



# Configuring Unidirectional Ethernet

This chapter describes how to configure Unidirectional Ethernet on the Cisco Nexus 9000 series switches.

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## Unidirectional Ethernet (UDE) Overview

Unidirectional Ethernet uses only one strand of fiber for either transmitting or receiving one-way traffic, instead of two strands of fiber. Routing protocols support unidirectional links only if the unidirectional links emulate bidirectional links because routing protocols expect to send and receive traffic through the same interface.

With unidirectional links to either transmit or receive traffic effectively doubles the amount of traffic capabilities for applications, such as video streaming, where most traffic is sent as unacknowledged unidirectional video broadcast streams. You can use both the link from the source to the receiver and the equally high-capacity reverse-direction link, called the “back channel,” that carries the few acknowledgements from the receiver back to the source. You can create a unidirectional link by configuring ports equipped with bidirectional transceivers to unidirectionally transmit or receive traffic. You can use UDE when there is no appropriate unidirectional transceiver available. For example, without supported transmit-only transceivers, you must configure transmit-only links with software-based UDE.

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## Guidelines and Limitations for Unidirectional Ethernet

- UDE send-only is supported.
- UDE receive-only is not supported till Cisco NX-OS Release 10.1(1).
- Beginning with Cisco NX-OS Release 10.1(2), UDE receive-only is also supported.

- Beginning with Cisco NX-OS Release 10.1(2), UDE is supported on N9K-X9624D-R2, N9K-X9636Q-R, N9K-X9636C-RX, N9K-X96136YC-R, N9K-X9624D-R2, N9K-X9636C-R, Cisco Nexus 3636C-R, and Cisco Nexus 36180YC-R modules.
- UDE can be enabled on all ports simultaneously.
- UDE on breakout is supported from Cisco NX-OS Release 10.1(1) and later releases.
- UDE at hardware level is supported only on Cisco Nexus 9500 switches with X97160YC-EX line cards.
- UDE is supported only for native 10G-LR/10G-LRS transceivers, and cannot be used with QSAs or breakout cables.
- Beginning with Cisco NX-OS Release 10.1(1), UDE is supported on the N9K-C9336C-FX2, N9KC93240YC-FX2, N9K-C93180YC-FX, N9K-C93360YC-FX2 TORs and N9K-X97160YC-EX line card.
- Beginning with Cisco NX-OS Release 10.1(1), UDE supports the following transceivers: 10G-SR, 10G-AOC, 40G-SR, 40G-LR, 40G-AOC, 100G-SR, 100G-LR, and 100G-AOC.
- Port flap may occur when you configure UDE on a port.
- You can add physical interfaces with and without UDE configuration into a port-channel. However, you must ensure only send-only interfaces are added to a port-channel. UDE may not work as expected if you mix send-only configuration with other interfaces.
- The port-channel may not receive packets if all members are configured as UDE send-only.
- The port-channel may not receive packets if all members are configured as UDE send-only which can prevent LCAP based port-channel to come up.
- Special control plane traffic pruning is not configured on send-only ports.
- Unidirectional ports do not support any features or protocols that require negotiation with the port at the other end of the link. You must disable all features that require bi-directional communication.

## Configuring Unidirectional Ethernet

To configure unidirectional ethernet, follow these steps:

### SUMMARY STEPS

1. **configure terminal**
2. **interface ethernet {type slot /port}**
3. **unidirectional send-only**
4. **unidirectional receive-only**
5. **exit**
6. **show running-config interface {type slot /port}**
7. **copy running-config startup-config**

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure terminal</b> <b>Example:</b> <pre>switch# configure terminal switch(config)#</pre>	Enters global configuration mode.
<b>Step 2</b>	<b>interface ethernet {type slot /port}</b> <b>Example:</b> <pre>switch(config)# interface ethernet 3/1</pre>	Specifies an interface to configure, and enters interface configuration mode.
<b>Step 3</b>	<b>unidirectional send-only</b> <b>Example:</b> <pre>switch(config)# unidirectional send-only</pre>	Configures uni-directional transmit (send only) mode.  <b>Note</b> Configuring <b>receive-only</b> mode is not supported on Cisco NX-OS Release 9.3(3).
<b>Step 4</b>	<b>unidirectional receive-only</b> <b>Example:</b> <pre>switch(config)# unidirectional receive-only</pre>	Configures uni-directional transmit (receive only) mode.
<b>Step 5</b>	<b>exit</b> <b>Example:</b> <pre>switch(config)# exit</pre>	Exits interface mode.
<b>Step 6</b>	<b>show running-config interface {type slot /port}</b> <b>Example:</b> <pre>switch(config)# show running-config interface ethernet 3/1</pre>	Displays configuration information about the specified interface.
<b>Step 7</b>	<b>copy running-config startup-config</b> <b>Example:</b> <pre>switch(config)# copy running-config startup-config</pre>	Copies the running configuration to the startup configuration

