



## DSCP-Based Layer 3 Custom Applications

Network-Based Application Recognition (NBAR) supports the use of custom protocols to identify customer-specific applications and applications that NBAR does not support. IP address and port-based custom protocol includes supporting an IP subnet or a list of IP addresses with a specific TCP or UDP transport. DSCP-Based Layer 3 Custom Applications feature is an enhancement that enables the customer to identify traffic that belongs to Layer 3 or Layer 4 custom applications by using Differentiated Services Code Point (DSCP) values in the traffic.

- [Finding Feature Information, on page 1](#)
- [Restriction of DSCP-Based Layer 3 Custom Applications, on page 1](#)
- [DSCP-Based Layer 3 Custom Applications Overview, on page 2](#)
- [How to Configure NBAR2 Auto-learn, on page 2](#)
- [Configuration Examples for Configuring DSCP-Based Layer 3 Custom Applications, on page 3](#)
- [Additional References for DSCP-Based Layer 3 Custom Applications, on page 3](#)
- [Feature Information for DSCP-based Layer 3 Custom Applications, on page 4](#)

### Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see [Bug Search Tool](#) and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

### Restriction of DSCP-Based Layer 3 Custom Applications

DSCP-Based Layer 3 Custom Applications feature treats the Differentiated Services Code Point (DSCP) classification as a property of the flow and checks only the DSCP value of the first packet in the flow. To identify different packets in the flow and apply policies on them, use the **match dscp** command.

# DSCP-Based Layer 3 Custom Applications Overview

Network-Based Application Recognition (NBAR) supports the use of custom protocols to identify customer specific applications and applications that NBAR does not support. IP address and port-based custom protocol includes supporting an IP subnet or a list of IP addresses with a specific TCP or UDP transport. DSCP-based Layer 3 Custom Application feature is an enhancement that enables the customer to identify traffic that belongs to Layer 3 or Layer 4 custom applications by using Differentiated Services Code Point (DSCP) values in the traffic. You define a custom protocol transport by using the keywords and arguments of the **ip nbar custom transport** command.

## How to Configure NBAR2 Auto-learn

### Configuring DSCP-Based Layer 3 Custom Applications

#### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip nbar custom *name* transport {tcp | udp | udp-tcp }id *id***
4. **dscp *dscp-value***
5. **exit**

#### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b>  Device> enable	Enables privileged EXEC mode.  • Enter your password if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b>  Device# configure terminal	Enters global configuration mode.
<b>Step 3</b>	<b>ip nbar custom <i>name</i> transport {tcp   udp   udp-tcp }id <i>id</i></b> <b>Example:</b>  Device(config)# ip nbar custom mycustom transport tcp id 100	Specifies the transport protocol to match as TCP, UDP, or both TCP and UDP, and enters custom configuration mode.
<b>Step 4</b>	<b>dscp <i>dscp-value</i></b> <b>Example:</b>	Specifies the differentiated service code points (DSCP) value.

	Command or Action	Purpose
	Device(config-custom)# dscp ef	<b>Note</b> In cases where two custom applications have the same filters, the priority is set according to the order of configuration.
<b>Step 5</b>	<b>exit</b>  <b>Example:</b> Device(config-custom)# exit	Exits custom configuration mode.

## Configuration Examples for Configuring DSCP-Based Layer 3 Custom Applications

### Example: DSCP-Based Layer 3 Custom Applications

```
Device> enable
Device# configuration terminal
Device (config)# ip nbar custom mycustom transport tcp id 100
Device(config-custom)# dscp ef
Device (config-custom)# exit
```

### Example: L3 Custom any IP Port

```
Device> enable
Device# configuration terminal
Device (config)# ip nbar custom mycustom transport udp-tcp
Device(config-custom)# dscp ef
Device (config-custom)# exit
```

## Additional References for DSCP-Based Layer 3 Custom Applications

#### Related Documents

Related Topic	Document Title
Cisco IOS commands	<a href="#">Cisco IOS Master Commands List, All Releases</a>

Related Topic	Document Title
QoS commands: complete command syntax, command modes, command history, defaults, usage guidelines, and examples	<a href="#">Cisco IOS Quality of Service Solutions Command Reference</a>

### Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature Information for DSCP-based Layer 3 Custom Applications

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**Table 1:**

Feature Name	Releases	Feature Information
DSCP-based Layer 3 Custom Applications	15.5(2)T, 15.5(3)T	<p>NBAR supports the use of custom protocols to identify customer specific applications and applications that NBAR does not support. IP address and port-based custom protocol includes supporting an IP subnet or a list of IP addresses with a specific TCP or UDP transport. DSCP-based Layer 3 Custom Application feature is an enhancement that enables the customer to identify traffic that belongs to Layer 3 or Layer 4 custom applications by using DSCP values in the traffic.</p> <p>The following command was introduced or modified:</p> <p><b>ip nbar custom</b></p>

Feature Name	Releases	Feature Information
L3 custom any IP/Port	Cisco IOS XE 3.16S	<p>NBAR supports the use of custom protocols to identify customer specific applications and applications that NBAR does not support. IP address and port-based custom protocol includes supporting an IP subnet or a list of IP addresses with a specific TCP or UDP transport or TCP and UDP transport.</p> <p>DSCP-based Layer 3 Custom Application feature is an enhancement that enables the customer to identify traffic that belongs to Layer 3 or Layer 4 custom applications by using DSCP values in the traffic.</p> <p>The L3 Custom any IP/Port feature is an enhancement that enable users to to configure L3 or L4 custom applications over non UDP/TCP or over both UDP and TCP transport.</p> <p>The following command was introduced or modified:</p> <p><b>ip nbar custom</b></p>

