



# EIGRP IWAN Simplification

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EIGRP is widely deployed on DMVPN networks. The EIGRP IWAN Simplification feature implements stub site behavior for EIGRP deployed on DMVPN networks.

- [Information About EIGRP IWAN Simplification, on page 1](#)
- [How to Configure EIGRP IWAN Simplification, on page 2](#)
- [Configuration Examples for EIGRP IWAN Simplification, on page 4](#)
- [Additional References for EIGRP IWAN Simplification, on page 4](#)
- [Feature Information for Overview of Cisco TrustSec, on page 4](#)

## Information About EIGRP IWAN Simplification

### Stub Site ID Configuration

The EIGRP Stub Routing feature improves network stability, reduces resource utilization, and simplifies the stub device configuration on the spoke. EIGRP Stub routing is commonly used over DMVPN networks having multiple sites with single device in each site. Site devices acting as stub result in reducing the query domain thereby enhancing improved performance. On the other hand, branch EIGRP routing is simple for a single router default-gateway site. When a the branch adds a second router or becomes larger and needs routing within the campus the configuration becomes complex.

The EIGRP IWAN Simplification feature implements stub site behavior on devices that are connected to the WAN interfaces on branch routing via the configuration of stub site ID on EIGRP address family. Use the **eigrp stub-site** command in the address family configuration mode. The stub site ID is applied to all incoming routes on WAN interfaces.



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**Note** The **eigrp stub-site** command is mutually exclusive with the **eigrp stub** command. You cannot execute both commands on a device. This **eigrp stub-site** command resets the peers on WAN interfaces and initiates relearning of routes from WAN neighbors.

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Interfaces connected towards hub or WAN are identified so that routes learnt through neighbors on such interfaces are part of a list of a given route. This is achieved via the **stub-site wan-interface** command configured in the address family interface configuration mode.



**Note** On the identified interfaces, neighbors treat WAN interfaces as stub.

# How to Configure EIGRP IWAN Simplification

## Configuring the Stub Site ID

### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router eigrp** *virtual-instance-name*
4. Enter one of the following:
  - **address-family ipv4** [**multicast**] [**unicast**] [**vrf vrf-name**] **autonomous-system** *autonomous-system-number*
  - **address-family ipv6** [**unicast**] [**vrf vrf-name**] **autonomous-system** *autonomous-system-number*
5. **network** *ip-address* [**wildcard-mask**]
6. **stub-site wan-interface**
7. **end**
8. **show ip eigrp vrf vrf-name topology** [*ip-address* [*mask*]]

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# configure terminal	Enters global configuration mode.
<b>Step 3</b>	<b>router eigrp</b> <i>virtual-instance-name</i> <b>Example:</b> Device(config)# router eigrp virtual-name1	Enables an EIGRP routing process and enters router configuration mode.
<b>Step 4</b>	Enter one of the following: <ul style="list-style-type: none"> <li>• <b>address-family ipv4</b> [<b>multicast</b>] [<b>unicast</b>] [<b>vrf vrf-name</b>] <b>autonomous-system</b> <i>autonomous-system-number</i></li> <li>• <b>address-family ipv6</b> [<b>unicast</b>] [<b>vrf vrf-name</b>] <b>autonomous-system</b> <i>autonomous-system-number</i></li> </ul>	Enters address family configuration mode to configure an EIGRP IPv4 or IPv6 routing instance.

	Command or Action	Purpose
	<b>Example:</b> Device(config-router)# address-family ipv4 autonomous-system 45000  Device(config-router)# address-family ipv6 autonomous-system 45000	
<b>Step 5</b>	<b>network</b> <i>ip-address</i> [ <b>wildcard-mask</b> ]  <b>Example:</b> Device(config-router-af)# network 172.16.0.0	Specifies the network address of the EIGRP distribution device.
<b>Step 6</b>	<b>stub-site wan-interface</b>  <b>Example:</b> Device(config-router-af-interface)# stub-site wan-interface	Specifies a stub site for the WAN interfaces.
<b>Step 7</b>	<b>end</b>  <b>Example:</b> Device(config-router-af-interface)# end	Exits the address family interface configuration mode and returns to privileged EXEC mode.
<b>Step 8</b>	<b>show ip eigrp vrf vrf-name topology</b> [ <i>ip-address</i> [ <i>mask</i> ]]  <b>Example:</b> Device# show ip eigrp vrf vrf1 topology 109.1.0.6/32	Displays VPN routing and forwarding (VRF) entries in the EIGRP topology table.

### Example

The following is a sample output from the **show ip eigrp vrf topology** command

```
Device# show ip eigrp vrf vrf1 topology 109.1.0.6/32

EIGRP-IPv4 Topology Entry for AS(1)/ID(109.1.0.2) VRF(vrf1)
EIGRP-IPv4(1): Topology base(0) entry for 109.1.0.6/32
  State is Passive, Query origin flag is 1, 1 Successor(s), FD is 2713600
  Descriptor Blocks:
    104.1.1.58 (Tunnell), from 104.1.1.1, Send flag is 0x0
      Composite metric is (2713600/1408256), route is Internal
      Vector metric:
        Minimum bandwidth is 100000 Kbit
        Total delay is 105000 microseconds
        Reliability is 255/255
        Load is 1/255
        Minimum MTU is 200
        Hop count is 2
        Originating router is 109.1.0.6
        Extended Community: StubSite:101:100
```

# Configuration Examples for EIGRP IWAN Simplification

## Example: Configuring the Stub Site ID

```

Device> enable
Device# configure terminal
Device(config)# router eigrp virtual-name1
Device(config-router)# address-family ipv4 autonomous-system 45000
Device(config-router-af)# network 172.16.0.0
Device(config-router-af)# eigrp stub-site 101:100
Device(config-router-af)# af-interface gigabitethernet 0/0/1
Device(config-router-af-interface)# stub-site wan-interface
Device(config-router-af-interface)# end

```

## Additional References for EIGRP IWAN Simplification

### Related Documents

Related Topic	Document Title
Cisco IOS commands	<a href="#">Cisco IOS Master Command List, All Releases</a>
EIGRP commands	<a href="#">Cisco IOS IP Routing: EIGRP 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 Overview of Cisco TrustSec

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 Information for Overview of Cisco TrustSec*

<b>Feature Name</b>	<b>Releases</b>	<b>Feature Information</b>
IPv6 enablement - Inline Tagging	Cisco IOS XE Fuji 16.8.1	The support for IPv6 is introduced.

