



## Configuring ACLs

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This chapter describes how to configure network security on the Cisco ME 1200 NID using access control lists (ACLs), which are also referred as access lists. Information in this chapter about ACLs is specific to IP Version 4 (IPv4).

For more information on ACLs, see [Configuring Network Security with ACLs](#).

- [Prerequisites for Configuring ACLs, page 1](#)
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## Prerequisites for Configuring ACLs

- NID must have an IP address.

## Restrictions for Configuring ACLs

- Logging of the packet frames are not supported.
- Modifying ACL parameter that is applied on Cisco ME 1200 NID is not supported. To modify, remove the parameter using the **removeAclConfig** and **removeAclFromPort** commands, and apply it to a port afresh.
- A maximum of 512 ACL entries can be programmed.
- ACLs can be configured with policy IDs ranging from 0 to 63.



**Tip** To add more number of ACLs when the maximum entries are achieved, remove unwanted ACLs to configure more ACLs.



**Note**

The rules defined in the Controller, can be configured in Cisco ME 1200 NID .

# How to Configure ACLs

## Configuring ACL Rules on the NID

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<p><b>mac access-list</b> {extended <i>WORD</i>}</p> <p><b>Example:</b> Switch# mac access-list extended nid-acl-50000</p>	<p>Configures the extended ACL rules.</p> <ul style="list-style-type: none"> <li>• <b>access-list</b>—Specifies the named access-list. <ul style="list-style-type: none"> <li>◦ <b>extended</b>—Specifies that the access-list is of the type <b>extended</b>.</li> <li>◦ <i>WORD</i>—access-list name.</li> </ul> </li> </ul>
<b>Step 2</b>	<p><b>deny</b> {<b>H.H.H</b>  <b>any</b>  <b>host</b> <i>H.H.H</i>} {<b>H.H.H</b>  <b>any</b>  <b>host</b> <i>H.H.H</i>} <b>OR</b> <b>permit</b> {<b>H.H.H</b>  <b>any</b>  <b>host</b> <i>H.H.H</i>} {<b>H.H.H</b>  <b>any</b>  <b>host</b> <i>H.H.H</i>}</p> <p><b>Example:</b> Switch(ext-macl)# deny host 0000.0000.0001 host 5555.6666.7777  Switch(ext-macl)# permit host 4444.aaaa.cccc host 4444.cccc.aaaa</p>	<p>Configures the ACL rule.</p> <ul style="list-style-type: none"> <li>• <b>deny</b>—Specifies the packets to be reject. <ul style="list-style-type: none"> <li>◦ <b>icmp</b>—Internet Control Message Protocol.</li> <li>◦ <b>ip</b>—Any Internet Protocol.</li> <li>◦ <b>tcp</b>—Transmission Control Protocol.</li> <li>◦ <b>udp</b>—User Datagram Protocol.</li> </ul> </li> <li>• <b>permit</b>—Specifies the packets to be forward. <ul style="list-style-type: none"> <li>◦ <b>icmp</b>—Internet Control Message Protocol.</li> <li>◦ <b>ip</b>—Any Internet Protocol.</li> <li>◦ <b>tcp</b>—Transmission Control Protocol.</li> <li>◦ <b>udp</b>—User Datagram Protocol.</li> </ul> </li> <li>• <b>H.H.H</b>—Specifies the 48-bit source or destination MAC address.</li> <li>• <b>any</b>—Specifies any source or destination MAC address.</li> <li>• <b>host</b>—Specifies a single source or destination host. <ul style="list-style-type: none"> <li>◦ <i>H.H.H</i>—48-bit source or destination MAC address.</li> </ul> </li> </ul>

	Command or Action	Purpose
Step 3	<b>exit</b>  <b>Example:</b> Switch(ext-macl)# exit	Exits the ext-macl mode.

### Configuration Example



#### Note

The following two configuration examples use IOS ACL commands.

Example 1: MAC

```
Switch# mac access-list extended nid_acl_50000
Switch(ext-macl)# deny host 0000.0000.0001 host 5555.6666.7777
Switch# mac access-list extended nid_acl_1002
Switch(ext-macl)# permit host 4444.aaaa.cccc host 4444.cccc.aaaa
Switch(ext-macl)# permit any any etype-6000
Switch(ext-macl)# exit
```

Example 2: IP

```
Switch# ip access-list extended nid_acl_1001
Switch(ext-nacl)# deny ip host 15.15.1.2 host 15.15.1.3
Switch(ext-nacl)# deny tcp host 10.10.1.5 eq 101 host 10.10.1.6 eq 100
Switch(ext-macl)# exit
```

## Creating ACL Global Configurations

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>ProvisionACL</b>  <b>Example:</b> Switch# ProvisionACL	Enters the ProvisionACL mode.
Step 2	<b>createAclConfigcreateAclConfigRequest {acl_name WORD}</b>  <b>Example:</b> Switch(ProvisionACL)# createAclConfig createAclConfigRequest acl-name nid-acl-50000	Configures the ACL global configuration. <ul style="list-style-type: none"> <li>• <b>acl-name</b>—Specifies the extended ACL. <ul style="list-style-type: none"> <li>◦ <i>WORD</i>—ACL name.</li> </ul> </li> </ul>
Step 3	<b>createAclConfig review</b>  <b>Example:</b> Switch(ProvisionACL)# createAclConfig review	Displays the configuration.

	Command or Action	Purpose
<b>Step 4</b>	<b>createAclConfig commit</b>  <b>Example:</b> Switch(ProvisionACL)# createAclConfig commit	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(ProvisionACL)# exit	Exits from the ProvisionACL mode.

### Configuration Example

```
Switch# ProvisionACL
Switch(ProvisionACL)# createAclConfig createAclConfigRequest acl-name acl-nid-50000
Switch(ProvisionACL)# createAclConfig review

Commands in queue:
  createAclConfig createAclConfigRequest acl-name acl-nid-50000

Switch(ProvisionACL)# createAclConfig commit

  CreateAclConfig Commit Success!!!

Switch(ProvisionACL)# exit
```

## Applying ACL Configuration to the Ports

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>ProvisionACL</b>  <b>Example:</b> Switch# ProvisionACL	Enters the ProvisionACL mode.
<b>Step 2</b>	<b>applyAclToPortapplyAclToPortRequest {acl-name <i>WORD</i>   port-number <i>Port-Number</i>}</b>  <b>Example:</b> Switch(ProvisionACL)# applyAclToPort applyAclToPortRequest acl-name nid-acl-50000  Switch(ProvisionACL)# applyAclToPort applyAclToPortRequest port-number 3	Applies the ACL global configuration. <ul style="list-style-type: none"> <li>• <b>acl-name</b>—specifies the extended ACL. <ul style="list-style-type: none"> <li>◦ <i>WORD</i>—ACL name.</li> </ul> </li> <li>• <b>port-number</b>—Specifies the port number. <ul style="list-style-type: none"> <li>◦ <i>Port-Number</i>—port number. The range is from 1 to 6.</li> </ul> </li> </ul>

	Command or Action	Purpose
Step 3	<b>applyAclToPort review</b>  <b>Example:</b> Switch(ProvisionACL)# applyAclToPort review	Displays the configuration.
Step 4	<b>applyAclToPort commit</b>  <b>Example:</b> Switch(ProvisionACL)# applyAclToPort commit	Sends the configuration to the NID.
Step 5	<b>exit</b>  <b>Example:</b> Switch(ProvisionACL)# exit	Exits the ProvisionACL mode.

### Configuration Example

```
Switch# ProvisionACL
Switch(ProvisionACL)# applyAclToPort applyAclToPortRequest acl-name nid-acl-50000
Switch(ProvisionACL)# applyAclToPort applyAclToPortRequest port-number 3
Switch(ProvisionACL)# applyAclToPort review
```

```
Commands in queue:
  applyAclToPort applyAclToPortRequest acl-name nid-acl-50000
  applyAclToPort applyAclToPortRequest port-number 3
```

```
Switch(ProvisionACL)# applyAclToPort commit
```

```
  ApplyAclToPort Commit Success!!!
```

```
Switch(ProvisionACL)# exit
```

For applying the policy ID using EVC configuration, see [Configuring ECE Rule 1](#) and [Other Commands For EVC Configuration](#).

## Viewing ACL Global Configurations

### DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>ProvisionACL</b>  <b>Example:</b> Switch# ProvisionACL	Enters the ProvisionACL mode.
Step 2	<b>getAclConfiggetAclConfigRequest {acl-name WORD}</b>  <b>Example:</b> Switch(ProvisionACL)# getAclConfig getAclConfigRequest acl-name nid-acl-50000	Displays the ACL global configuration. <ul style="list-style-type: none"> <li>• <b>acl_name</b>—Specifies the extended ACL .</li> <li>◦ <b>WORD</b>—ACL name.</li> </ul>

	Command or Action	Purpose
<b>Step 3</b>	<b>getAclConfig review</b>  <b>Example:</b> Switch(ProvisionACL)# getAclConfig review	Displays the configuration.
<b>Step 4</b>	<b>getAclConfig commit</b>  <b>Example:</b> Switch(ProvisionACL)# getAclConfig commit	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(ProvisionACL)# exit	Exits the ProvisionACL mode.

### Configuration Example

```
Switch# ProvisionACL
Switch(ProvisionACL)# getAclConfig getAclConfigRequest acl-name nid-acl-50000
Switch(ProvisionACL)# getAclConfig review
```

```
Commands in queue:
  getAclConfig getAclConfigRequest acl-name nid-acl-50000
```

```
Switch(ProvisionACL)# getAclConfig commit
GetAclConfig-Output.getAclConfigResponse.acl-definition = '
Extended MAC access list nid-acl-50000
  permit host 0000.0000.0001 host 5555.5556.5557
  permit any any etype-6000'
```

```
GetAclConfig Commit Success!!!
```

```
Switch(ProvisionACL)# exit
```

Example 2: IP

```
Switch# ProvisionACL
Switch(ProvisionACL)# getAclConfig getAclConfigRequest acl-name nid-acl-50000
Switch(ProvisionACL)# getAclConfig review
```

```
Commands in queue:
  getAclConfig getAclConfigRequest acl-name nid-acl-50000
```

```
Switch(ProvisionACL)# getAclConfig commit
GetAclConfig-Output.getAclConfigResponse.acl-definition = '
Extended IP access list nid-acl-1001
  ip access-list extended nid-acl-1001
  deny ip host 15.15.1.2 host 15.15.1.3'
```

```
GetAclConfig Commit Success!!!
```

```
Switch(ProvisionACL)# exit
```

# Removing ACL Global Configurations

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>ProvisionACL</b>  <b>Example:</b> Switch# ProvisionACL	Enters the ProvisionACL mode.
<b>Step 2</b>	<b>removeAclconfigremoveAclConfigRequest {acl-name WORD}</b>  <b>Example:</b> Switch(ProvisionACL)# removeAclconfig removeAclConfigRequest acl-name nid-acl-50000	Removes the ACL global configuration.  • <b>acl-name</b> —Specifies the extended ACL . ◦ <b>WORD</b> —ACL name.
<b>Step 3</b>	<b>removeAclconfig review</b>  <b>Example:</b> Switch(ProvisionACL)# removeAclconfig review	Displays the configuration.
<b>Step 4</b>	<b>removeAclconfig commit</b>  <b>Example:</b> Switch(ProvisionACL)# removeAclconfig commit	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(ProvisionACL)# exit	Exits from the ProvisionACL mode.

### Configuration Example

```
Switch# ProvisionACL
Switch(ProvisionACL)# removeAclconfig removeAclConfigRequest acl-name nid-acl-50000
Switch(ProvisionACL)# removeAclconfig review
```

```
Commands in queue:
  removeAclconfig removeAclConfigRequest acl-name nid-acl-50000
```

```
Switch(ProvisionACL)# removeAclconfig commit
RemoveAclConfig Commit Success!!!
```

#### To verify the remove action:

```
Switch(ProvisionACL)# getAclConfig getAclConfigRequest acl-name nid-acl-50000
Switch(ProvisionACL)# getAclConfig commit
```

```
GetAclConfig-Output.getAclConfigResponse.acl-definition = '
nid-acl-50000 does not exist '
```

```
GetAclConfig Commit Success!!!
```

```
Switch(ProvisionACL)# exit
```

### What to Do Next

Use the `getAclConfig getAclConfigRequest` command to verify the remove action.

```
Switch(ProvisionACL)# getAclConfig getAclConfigRequest acl_name acl_name
Switch(ProvisionACL)# getAclConfig review
Switch(ProvisionACL)# getAclConfig commit
```

## Removing ACL Port Configurations

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>ProvisionACL</b>  <b>Example:</b> Switch# ProvisionACL	Enters the ProvisionACL mode.
<b>Step 2</b>	<b>removeAclFromPort removeAclFromPortRequest</b> <b>{acl-name WORD   port-number port-Number}</b>  <b>Example:</b> Switch(ProvisionACL)# removeAclFromPort removeAclFromPortRequest port-number 3	Removes the ACL port configuration. <ul style="list-style-type: none"> <li>• <b>acl-name</b>—Specifies the extended ACL.               <ul style="list-style-type: none"> <li>◦ <i>WORD</i>—ACL name.</li> </ul> </li> <li>• <b>port-number</b>—Specifies the port number.               <ul style="list-style-type: none"> <li>◦ <i>Port-Number</i>—Port number. The range is from 1 to 6.</li> </ul> </li> </ul>
<b>Step 3</b>	<b>removeAclFromPort review</b>  <b>Example:</b> Switch(ProvisionACL)# removeAclFromPort review	Displays the configuration.
<b>Step 4</b>	<b>removeAclFromPort commit</b>  <b>Example:</b> Switch(ProvisionACL)# removeAclFromPort commit	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(ProvisionACL)# exit	Exits from the ProvisionACL mode.

### Configuration Example

```
Switch# ProvisionACL
Switch(ProvisionACL)# removeAclFromPort removeAclFromPortRequest port-number 3
Switch(ProvisionACL)# removeAclFromPort review
```

```
Commands in queue:
  removeAclFromPort removeAclFromPortRequest port-number 3
```



```
Switch(ProvisionACL)# removeAclFromPort commit
RemoveAclFromPort Commit Success!!!

Switch(ProvisionACL)# exit
```

### What to Do Next

Use the `showAclConfigSummary` command to view the interface ACL summary.

```
Switch(ProvisionACL)# showAclConfigSummary showAclConfigSummaryRequest
Switch(ProvisionACL)# showAclConfigSummary review
Switch(ProvisionACL)# showAclConfigSummary commit
```

## Verifying ACL Configurations

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>ProvisionACL</b>  <b>Example:</b> Switch# ProvisionACL	Enters the ProvisionACL mode.
<b>Step 2</b>	<b>showAclConfigSummaryshowAclConfigSummaryRequest</b>  <b>Example:</b> Switch(ProvisionACL)# showAclConfigSummary showAclConfigSummaryRequest	Displays the ACL configuration summary.
<b>Step 3</b>	<b>showAclConfigSummary review</b>  <b>Example:</b> Switch(ProvisionACL)# showAclConfigSummary review	Displays the configuration.
<b>Step 4</b>	<b>showAclConfigSummary commit</b>  <b>Example:</b> Switch(ProvisionACL)# showAclConfigSummary commit	Sends the configuration to the NID.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Switch(ProvisionACL)# exit	Exits the ProvisionACL mode.

### Configuration Example

```
Switch# ProvisionACL
Switch(ProvisionACL)# showAclConfigSummary showAclConfigSummaryRequest
Switch(ProvisionACL)# showAclConfigSummary review

Commands in queue:
showAclConfigSummary showAclConfigSummaryRequest

Switch(ProvisionACL)# showAclConfigSummary commit
```

```
ShowAclConfigSummary-Output.showAclConfigSummaryResponse.showOutput = '  
Acl Configuration Summary  
  policyid: 0 aclname: nid-acl-50000  
  
Interface Acl Summary  
  Port 3: nid-acl-50000'  
  
ShowAclConfigSummary Commit Success!!!  
Switch(ProvisionACL)# exit
```