

VRRP Commands

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object (tracking)

To specify an object for a tracked list, use the **object** command in tracking configuration mode. To remove the object from the tracked list, use the **no** form of this command.

object *object-number* [**not**]
no object *object-number*

Syntax Description

object-number	Specifies the tracked object number in a tracked list. The range is from 1–1000.
not	(Optional) Negates the state of an object. **Note** The **not** keyword can be used in a Boolean list.

Command Default

The object isn't included in the tracked list.

Command Modes

Tracking configuration (config-track)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.7.1a	This command was introduced.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE object (tracking) command.

Examples

The following example shows two serial interfaces (objects) that are in tracked list 100. The Boolean "not" negates the state of object 2, resulting in the tracked list regarding object 2 as down when it's up:

```
Device(config)# track 1 interface serial2/0 line-protocol
Device(config-track)# exit
Device(config)# track 2 interface serial2/1 line-protocol
Device(config-track)# exit
Device(config)# track 100 list boolean and
Device(config-track)# object 1
Device(config-track)# object 2 not
```

track interface

To track an interface and to enter tracking configuration mode, use the **track interface** command in global configuration mode. To remove the tracking, use the **no** form of this command.

track *object-number* **interface** [**carrier-delay** | **delay** | **endpoint-tracker** | **interface** | **ip** | **ipv6** | **list** | **service** | **stub-object** | **threshold**] [**line-protocol** | **ip routing** | **ipv6 routing**]

no track *object-number*

Syntax Description

object-number	Specifies the object number that represents the interface to be tracked. The range is from 1–1000.
[carrier-delay | delay | endpoint-tracker | interface | ip | ipv6 | list | service | stub-object | threshold]	(Optional) Specifies the interface type to be tracked.
line-protocol	Tracks the state of the interface line protocol.
ip routing	Tracks whether IP routing is enabled, whether an IP address is configured on the interface, and whether the interface state is up before reporting to the tracking client that the interface is up.
ipv6 routing	Tracks whether IPv6 routing is enabled, whether an IPv6 address is configured on the interface, and whether the interface state is up before reporting to the tracking client that the interface is up.

Command Default

No interface is tracked.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.7.1a	This command was introduced.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE track interface command.

Examples

The following example shows how to configure the tracking process to track the IP-routing capability of serial interface 1/0:

```
Device(config)# track 1 interface serial1/0 ip routing
Device(config-track)# exit
```

The following example shows how to configure the tracking process to track the IPv6-routing capability of a GigabitEthernet interface 1/0/0:

```
Device(config)# track 1 interface GigabitEthernet 1/0/0 ipv6 routing
Device(config-track)# exit
```

The following example shows how to configure two tracker and adding them to the track list using the boolean 'and' operation:

```
Device# config-transaction
Device(config)# track 100 interface GigabitEthernet2 line-protocol
Device(config-track)# exit
Device(config)# track 200 interface GigabitEthernet3 line-protocol
Device(config-track)# exit
Device(config)# track 400 list boolean and
Device(config-track)# object 100
Device(config-track)# object 200
Device(config-track)# exit
```

track list

To specify a list of objects to be tracked and the thresholds to be used for comparison, use the **track list** command in global configuration mode. To disable the tracked list, use the **no** form of this command.

track *object-number* **list** {**boolean** {**and** | **or**} | **threshold** {**weight** | **percentage**}}
no track *object-number* **list** {**boolean** {**and** | **or**} | **threshold** {**weight** | **percentage**}}

Syntax Description

object-number	Object number of the object to be tracked. The range is from 1–1000.
boolean	State of the tracked list is based on a boolean calculation. The keywords are as follows: • **and** : Specifies that the list is “up” if all objects are up, or “down” if one or more objects are down. For example when tracking two interfaces, “up” means that both interfaces are up, and “down” means that either interface is down. • **or** : Specifies that the list is “up” if at least one object is up. For example, when tracking two interfaces, “up” means that either interface is up, and “down” means that both interfaces are down.
threshold	State of the tracked list is based on a threshold. The keywords are as follows: • **percentage** : Specifies that the threshold is based on a percentage. • **weight** : Specifies that the threshold is based on a weight.

Command Default

The object list is not tracked.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.7.1a	This command was introduced.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE track list command.

Examples

The following example shows how to configure a track list object to track two GigabitEthernet interfaces:

```
Device(config)# track 1 interface GigabitEthernet2 line-protocol
Device(config-tracker)# exit
Device(config)# track 2 interface GigabitEthernet3 line-protocol
Device(config-tracker)# exit
Device(config)# track 100 list boolean and
Device(config-tracker)# object 1
Device(config-tracker)# object 2
Device(config-tracker)# exit
```

The following configurations provide some hysteresis in case one of the serial interfaces is flapping.

The following example shows how to configure a track list object to track two serial interfaces when both serial interfaces are “up” and when either serial interface is “down”:

```
Device(config)# track 1 interface serial2/0 line-protocol
Device(config-track)# exit
Device(config)# track 2 interface serial2/1 line-protocol
Device(config-track)# exit
Device(config)# track 100 list boolean and
Device(config-track)# object 1
Device(config-track)# object 2
```

The following example shows how to configure a track list object to track two serial interfaces when either serial interface is “up” and when both serial interfaces are “down”:

```
Device(config)# track 1 interface serial2/0 line-protocol
Device(config-track)# exit
Device(config)# track 2 interface serial2/1 line-protocol
Device(config-track)# exit
Device(config)# track 101 list boolean or
Device(config-track)# object 1
Device(config-track)# object 2
```

The following example shows how to configure a track list object to track two serial interfaces when both serial interfaces are “up” and when both serial interfaces are “down,” for example:

```
Device(config)# track 1 interface serial2/0 line-protocol
Device(config-track)# exit
Device(config)# track 2 interface serial2/1 line-protocol
Device(config-track)# exit
Device(config)# track 102 threshold weight
Device(config-track)# object 1 weight 10
Device(config-track)# object 2 weight 10
Device(config-track)# threshold weight up 20 down 0
```

track (VRRP)

To enable an object to be tracked using a Virtual Router Redundancy Protocol version 3 (VRRPv3) group, use the **track** command in VRRP configuration mode. To disable the tracking, use the **no** form of this command.

track *object-number* { **shutdown** | [**decrement** *priority*] }
no track *object-number* **shutdown**

Syntax Description

object-number	Object number representing the interface to be tracked. The range is from 1–1000.
shutdown	Shuts down the VRRPv3 group.
decrement *priority*	Sets the priority value by which the VRRP group is reduced if the tracked object state on serial interface VRRPv3 goes down. The valid range is 1–255.

Command Default

Tracking an object using a VRRPv3 group isn't enabled.

Command Modes

VRRP configuration (config-if-vrrp)

Command History

Release	Modification
Cisco IOS XE Release Amsterdam 17.2.1v	Qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

For the usage guidelines, see track (VRRP).

Examples

The following example shows how to configure VRRPv3 group shutdown:

```
Device(config)# interface GigabitEthernet1
Device(config-if)# vrrp 2 address-family ipv4
Device(config-if-vrrp)# track 2 shutdown
```

The following example shows how to configure the tracking process to track the state of the IPv6 object using the VRRPv3 group. VRRP on GigabitEthernet interface 0/0/0 registers with the tracking process to be informed of any changes to the IPv6 object on the VRRPv3 group. If the IPv6 object state on serial interface VRRPv3 goes down, then the priority of the VRRP group is reduced by 20:

```
Device(config)# fhrp version vrrp v3
Device(config)# interface GigabitEthernet 0/0/0
Device(config-if)# vrrp 1 address-family ipv6
Device(config-if-vrrp)# track 1 decrement 20
```

The following example shows how to configure the tracking process to track the state of the IPv4 object. VRRP on GigabitEthernet2 registers with the tracking process to be informed of any changes to the IPv4 object. If the IPv4 object state on interface goes down, then the priority of the VRRP group is reduced by 10:

```
Device(config)# interface GigabitEthernet2
Device(config-if)# ip address 10.10.1.1 255.255.255.0
Device(config-if)# negotiation auto
Device(config-if)# vrrp 1 address-family ipv4
Device(config-if-vrrp)# address 10.10.1.10 primary
Device(config-if-vrrp)# track 400 decrement 10
```

```
Device(config-if-vrrp)# tloc-change increase-preference 1
Device(config-if-vrrp)# exit
```

track service

To configure track list and tracking for SIG containers, use the **track service** command in global configuration mode. To disable the configuration, use the **no** form of this command.

track *object-number* **service** *string*
no track *track-number* **service**

Syntax Description

string	(Optional)
object-number	Specifies the object number that represents the interface to be tracked. The range is from 1–1000.

Command Default

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.7.1a	This command was introduced.

Usage Guidelines

Examples

The following example shows how to configure track list and tracking for SIG containers:

```
Device(config)# track 1 service global
Device(config-track)# exit
Device(config)# track 2 service global
Device(config-track)# exit
Device(config)# track 3 list boolean and
Device(config-track)# object 100
Device(config-track)# object 200
Device(config-track)# exit
```

tloc-change increase-preference

To configure tloc-change preference value, use the **tloc-change increase-preference** command in VRRP interface configuration mode. To disable the configuration, use the **no** form of this command.

tloc-change increase-preference *value*
no tloc-change

Syntax Description

value	Specifies the TLOC change preference configuration under VRRP group. The value increases by one when a node becomes the primary node. Range: 1–4294967295.

Command Default

Command Modes

VRRP Interface configuration (config-if-vrrp)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.7.1a	This command was introduced.

Usage Guidelines

The default value for tloc-change increase-preference value is one.

We recommend that you use the same TLOC preference value for all TLOCs in a site. For a Cisco vEdge device, the default TLOC preference for the tunnel interface can be modified irrespective of whether VRRP is configured or not. However, if you want to use the VRRP tracking feature and utilize the advantage of TLOC preference values for VRRP tracking, ensure that the default tunnel preference is same on both the VRRP routers.

Examples

The following example shows how to configure TLOC change preference value:

```
Device(config)# interface GigabitEthernet2
Device(config-if)# vrf forwarding 1
Device(config-if)# ip address 10.10.1.1 255.255.255.0
Device(config-if)# negotiation auto
Device(config-if)# vrrp 1 address-family ipv4
Device(config-if-vrrp)# address 10.10.1.10 primary
Device(config-if-vrrp)# track 400 decrement 10
Device(config-if-vrrp)# tloc-change increase-preference 1
Device(config-if-vrrp)# exit
```

vrf forwarding

To associate a VRF instance or a virtual network with an interface or subinterface, use the **vrf forwarding** command in interface configuration mode. To disassociate a VRF or virtual network from an interface or subinterface, use the **no** form of this command.

vrf forwarding *vrf-name*
no vrf forwarding *vrf-name*

Syntax Description

vrf-name	The VRF name to be associated with the specified interface.

Command Default

The default for an interface is the global routing table.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Qualified for use in Cisco vManage CLI templates.

Usage Guidelines

For the usage guidelines, see vrf forwarding.

Examples

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# vrf forwarding vrf1
```

vrrp address-family

To create a VRRP group and to enter VRRP configuration mode, use the **vrrp address-family** command in interface configuration mode. To remove the VRRP group, use the **no** form of this command.

vrrp *group* **address-family** { **ipv4** | **ipv6** }
no vrrp *group* **address-family** { **ipv4** | **ipv6** }

Syntax Description

group	VRRP group number ranges from 1 to 255.
ipv4	Enter VRRP IPv4 address-family configuration.
ipv6	Enter VRRP IPv6 address-family configuration.

Command Default

None

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

Use the **vrrp address-family** command to create a VRRP group and to enter VRRP configuration mode. VRRP is the only FHRP (First Hop Redundancy Protocol) supported by Cisco Catalyst SD-WAN edge routers in controller mode. Once you create the group and specify the address-family, you can configure different settings for VRRP.

Examples

The following example creates and customizes VRRP group 3:

```
Device# config-transaction
Device(config)# int GigabitEthernet0/0/2
Device(config-if)# vrrp 3 address-family ipv4
```

Table 1: Related Commands

Command	Description
address primary (VRRP)	Configures a primary IP address for VRRP.