

Enabling NAT High-Speed Logging per VRF

The Enabling NAT High-Speed Logging Per VRF feature provides the ability to enable and disable Network Address Translation (NAT) high-speed logging (HAL) for virtual routing and forwarding (VRF) instances.

This module provides information about how to enable HSL for VRFs.

- Information About Enabling NAT High-Speed Logging per VRF, on page 1
- How to Configure Enabling NAT High-Speed Logging per VRF, on page 2
- Disabling High-Speed Logging of NAT Translations, on page 4
- Configuration Examples for Enabling NAT High-Speed Logging per VRF, on page 5
- Additional References for Enabling NAT High-Speed Logging per VRF, on page 5
- Feature Information for Enabling NAT High-Speed Logging per VRF, on page 6

Information About Enabling NAT High-Speed Logging per VRF

High-Speed Logging for NAT

Network Address Translation (NAT) supports high-speed logging (HSL) for upto 4 destinations. When HSL is configured, NAT provides a log of the packets flowing through the routing devices (similar to the Version 9 NetFlow-like records) to an external collector. Records are sent for each binding (binding is the address binding between the local address and the global address to which the local address is translated) and when sessions are created and destroyed. Session records contain the full 5-tuple of information (the source IP address, destination IP address, source port, destination port, and protocol). A tuple is an ordered list of elements. NAT also sends an HSL message when a NAT pool runs out of addresses (also called *pool exhaustion*). Because the pool exhaustion messages are rate limited, each packet that hits the pool exhaustion condition does not trigger an HSL message.

The table below describes the templates for HSL bind and session create or destroy.

Table 1: Template for HSL Bind and Session Create or Destroy

Field	Format	ID	Value
Source IP address	IPv4 address	8	varies
Translated source IP address	IPv4 address	225	varies

Field	Format	ID	Value
Destination IP address	IPv4 address	12	varies
Translated destination IP address	IPv4 address	226	varies
Original source port	16-bit port	7	varies
Translated source port	16-bit port	227	varies
Original destination port	16-bit port	11	varies
Translated destination port	16-bit port	228	varies
Virtual routing and forwarding (VRF) ID	32-bit ID	234	varies
Protocol	8-bit value	4	varies
Event	8-bit value	230	0-Invalid 1-Adds event 2-Deletes event
Unix timestamp in milliseconds	64-bit value	323	varies **Note** Based on your release version, this field will be available.

The table below describes the HSL pool exhaustion templates.

Table 2: Template for HSL Pool Exhaustion

Field	Format	ID	Values
NAT pool ID	32-bit value	283	varies
NAT event	8-bit value	230	3-Pool exhaust

How to Configure Enabling NAT High-Speed Logging per VRF

Enabling High-Speed Logging of NAT Translations

You can enable or disable high-speed logging (HSL) of all Network Address Translation (NAT) translations or only translations for specific VPNs.

You must first use the **ip nat log translations flow-export v9 udp destination** command to enable HSL for all VPN and non-VPN translations. . VPN translations are also known as Virtual Routing and Forwarding (VRF) translations.

After you enable HSL for all NAT translations, you can then use the **ip nat log translations flow-export v9** *vrf-name* command to enable or disable translations for specific VPNs. When you use this command, HSL is disabled for all VPNs, except for the ones the command is explicitly enabled.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip nat log translations flow-export v9 udp destination source** *interface type interface-number*
4. **ip nat log translations flow-export v9** {*vrf-name* | **global-on**}
5. **exit**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**ip nat log translations flow-export v9 udp destination source** *interface type interface-number* **Example:** This example shows how to enable high-speed logging using an IPv4 address `Device(config)# ip nat log translations flow-export v9 udp destination 10.10.0.1 1020 source GigabitEthernet 0/0/0`	
Step 4	**ip nat log translations flow-export v9** {*vrf-name* | **global-on**} **Example:** `Device(config)# ip nat log translations flow-export v9 VPN-18`	Enables or disables the high-speed logging of specific NAT VPN translations.
Step 5	**exit** **Example:** `Device(config)# exit`	(Optional) Exits global configuration mode and enters privileged EXEC mode.

Disabling High-Speed Logging of NAT Translations

You can disable high-speed logging (HSL) of all Network Address Translation (NAT) translations or only translations for specific VPNs.

To disable NAT Logging follow the below steps. The commands have to be in the order specified if vrf-logging is enabled.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **no ip nat log translations flow-export v9 vrf***vrf-name***on**
4. **no ip nat log translations flow-export v9udp destination** *ip-address vrf-source-name* **vrf** *vrf-destination-name*
5. **exit**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**no ip nat log translations flow-export v9 vrf***vrf-name***on** **Example:** This example shows how to disable high-speed logging using an IPv4 address `Device(config)# no ip nat log translations flow-export v9 vrf 1020 on`	
Step 4	**no ip nat log translations flow-export v9udp destination** *ip-address vrf-source-name* **vrf** *vrf-destination-name* **Example:** `Device(config)# no ip nat log translations flow-export v9 udp destination 10.10.0.1 1020 vrf 2030`	Disables the high-speed logging of specific NAT VPN translations.
Step 5	**exit** **Example:**	(Optional) Exits global configuration mode and enters privileged EXEC mode.

	Command or Action	Purpose
	`Device(config)# exit`	

Configuration Examples for Enabling NAT High-Speed Logging per VRF

Example: Enabling High-Speed Logging of NAT Translations

```
Device# configure terminal
Device(config)# ip nat log translations flow-export v9 udp destination 10.10.0.1 1020 source
 GigabitEthernet 0/0/0
Device(config)# ip nat log translations flow-export v9 VPN-18
Device(config)# exit
```

Additional References for Enabling NAT High-Speed Logging per VRF

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Command List, All Releases
NAT commands	Cisco IOS IP Addressing Services Command Reference

Standards and RFCs

Standard/RFC	Title

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.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for Enabling NAT High-Speed Logging per VRF

Table 3: Feature Information for Enabling NAT HIgh-Speed Logging per VRF

Feature Name	Releases	Feature Information
Enabling NAT High-Speed Logging per VRF	Cisco IOS XE Release 3.1S	The Enabling NAT High-Speed Logging per VRF feature provides the ability to enable and disable Network Address Translation (NAT) high-speed logging (HAL) for virtual routing and forwarding (VRF) instances. The following commands were introduced or modified: **ip nat log translations flow-export**.