EIGRP IWAN Simplification

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

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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 http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

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.

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.

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. **eigrp stub-site**
7. **af-interface** *interface-type interface-number*}
8. **stub-site wan-interface**
9. **end**
10. **show ip eigrp vrf** *vrf-name* **topology** [*ip-address* [*mask*]]

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable**	Enables privileged EXEC mode.

	Command or Action	Purpose
	Example: `Device> enable`	• Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**router eigrp** *virtual-instance-name* **Example:** `Device(config)# router eigrp virtual-name1`	Enables an EIGRP routing process and enters router configuration mode.

Step 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*
	Example:
	`Device(config-router)# address-family ipv4 autonomous-system 45000`
	`Device(config-router)# address-family ipv6 autonomous-system 45000`
		Enters address family configuration mode to configure an EIGRP IPv4 or IPv6 routing instance.

Step 5	**network** *ip-address* [**wildcard-mask**] **Example:** `Device(config-router-af)# network 172.16.0.0`	Specifies the network address of the EIGRP distribution device.
Step 6	**eigrp stub-site** **Example:** `Device(config-router-af)# eigrp stub-site 101:100`	Specifies a stub site for the address family in the following formats: • ASN:nn • IP-address:nn • 4BASN:nn • aa:nn
Step 7	**af-interface** *interface-type interface-number*} **Example:** `Device(config-router-af)# af-interface gigabitethernet 0/0/1`	Enters address family interface configuration mode and configures interface-specific EIGRP commands.
Step 8	**stub-site wan-interface** **Example:** `Device(config-router-af-interface)# stub-site wan-interface`	Specifies a stub site for the WAN interfaces.

	Command or Action	Purpose
Step 9	**end** **Example:** `Device(config-router-af-interface)# end`	Exits the address family interface configuration mode and returns to privileged EXEC mode.
Step 10	**show ip eigrp vrf** *vrf-name* **topology** [*ip-address* [*mask*]] **Example:** `Device# show ip eigrp vrf vrf1 topology 10.1.0.6/32`	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 10.1.0.6/32

EIGRP-IPv4 Topology Entry for AS(1)/ID(10.1.0.2) VRF(vrf1)
EIGRP-IPv4(1): Topology base(0) entry for 10.1.0.6/32
  State is Passive, Query origin flag is 1, 1 Successor(s), FD is 2713600
  Descriptor Blocks:
  10.1.1.58 (Tunnel1), from 10.1.1.1, 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 10.1.0.6
      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	Command Reference Guides for Access and Edge Routers
EIGRP commands	Cisco IOS IP Routing: EIGRP Command Reference

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 EIGRP IWAN Simplification

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.

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