



## Per VRF for TACACS Servers

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The Per VRF for TACACS+ Servers feature allows per virtual route forwarding (per VRF) to be configured for authentication, authorization, and accounting (AAA) on TACACS+ servers.

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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 at the end of this module.

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.

## Prerequisites for Per VRF for TACACS Servers

- TACACS+ server access is required.
- Experience configuring TACACS+, AAA and per VRF AAA, and group servers is necessary.

# Restrictions for Per VRF for TACACS Servers

- The VRF instance must be specified before per VRF for a TACACS+ server is configured.

## Information About Per VRF for TACACS Servers

### Per VRF for TACACS Servers Overview

The Per VRF for TACACS+ Servers feature allows per VRF AAA to be configured on TACACS+ servers. Prior to Cisco IOS Release 12.3(7)T, this functionality was available only on RADIUS servers.

## How to Configure Per VRF for TACACS Servers

### Configuring Per VRF on a TACACS Server

The initial steps in this procedure are used to configure AAA and a server group, create a VRF routing table, and configure an interface. Steps 10 through 13 are used to configure the per VRF on a TACACS+ server feature:

#### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip vrf** *vrf-name*
4. **rd** *route-distinguisher*
5. **exit**
6. **interface** *interface-name*
7. **ip vrf forwarding** *vrf-name*
8. **ip address** *ip-address mask* [**secondary**]
9. **exit**
10. **aaa group server tacacs+** *group-name*
11. **server-private** {*ip-address | name*} [**nat**] [**single-connection**] [**port** *port-number*] [**timeout** *seconds*] [**key** [0 | 7] *string*]
12. **ip vrf forwarding** *vrf-name*
13. **ip tacacs source-interface** *subinterface-name*
14. **exit**

## DETAILED STEPS

|               | Command or Action   | Purpose  |
|---------------|---|--|
| <b>Step 1</b> | <b>enable</b><br><br><b>Example:</b><br>Router> 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><br><br><b>Example:</b><br>Router# configure terminal  | Enters global configuration mode.  |
| <b>Step 3</b> | <b>ip vrf vrf-name</b><br><br><b>Example:</b><br>Router (config)# ip vrf cisco  | Configures a VRF table and enters VRF configuration mode.  |
| <b>Step 4</b> | <b>rd route-distinguisher</b><br><br><b>Example:</b><br>Router (config-vrf)# rd 100:1                                     | Creates routing and forwarding tables for a VRF instance.  |
| <b>Step 5</b> | <b>exit</b><br><br><b>Example:</b><br>Router (config-vrf)# exit   | Exits VRF configuration mode.  |
| <b>Step 6</b> | <b>interface interface-name</b><br><br><b>Example:</b><br>Router (config)# interface Loopback0                            | Configures an interface and enters interface configuration mode.   |
| <b>Step 7</b> | <b>ip vrf forwarding vrf-name</b><br><br><b>Example:</b><br>Router (config-if)# ip vrf forwarding cisco                   | Configures a VRF for the interface.  |
| <b>Step 8</b> | <b>ip address ip-address mask [secondary]</b><br><br><b>Example:</b><br>Router (config-if)# ip address 10.0.0.2 255.0.0.0 | Sets a primary or secondary IP address for an interface.   |

|         | Command or Action  | Purpose  |
|---------|--|--|
| Step 9  | <b>exit</b><br><br><b>Example:</b><br>Router (config-if)# exit   | Exits interface configuration mode.  |
| Step 10 | <b>aaa group server tacacs+ <i>group-name</i></b><br><br><b>Example:</b><br>Router (config)# aaa group server tacacs+ tacacs1  | Groups different TACACS+ server hosts into distinct lists and distinct methods and enters server-group configuration mode. |
| Step 11 | <b>server-private {<i>ip-address</i>   <i>name</i>} [<b>nat</b>]<br/>           [<b>single-connection</b>] [<b>port</b> <i>port-number</i>] [<b>timeout</b> <i>seconds</i>]<br/>           [<b>key</b> [<b>0</b>   <b>7</b>] <i>string</i>]</b><br><br><b>Example:</b><br>Router (config-sg-tacacs+)# server-private 10.1.1.1<br>port 19 key cisco | Configures the IP address of the private TACACS+ server for the group server.  |
| Step 12 | <b>ip vrf forwarding <i>vrf-name</i></b><br><br><b>Example:</b><br>Router (config-sg-tacacs+)# ip vrf forwarding cisco   | Configures the VRF reference of a AAA TACACS+ server group.  |
| Step 13 | <b>ip tacacs source-interface <i>subinterface-name</i></b><br><br><b>Example:</b><br>Router (config-sg-tacacs+)# ip tacacs<br>source-interface Loopback0   | Uses the IP address of a specified interface for all outgoing TACACS+ packets.   |
| Step 14 | <b>exit</b><br><br><b>Example:</b><br>Router (config-sg-tacacs)# exit  | Exits server-group configuration mode.   |

## Verifying Per VRF for TACACS Servers

To verify the per VRF TACACS+ configuration, perform the following steps:



**Note** The **debug** commands may be used in any order.

**SUMMARY STEPS**

1. **enable**
2. **debug tacacs authentication**
3. **debug tacacs authorization**
4. **debug tacacs accounting**
5. **debug tacacs packets**

**DETAILED STEPS**

|               | <b>Command or Action</b>   | <b>Purpose</b>   |
|---------------|--|--|
| <b>Step 1</b> | <b>enable</b><br><br><b>Example:</b><br>Router> enable   | Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul> |
| <b>Step 2</b> | <b>debug tacacs authentication</b><br><br><b>Example:</b><br>Router# debug tacacs authentication | Displays information about AAA/TACACS+ authentication.   |
| <b>Step 3</b> | <b>debug tacacs authorization</b><br><br><b>Example:</b><br>Router# debug tacacs authorization   | Displays information about AAA/TACACS+ authorization.  |
| <b>Step 4</b> | <b>debug tacacs accounting</b><br><br><b>Example:</b><br>Router# debug tacacs accounting         | Displays information about accountable events as they occur.   |
| <b>Step 5</b> | <b>debug tacacs packets</b><br><br><b>Example:</b><br>Router# debug tacacs packets               | Displays information about TACACS+ packets.  |

# Configuration Examples for Per VRF for TACACS Servers

## Configuring Per VRF for TACACS Servers Example

The following output example shows that the group server **tacacs1** is configured for per VRF AAA services:

```
aaa group server tacacs+ tacacs1
  server-private 10.1.1.1 port 19 key cisco
  ip vrf forwarding cisco
  ip tacacs source-interface Loopback0
ip vrf cisco
  rd 100:1
interface Loopback0
  ip address 10.0.0.2 255.0.0.0
  ip vrf forwarding cisco
```

## Additional References

The following sections provide references related to Per VRF for TACACS+ Servers..

### Related Documents

| Related Topic       | Document Title                              |
|---------------------|---|
| Configuring TACACS+ | Configuring TACACS+ module.                 |
| Per VRF AAA         | Per VRF AAA module.                         |
| Security commands   | <i>Cisco IOS Security Command Reference</i> |

### Standards

| Standard  | Title |
|---|-------|
| No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature. | --    |

### MIBs

| MIB   | MIBs Link  |
|---|--|
| No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature. | To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:<br><a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a> |

**RFCs**

| RFC   | Title |
|---|-------|
| No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature. | --    |

**Technical Assistance**

| Description   | Link  |
|---|---|
| <p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p> | <a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a> |

## Feature Information for Per VRF for TACACS Servers

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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**Table 1: Feature Information for Per VRF for TACACS+ Servers**

| Feature Name                | Releases                                   | Feature Information   |
|-----------------------------|--|---|
| Per VRF for TACACS+ Servers | Cisco IOS 12.2(54)SG<br>Cisco IOS 15.2(1)E | <p>The Per VRF for TACACS+ Servers feature allows per virtual route forwarding (per VRF) to be configured for authentication, authorization, and accounting (AAA) on TACACS+ servers.</p> <p>The following commands were introduced or modified: <b>ip tacacs source-interface</b>, <b>ip vrf forwarding (server-group)</b>, <b>server-private (TACACS+)</b>.</p> |