



## VASI Commands on Cisco IOS XR Software

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This chapter describes the VRF-Aware Service Infrastructure (VASI) commands on Cisco IOS XR software commands. VASI refers to the capability to use services, such as those that run on an multiservice blade (MSB), within different VPN routing and forwarding instances (VRFs).

# interface vasi

To configure a VRF-Aware Service Infrastructure (VASI) interface and enter interface configuration mode, use the **interface vasi** command in global configuration mode. To delete a VASI configuration, use the **no** form of this command.

**interface { vasileft | vasiright } number**

Syntax Description	vasileft   vasiright	Specifies which VASI virtual interface to configure. You must configure both the vasileft and vasiright interfaces for a specific identifier before the interface can become active.
	number	Identifier of the VASI interface. Enter an integer from 1 to 65535.

**Defaults** No default behavior or values

**Command Modes** Global configuration

Command History	Release	Modification
	Release 3.5.0	This command was introduced on the multiservice blade (MSB) for the Cisco XR 12000 Series Router.
	Release 3.6.0	No modification.
	Release 3.7.0	No modification.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

The two halves of the interface pair are configured separately. It is possible to configure just one half, but this is of no use because the interface does not come up unless both halves are configured. The VASI virtual interface pair is tied to a physical location on the MSB using the **service-location preferred-active** command. The **service-location preferred-active** command can be configured on either of the interface halves, but if it is configured on both, the locations given must match exactly. If the **service-location preferred-active** command is not configured, both halves of the pair remain down.

Task ID	Task ID	Operations
	interface	read, write

**Examples** The following example shows how to configure a VASI interface:

```
RP/0/0/CPU0:router(config)# interface VASILeft 1
RP/0/0/CPU0:router(config-if)# vrf red
RP/0/0/CPU0:router(config-if)# ipv4 address 10.1.2.171 255.255.255.0
```

```
RP/0/0/CPU0:router(config-if)# service-location preferred-active 0/3/CPU0  
RP/0/0/CPU0:router(config-if)# exit  
RP/0/0/CPU0:router(config)# interface VASIRight 1  
RP/0/0/CPU0:router(config-if)# vrf green  
RP/0/0/CPU0:router(config-if)# ipv4 address 20.1.2.171 255.255.255.0
```

**Related Commands**

<b>Command</b>	<b>Description</b>
<a href="#">show interfaces vasi</a>	Displays information about a VRF-Aware Service Infrastructure (VASI) interface.
<a href="#">service-location</a>	Configures a physical interface on the multiservice blade (MSB) to be associated with a virtual firewall or virtual VASI interface.

# service-location

To configure a physical interface on the multiservice blade (MSB) to be associated with a virtual firewall or virtual VASI interface, use the **service-location** command in the appropriate configuration mode. To unassociate the physical interface, use the **no** form of this command.

**service-location preferred-active** *node-id* [**preferred-standby** *node-id*] [**auto-revert**]

**no service-location**

## Syntax Description

<b>preferred-active</b> <i>node-id</i>	Specifies the physical location of the MSB where the virtual firewall is located. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
<b>preferred-standby</b> <i>node-id</i>	(Optional) Specifies the physical location of the standby MSB where the virtual firewall is located. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
<b>auto-revert</b>	(Optional) Specifies that the virtual firewall will aggressively revert to the preferred active firewall, when the active node comes back up after a switchover.
<b>Note</b> Do not use <b>auto-revert</b> with more than 100 contexts in your configuration.	

## Defaults

No default behavior or values

## Command Modes

Firewall configuration  
VASI interface configuration

## Command History

Release	Modification
Release 3.5.0	This command was introduced on the multiservice blade (MSB) for the Cisco XR 12000 Series Router.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

## Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

To remove the service location from a configuration, you must first remove the default interface name. Removing the service location also removes the firewall configuration.

Use the **service-location** command to tie a VASI virtual interface pair to a physical location on the MSB. The **service-location** command can be configured on either of the interface halves, but if it is configured on both, the locations given must match exactly. If the **service-location** command is not configured, both halves of the pair remain down.

Task ID	Task ID	Operations
	firewall	read, write

### Examples

The following example shows how to create a firewall named “fw1” in Cisco IOS XR software and associate it with the physical location at 0/0/cpu0:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# firewall fw1
RP/0/0/CPU0:router(config-firewall)# service-location preferred-active 0/0/CPU0
preferred-standby 0/1/CPU0 auto-revert
```

The following example shows how to use the service-location command to enable a VASI interface:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# interface vasileft 1
RP/0/0/CPU0:router(config-if)# vrf red
RP/0/0/CPU0:router(config-if)# ipv4 address 10.1.2.171 255.255.255.0
RP/0/0/CPU0:router(config-if)# service-location preferred-active 0/0/CPU0
preferred-standby 0/1/CPU0 auto-revert
```

### Related Commands

Command	Description
<a href="#">default-interface-name</a>	Configures the default interface that represents any unprotected interface in the router.
<a href="#">failure-action</a>	Configures the action to take if a failure or misconfiguration occurs.
<a href="#">firewall</a>	Configures a virtual firewall in Cisco IOS XR software.
<a href="#">firewall (interface)</a>	Configures the firewall attachment.
<a href="#">interface vasi</a>	Configures a VASI interface and enters interface configuration mode.

# show interfaces vasi

To display information about a VRF-Aware Service Infrastructure (VASI) interface, use the **show interfaces vasi** command in EXEC mode.

```
show interfaces { vasileft | vasiright } number [accounting [rates] | brief | description | detail |
summary] [location node-id]
```

Syntax	Description
<b>vasileft   vasiright</b>	Specifies which VASI virtual interface to configure.
<i>number</i>	Identifier of the VASI interface. Enter an integer from 1 to 65535.
<b>accounting</b>	(Optional) Displays accounting information for all POS interfaces on the router, for a specific POS interface instance, or for all POS interfaces on a specific node.
<b>rates</b>	(Optional) Displays interface accounting rates for all POS interfaces on the router, for a specific POS interface instance, or for all POS interfaces on a specific node.
<b>brief</b>	(Optional) Displays brief output for all POS interfaces on the router, for a specific POS interface instance, or for all POS interfaces on a specific node.
<b>description</b>	Displays descriptive output for all POS interfaces on the router, for a specific POS interface instance, or for all POS interfaces on a specific node.
<b>detail</b>	(Optional) Displays detailed output for all POS interfaces on the router, for a specific POS interface instance, or for all POS interfaces on a specific node.
<b>location</b> <i>node-id</i>	(Optional) Displays detailed POS information for the designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
<b>summary</b>	(Optional) Displays summarized POS interface information.

**Defaults** No default behavior or values

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.5.0	This command was introduced on the multiservice blade (MSB) for the Cisco XR 12000 Series Router.
	Release 3.6.0	No modification.
	Release 3.7.0	No modification.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Task ID	Task ID	Operations
	interface	read, write

### Examples

The following example shows sample output from the **show interface vasileft** command:

```
RP/0/0/CPU0:router# show interface vasileft 1

VASIleft1 is up, line protocol is up
Interface state transitions: 2
Hardware is VASI Left interface(s)
Internet address is 35.35.35.35/24
MTU 9216 bytes, BW 10000000 Kbit
    reliability 255/255, txload 0/255, rxload 0/255
Encapsulation vasi, loopback not set,
```

The following example shows sample output from the **show interface vasileft** command with the brief keyword:

```
RP/0/5/CPU0:router# show interfaces vasileft 1 brief

          Intf      Intf      LineP      Encap      MTU      BW
          Name      State     State     Type (byte) (Kbps)
-----
          VL1       up        up         vasi  9216  1000000
```

[Table 1](#) describes the significant fields shown in the display.

**Table 1** *show interfaces vasi Field Descriptions*

Field	Description
Intf Name	Interface identifier, in the <i>type*rack/slot/module/port</i> notation.
Intf State	Indicates whether the interface is in the admin-up or admin down state.
LineP State	Line protocol state.
Encap Type	Encapsulation type for the specified interface: VASI.
MTU (byte)	Maximum transmission unit (MTU) value configured for the specified interface, in bytes.
BW (Kbps)	Bandwidth of the interface, in kbps.

### Related Commands

Command	Description
<a href="#">interface vasi</a>	Configures a VRF-Aware Service Infrastructure (VASI) interface and enters interface configuration mode.

# show services vasi status

To display the status of a VRF-Aware Service Infrastructure (VASI) interface pair, use the **show services vasi status** command in EXEC mode.

```
show services vasi status [vasileft number | vasiright number] [location node-id]
```

Syntax Description	Parameter	Description
	<b>vasileft</b>   <b>vasiright</b>	(Optional) Specifies which VASI virtual interface to configure.
	<i>number</i>	Identifier of the VASI interface. Enter an integer from 1 to 65535.
	<b>location</b> <i>node-id</i>	(Optional) Displays detailed POS information for the designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.

**Defaults** No default behavior or values

**Command Modes** EXEC

Command History	Release	Modification
	Release 3.5.0	This command was introduced on the multiservice blade (MSB) for the Cisco XR 12000 Series Router.
	Release 3.6.0	No modification.
	Release 3.7.0	No modification.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Task ID	Task ID	Operations
	interface	read, write

**Examples** The following example shows sample output from the **show services vasi status** command:

```
RP/0/0/CPU0:router# show services vasi status

Pair name  Active      Standby  LHS state  RHS state  Pair state
-----
VASIPair1  0/1/CPU0   -        Up         Up         Up
VASIPair2  -          -        Configured Unconfigured Need VASIRight2
VASIPair3  -          -        Configured Configured  Need location
VASIPair4  0/3/CPU0   -        Up         Admin Down VASIRight4 Down
VASIPair5  -          -        Configured Configured  Card(s) not up
```

Table 1 describes the significant fields shown in the display.

**Table 2** *show services vasi status Field Descriptions*

Field	Description
Pair Name	Name of the VASI interface pair.
Active	Physical location of the active MSB where the virtual firewall associated with the VASI interface pair is located.
Standby	Physical location of the standby MSB where the virtual firewall associated with the VASI interface pair is located.
LHS State	State of the vasileft interface. Possible values are as follows: Up—interface is properly configured and running. Configured—interface is configured. Admin down—interface is configured, but administratively down. Check the configuration and use the <b>no shutdown</b> command in the VASI interface submode. Unconfigured—interface is not configured.
RHS State	State of the vasiright interface. See <i>LHS State</i> above for possible values.
Pair State	State of the VASI interface pair. Possible values are as follows: Up—the VASI interface pair is operational. Need VASIRight2—the VASILeft interface is configured, but the VASIRight interface or location is not configured. Need location—VASIPair3 has VASILeft and VASIRight interfaces configured, but not a location. Reapply the location configuration and watch for errors. VASIRight4 Down—VASIPair4 has both the VASILeft and VASIRight configured, and a location configured, but VASIRight has been forced down. Check the configuration and use the <b>no shutdown</b> command in the VASIRight interface submode. Card(s) not up—VASIPair5 is fully configured, but the MSB where the service should be running is not in the “IOS XR RUN” state. Check the output of the show platform command and wait until the MSB is reported to be in the “IOS XR RUN” state.

■ `show services vasi status`