks are in dotted hexadecimal format. For example, if you specified 00c0.4f03.0000 in the MAC Address field, you would enter 0000.0000.ffff in this field. This field is available when you choose Network from the Source drop-down list. By default, this field is blank.
Destination	Type of destination. Valid values are as follows: • Any—The rule matches packets sent to any source. This is the default value. When you choose Any, the MAC Address and Wildcard Mask fields below this list are unavailable because you do not need to specify either of them. • Host—The rule matches packets sent to a specific MAC address. When you choose Host, the MAC Address field below this list is available but the Wildcard Mask field remains unavailable. • Network—The rule matches packets sent to a MAC network. When you choose Network, the MAC Address and Wildcard Mask fields below this list are both available.
MAC Address (Destination)	MAC address of a host or a network. Valid addresses are in dotted hexadecimal format. This field is available when you choose Host or Network from the Source drop-down list. By default, this field is blank.
Wildcard Mask (Destination)	Wildcard mask of a MAC network. Valid masks are in dotted hexadecimal format. For example, if you specified 00c0.4f03.0000 in the IP Address field, you would enter 0000.0000.ffff in this field. This field is available when you choose Network from the Source drop-down list. By default, this field is blank.

MAC ACL Remark: Remark Details Tab

Table 8-4 MAC ACL Remark: Remark Details Tab

Field	Description
Remark Sequence Number	*Display only.* Sequence number assigned to the remark.
Remark Description	Remark text. Maximum length is 100 characters. By default, this field is blank.

Additional References

For additional information related to implementing MAC ACLs, see the following sections:

- Related Documents, page 8-8
- Standards, page 8-8

Related Documents

Related Topic	Document Title
Concepts about ACLs	*Information About ACLs, page 7-1*

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—