



E Commands

This chapter describes the Cisco NX-OS security commands that begin with E.

eou allow clientless

To enable Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP) posture validation of clientless endpoint devices, use the **eou allow clientless** command. To disable posture validation of clientless endpoint devices, use the **no** form of this command.

eou allow clientless

no eou allow clientless

Syntax Description This command has no arguments or keywords.

Defaults Disabled

Command Modes Global configuration

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines You must use the **feature eou** command before you configure EAPoUDP.
This command does not require a license.

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Examples

This example shows how to allow EAPoUDP posture validation of clientless endpoint devices:

```
switch# config t  
switch(config)# eou allow clientless
```

This example shows how to prevent EAPoUDP posture validation of clientless endpoint devices:

```
switch# config t  
switch(config)# no eou allow clientless
```

Related Commands

Command	Description
feature eou	Enables EAPoUDP.
show eou	Displays EAPoUDP information.

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eou default

To revert to the default global or interface configuration values for Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP), use the **eou default** command.

eou default

Syntax Description This command has no arguments or keywords.

Defaults None

Command Modes Global configuration
Interface configuration

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines You must use the **feature eou** command before you configure EAPoUDP.
This command does not require a license.

Examples This example shows how to change the global EAPoUDP configuration to the default:

```
switch# config t
switch(config)# eou default
```

This example shows how to change the EAPoUDP configuration for an interface to the default:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou default
```

Related Commands	Command	Description
	feature eou	Enables EAPoUDP.
	show eou	Displays EAPoUDP information.

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eou initialize

To initialize Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP) sessions, use the **eou initialize** command.

```
eou initialize { all | authentication { clientless | eap | static } | interface ethernet slot/port |
ip-address ipv4-address | mac-address mac-address | posturetoken name }
```

Syntax Description		
all		Initializes all EAPoUDP sessions.
authentication		Initializes EAPoUDP sessions for a specific authentication types.
clientless		Specifies sessions authenticated using clientless posture validation.
eap		Specifies sessions authenticated using EAPoUDP.
static		Specifies sessions authenticated using statically configured exception lists.
interface ethernet <i>slot/port</i>		Initializes the EAPoUDP sessions for a specific interface.
ip-address <i>ipv4-address</i>		Initializes the EAPoUDP sessions for a specific IPv4 address.
mac-address <i>mac-address</i>		Initializes the EAPoUDP sessions for a specific MAC address.
posturetoken <i>name</i>		Initializes the EAPoUDP sessions for a specific posture token.

Defaults None

Command Modes Any command mode

Supported User Roles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines You must use the **feature eou** command before you configure EAPoUDP.
This command does not require a license.

Examples This example shows how to initialize all the EAPoUDP sessions:

```
switch# eou initialize all
```

This example shows how to initialize the EAPoUDP sessions that were statically authenticated:

```
switch# eou initialize authentication static
```

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This example shows how to initialize the EAPoUDP sessions for an interface:

```
switch# eou initialize interface ethernet 1/1
```

This example shows how to initialize the EAPoUDP sessions for an IP address:

```
switch# eou initialize ip-address 10.10.1.1
```

This example shows how to initialize all the EAPoUDP sessions for a MAC address:

```
switch# eou initialize mac-address 0019.076c.dac4
```

This example shows how to initialize all the EAPoUDP sessions for a posture token:

```
switch# eou initialize posturetoken healthy
```

Related Commands

Command	Description
feature eou	Enables EAPoUDP.
show eou	Displays EAPoUDP information.

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eou logging

To enable Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP) logging, use the **eou logging** command. To disable EAPoUDP logging, use the **no** form of this command.

eou logging

no eou logging

Syntax Description This command has no arguments or keywords.

Defaults Global configuration: Disabled
Interface configuration: Global configuration setting

Command Modes Global configuration
Interface configuration

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines The setting for EAPoUDP logging on an interface overrides the global setting.
You must use the **feature eou** command before you configure EAPoUDP.
This command does not require a license.

Examples This example shows how to enable global EAPoUDP logging:

```
switch# config t
switch(config)# eou logging
```

This example shows how to disable global EAPoUDP logging:

```
switch# config t
switch(config)# no eou logging
```

This example shows how to enable EAPoUDP logging for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou logging
```

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This example shows how to disable EAPoUDP logging for an interface:

```
switch# config t  
switch(config)# interface ethernet 1/1  
switch(config-if)# no eou logging
```

Related Commands

Command	Description
feature eou	Enables EAPoUDP.
show eou	Displays EAPoUDP information.

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eou max-retry

To configure the maximum number of attempts for Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP) globally or for an interface, use the **eou max-retry** command. To revert to the default, use the **no** form of this command.

eou max-retry *count*

no eou max-retry

Syntax Description

<i>count</i>	Maximum number of retry attempts. The range is from 1 to 3.
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Defaults

Global configuration: 3

Interface configuration: global configuration value

Command Modes

Global configuration

Interface configuration

Supported User Roles

network-admin

vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

The maximum retries for an interface takes precedence over the globally configured value.

You must use the **feature eou** command before you configure EAPoUDP.

This command does not require a license.

Examples

This example shows how to change the global maximum number of EAPoUDP retry attempts:

```
switch# config t
switch(config)# eou max-retry 2
```

This example shows how to revert to the default global maximum number of EAPoUDP retry attempts:

```
switch# config t
switch(config)# no eou max-retry
```

This example shows how to change the maximum number of EAPoUDP retry attempts for an interface:

```
switch# config t
switch(config) interface ethernet 1/1
switch(config-if)# eou max-retry 3
```

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This example shows how to revert to the maximum number of EAPoUDP retry attempts for an interface:

```
switch# config t  
switch(config) interface ethernet 1/1  
switch(config-if) # no eou max-retry
```

Related Commands

Command	Description
feature eou	Enables EAPoUDP.
show eou	Displays EAPoUDP information.

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eou port

To configure the User Datagram Protocol (UDP) port number for Extensible Authentication Protocol over UDP (EAPoUDP), use the **eou port** command. To revert to the default, use the **no** form of this command.

eou port *udp-port*

no eou port

Syntax Description	<i>udp-port</i>	UDP port number. The range is from 1 to 65535.
Defaults	21862 (0x5566)	
Command Modes	Global configuration	
SupportedUserRoles	network-admin vdc-admin	
Command History	Release	Modification
	4.0(1)	This command was introduced.
Usage Guidelines	You must use the feature eou command before you configure EAPoUDP. This command does not require a license.	
Examples	<p>This example shows how to change the UDP port number for EAPoUDP:</p> <pre>switch# config t switch(config)# eou port 21856</pre> <p>This example shows how to revert to the default UDP port number for EAPoUDP:</p> <pre>switch# config t switch(config)# no eou port</pre>	
Related Commands	Command	Description
	feature eou	Enables EAPoUDP.
	show eou	Displays EAPoUDP information.

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eou ratelimit

To configure the number of simultaneous posture validation sessions for Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP), use the **eou ratelimit** command. To revert to the default, use the **no** form of this command.

eou ratelimit *sessions*

no eou ratelimit

Syntax Description

<i>sessions</i>	Maximum number of simultaneous EAPoUDP posture validation sessions. The range is from 0 to 200.
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Defaults

Global configuration: 20

Interface configuration: Global configuration setting

Command Modes

Global configuration
Interface configuration

SupportedUserRoles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

Setting the EAPoUDP rate limit to zero (0) allows no simultaneous posture validation sessions. The EAPoUDP rate limit for an interface overrides the globally EAPoUDP rate limit setting. You must use the **feature eou** command before you configure EAPoUDP. This command does not require a license.

Examples

This example shows how to change the global maximum number of simultaneous EAPoUDP posture-validation sessions:

```
switch# config t
switch(config)# eou ratelimit 30
```

This example shows how to revert to the default global maximum number of simultaneous EAPoUDP posture-validation sessions:

```
switch# config t
switch(config)# no eou ratelimit
```

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This example shows how to change the maximum number of simultaneous EAPoUDP posture-validation sessions for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou ratelimit 30
```

This example shows how to revert to the default maximum number of simultaneous EAPoUDP posture-validation sessions for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# no eou ratelimit
```

Related Commands

Command	Description
feature eou	Enables EAPoUDP.
show eou	Displays EAPoUDP information.

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eou revalidate (EXEC)

To revalidate Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP) sessions, use the **eou revalidate** command.

```
eou revalidate {all | authentication {clientless | eap | static} | interface ethernet slot/port |
ip-address ipv4-address | mac-address mac-address | posturetoken name}
```

Syntax Description		
all		Revalidates all EAPoUDP sessions.
authentication		Revalidates EAPoUDP sessions for specific authentication types.
clientless		Specifies sessions authenticated using clientless posture validation.
eap		Specifies sessions authenticated using EAPoUDP.
static		Specifies sessions authenticated using statically configured exception lists.
interface ethernet <i>slot/port</i>		Revalidates the EAPoUDP sessions for a specific interface.
ip-address <i>ipv4-address</i>		Revalidates the EAPoUDP sessions for a specific IPv4 address.
mac-address <i>mac-address</i>		Revalidates the EAPoUDP sessions for a specific MAC address.
posturetoken <i>name</i>		Revalidates the EAPoUDP sessions for a specific posture token.

Defaults None

Command Modes Any command mode



Note

The NX-OS software supports an **eou revalidate** command in global configuration mode. To use an EXEC-level **eou revalidate** command in global configuration mode, include the required keywords.

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines You must use the **feature eou** command before you configure EAPoUDP.
This command does not require a license.

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Examples

This example shows how to revalidate all the EAPoUDP sessions:

```
switch# eou revalidate all
```

This example shows how to revalidate all the EAPoUDP sessions:

```
switch# eou revalidate authentication static
```

This example shows how to revalidate all the EAPoUDP sessions:

```
switch# eou revalidate interface ethernet 1/1
```

This example shows how to revalidate all the EAPoUDP sessions:

```
switch# eou revalidate ip-address 10.10.1.1
```

This example shows how to revalidate all the EAPoUDP sessions:

```
switch# eou revalidate mac-address 0019.076c.dac4
```

This example shows how to revalidate all the EAPoUDP sessions:

```
switch# eou revalidate posturetoken healthy
```

Related Commands

Command	Description
feature eou	Enables EAPoUDP.
show eou	Displays EAPoUDP information.

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eou revalidate (global configuration and interface configuration)

To enable automatic periodic revalidation of Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP) sessions globally or for a specific interface, use the **eou revalidate** command. To revert to the default, use the **no** form of this command.

eou revalidate

no eou revalidate

Syntax Description This command has no arguments or keywords.

Defaults Global configuration: Enabled
Interface configuration: Global configuration value

Command Modes Global configuration
Interface configuration

SupportedUserRoles network-admin
vdc-admin

Command History	Release	Modification
	4.0(1)	This command was introduced.

Usage Guidelines The automatic revalidation setting for an interface overrides the global setting for automatic revalidation.



Note The NX-OS software supports an **eou revalidate** command in EXEC configuration mode. To use an EXEC-level **eou revalidate** command in global configuration mode, include the required keywords.

You must use the **feature eou** command before you configure EAPoUDP.

This command does not require a license.

Examples This example shows how to disable global automatic revalidation of EAPoUDP sessions:

```
switch# config t
switch(config)# no eou revalidate
```

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This example shows how to enable global automatic revalidation of EAPoUDP sessions:

```
switch# config t
switch(config)# eou revalidate
```

This example shows how to disable automatic revalidation of EAPoUDP sessions for an interface:

```
switch# config t
switch(config)# no eou revalidate
```

This example shows how to enable automatic revalidation of EAPoUDP sessions for an interface:

```
switch# config t
switch(config)# eou revalidate
```

Related Commands

Command	Description
feature eou	Enables EAPoUDP.
eou timeout	Configures the timeout interval for EAPoUDP automatic periodic validation.
show eou	Displays EAPoUDP information.

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eou timeout

To configure timeout intervals for the global Extensible Authentication Protocol over User Datagram Protocol (EAPoUDP) timers or for the EAPoUDP timers for an interface, use the **eou timeout** command. To revert to the default, use the **no** form of this command.

```
eou timeout {aaa seconds | hold-period seconds | retransmit seconds | revalidation seconds | status-query seconds}
```

```
no eou timeout {aaa | hold-period | retransmit | revalidation | status-query}
```

Syntax Description		
aaa <i>seconds</i>	Specifies the AAA timeout interval. The range is from 0 to 60 seconds.	Note Setting the AAA timeout interval to zero (0) disables the AAA timer.
hold-period <i>seconds</i>	Specifies the hold timeout interval. The range is from 60 to 86400 seconds.	
retransmit <i>seconds</i>	Specifies the retransmit timeout interval. The range is from 1 to 60 seconds.	
revalidation <i>seconds</i>	Specifies the period automatic revalidation timeout interval. The range is from 5 to 86400 seconds.	
status-query <i>seconds</i>	Specifies the status query timeout interval. The range is from 10 to 1800 seconds.	

Defaults

Global AAA timeout interval: 60 seconds (1 minute)
 Global hold-period timeout: 180 seconds (3 minutes)
 Global retransmit timeout interval: 3 seconds
 Global revalidation timeout interval: 36000 seconds (10 hours)
 Global status query timeout interval: 300 seconds (5 minutes)
 Interface timeout intervals: Global configuration values

Command Modes

Global configuration
 Interface configuration

Supported User Roles

network-admin
 vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

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Usage Guidelines

The timeout interval values for the interface timers override the global timeout values.

You must use the **feature eou** command before you configure EAPoUDP.

This command does not require a license.

Examples

This example shows how to change the global AAA timeout interval:

```
switch# config t
switch(config)# eou timeout aaa 50
```

This example shows how to change the AAA timeout interval for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou timeout aaa 60
```

This example shows how to change the global hold-period timeout interval:

```
switch# config t
switch(config)# eou timeout hold-period 480
```

This example shows how to change the hold-period timeout interval for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou timeout hold-period 540
```

This example shows how to change the global retransmit timeout interval:

```
switch# config t
switch(config)# eou timeout retransmit 5
```

This example shows how to change the retransmit timeout interval for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou timeout retransmit 4
```

This example shows how to change the global revalidation timeout interval:

```
switch# config t
switch(config)# eou timeout revalidation 34000
```

This example shows how to change the revalidation timeout interval for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou timeout revalidation 30000
```

This example shows how to change the global status-query timeout interval:

```
switch# config t
switch(config)# eou timeout status-query 240
```

This example shows how to change the status-query timeout interval for an interface:

```
switch# config t
switch(config)# interface ethernet 1/1
switch(config-if)# eou timeout status-query 270
```

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Related Commands	Command	Description
	feature eou	Enables EAPoUDP.
	eou revalidate (global configuration)	Enables periodic automatic revalidation of endpoint devices.
	show eou	Displays EAPoUDP information.

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eq

To specify a single port as a group member in an IP port object group, use the **eq** command. To remove a single port group member from the port object group, use the **no** form of this command.

[sequence-number] **eq** *port-number*

no { *sequence-number* | **eq** *port-number* }

Syntax Description

<i>sequence-number</i>	(Optional) Sequence number for this group member. Sequence numbers maintain the order of group members within an object group. Valid sequence numbers are from 1 to 4294967295. If you do not specify a sequence number, the device assigns a number that is 10 greater than the largest sequence number in the current object group.
<i>port-number</i>	Port number that this group member matches. Valid port numbers are from 0 to 65535.

Defaults

None

Command Modes

IP port object group configuration

Supported User Roles

network-admin
vdc-admin

Command History

Release	Modification
4.0(1)	This command was introduced.

Usage Guidelines

IP port object groups are not directional. Whether an **eq** command matches a source or destination port or whether it applies to inbound or outbound traffic depends upon how you use the object group in an ACL.

This command does not require a license.

Examples

This example shows how to configure an IP port object group named port-group-05 with a group member that matches traffic sent to or from port 443:

```
switch# config t
switch(config)# object-group ip port port-group-05
switch(config-port-ogroup)# eq 443
```

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Related Commands	Command	Description
	gt	Specifies a greater-than group member in an IP port object group.
	lt	Specifies a less-than group member in an IP port object group.
	neq	Specifies a not-equal-to group member in an IP port object group.
	object-group ip port	Configures an IP port object group.
	range	Specifies a port-range group member in an IP port object group.
	show object-group	Displays object groups.

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