

Object Tracking Commands

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action

To configure a track to implement actions based on changes in the state of the track, use the **action** command in the track configuration mode. To delete the configuration of action tracking, use the **no** form of this command.

action {**track-up** | **track-down**} **error-disable interface** *interface-name* [**auto-recover**]
no action {**track-up** | **track-down**} **error-disable interface** *interface-name* [**auto-recover**]

Syntax Description

track-up	Configures action on the track when the track goes up.
track-down	Configures action on the track when the track goes down.
error-disable	Disables the specified interface when the track state changes.
interface *interface name*	Name of the interface to be disabled.
auto-recover	(Optional) Allows the interface that is error-disabled by object tracking to auto-recover. Autorecovery of the interface occurs when the track state changes to the pre-error-disabled state.

Command Default

No default behavior or values

Command Modes

Track configuration (config track)

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

To use the **action** command, you must be in a user group that is associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
sysmgr	read, write

This example shows how to configure the **action** command:

```
Router# configure
Router(config)# track t1
Router(config-track)# type route reachability route ipv4 192.2.0.1/24
Router(config)# action track-down error-disable interface GigabitEthernet 0/0/0/1 auto-recover
```

delay

To configure the delay, in seconds, before the track or interface state should be polled for a change in status, use the **delay** command in track configuration mode. To delete the configuration of delay tracking, use the **no** form of this command.

delay {**up** | **down**} *seconds*
no delay {**up** | **down**} [*seconds*]

Syntax Description

delay up	*seconds*	Sets delay of from 1 to 180 seconds before communication of up status of the tracked object or list of objects.
delay down	*seconds*	Sets delay of from 1 to 180 seconds before communication of down status of the tracked object or list of objects.

Command Default

No default behavior or values

Command Modes

Track configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

The **delay** command can be used in conjunction with all track types:

- type line-protocol state, on page 10
- type list boolean, on page 11
- type route reachability, on page 13

When using the **no** form of the command, the use of the *seconds* argument is optional.

Task ID

Task ID	Operations
sysmgr	read, write

The following example shows that the tracking process is configured to notify the network administrator that the interface should be polled for its up state in five-second intervals:

```
Router# configuration
Router(config)# track name1
Router(config-track)# delay up 5
```

interface (track)

To select an interface object type for tracking purposes, use the **interface** command in interface configuration mode. To delete the configuration of a track based on a particular interface object type, use the **no** form of this command.

interface *type interface-path-id*
no interface *type interface-path-id*

Syntax Description

type	(Optional) Interface type. For more information, use the question mark (?) online help function.
interface-path-id	(Optional) Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.

Command Default

No default behavior or values

Command Modes

Interface configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

To access the **interface** command, you must be in line protocol tracking configuration submode.

For information about interface keywords, see *Interface and Hardware Component Command Reference for Cisco 8000 Series Routers*.

Task ID

Task ID	Operations
sysmgr	read, write

The following example shows the **interface** command in the context of object tracking:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# track track12
RP/0/RP0/CPU0:router(config-track)# type line-protocol state
RP/0/RP0/CPU0:router(config-track-line-prot)# interface atm 0/2/0/0.1
```

line-protocol track

To associate a specific track with an IPsec or GRE interface object, use the **line-protocol track** command in interface configuration mode. To delete the association between the track and the IPsec or GRE interface object, use the **no** form of this command.

line-protocol track *object-name*
no line-protocol track *object-name*

Syntax Description

object-name	Name of object being tracked.

Command Default

No default behavior or values

Command Modes

Interface configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
sysmgr	read, write

The following example shows how the **line-protocol track** command is used:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# track PREFIX1
RP/0/RP0/CPU0:router(config-track)# type route reachability
RP/0/RP0/CPU0:router(config-track-route)# route ipv4 7.0.0.0/24
RP/0/RP0/CPU0:router(config-track-route)# interface service-ipsec 1
RP/0/RP0/CPU0:router(config-if)# vrf 1
RP/0/RP0/CPU0:router(config-if)# ipv4 address 70.0.0.2 255.25.255.0
RP/0/RP0/CPU0:router(config-if)# line-protocol track PREFIX1
```

object

To configure an object for tracking, use the **object** command in list tracking configuration mode. To delete a previously configured track based on an object, use the **no** form of this command.

object *object-name* [**not**]
no object *object-name*

Syntax Description

object-name	Name of the object to be tracked.
not	(Optional) Deletes a preivously configured track based on whether an interface object is not up or down.

Command Default

No default behavior or values

Command Modes

List tracking configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

To delete a previously configured track based on whether an interface object is *not* up or down, use the **not** keyword together with the **object** command in a list of tracked objects based on a Boolean expression.

The **object** command can be used only for a track based on a Boolean expression.

Task ID

Task ID	Operations
sysmgr	read, write

The following example shows how to configure an object, using the optional **not** keyword, in a tracked list of objects based on a Boolean calculation:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# track connection100
RP/0/RP0/CPU0:router(config-track-list)# type list boolean and
RP/0/RP0/CPU0:router(config-track-list)# object obj3 no
```

route ipv4

To configure that an IP prefix and subnet mask should be used as the basis to track route reachability, use the **route ipv4** command in route tracking configuration mode. To remove this configuration, use the **no** form of the command.

route ipv4 *IP prefix and subnet mask*
no route ipv4

Syntax Description

IP prefix and subnet mask	Network and subnet mask; for example, 10.56.8.10/16.

Command Default

No default behavior or values

Command Modes

Route tracking configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

The *IP prefix* and *subnet mask* arguments are optional for the **no** form of this command.

Task ID

Task ID	Operations
sysmgr	read, write

The following example displays use of the **route ipv4** command:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# track track22
RP/0/RP0/CPU0:router(config-track)# type route reachability
RP/0/RP0/CPU0:router(config-track-route)# route ipv4 10.56.8.10/16
```

show track

To display information about objects that were tracked and to specify the format of the report, use the **show track** command in EXEC mode.

show track [*track-name* | **interface** | **ipv4 route**] [**brief**]

Syntax Description

track-name	(Optional) Name of track used for tracking objects; for example, track1.
brief	(Optional) Displays a single line of information related to the preceding argument or keyword.
interface	(Optional) Displays tracked interface objects.
ipv4 route	(Optional) Displays the tracked IPv4 route objects.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Use the **show track** command to display information about objects that are tracked by the tracking process. When no arguments or keywords are specified, information for all objects is displayed.

Task ID

Task ID	Operations
sysmgr	read

The following sample output illustrates use of the **show track** command:

```
RP/0/RP0/CPU0:router# show track Track_name3

  Track_name3
          List boolean and is DOWN
          1 change, last change 10:26:20 SJC Sun Aug 05 2007
                  object name2 not UP
                  object name1 UP
```

track

To initiate or identify a tracking process used to track the status of an object or list of objects, use the **track** command in global configuration mode. To remove the tracking process, use the **no** form of this command.

track *track-name*
no track *track-name*

Syntax Description

track *track-name*	Name of track used for tracking objects; for example, track1. **Note** Special characters are not allowed in a *track-name*.

Command Default

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

When you use the **track** command, you enter track configuration mode.

Task ID

Task ID	Operations
sysmgr	read, write

This example shows that the tracking process is configured to notify the network administrator about the up state of the tracked object list every five seconds:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# track LIST2
RP/0/RP0/CPU0:router# track LIST2 delay up 5
```

type line-protocol state

To configure tracking of the line protocol state of an interface object, use the **type line-protocol** command in track configuration mode. To delete the configuration of line-protocol tracking, use the **no** form of this command.

type line-protocol state
no type line-protocol state

Command Default

No default behavior or values

Command Modes

Track configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

The **type line-protocol state** command can be used in conjunction with the **delay** command to configure the delay, in seconds, before the track or interface state should be polled for a change in its status.

The **type line-protocol state** command enters line-protocol tracking configuration mode.

Task ID

Task ID	Operations
sysmgr	read, write

This example shows how to use the **type line-protocol state** command:

```
Router# configure
Router(config)# track track12
Router(config-track)# type line-protocol state
```

type list boolean

To configure a tracked list of objects based on a Boolean calculation, use the **type list boolean** command in track configuration mode. To remove an object tracking list based on a Boolean calculation, use the **no** form of the command.

type list boolean {**and** | **or**}
no type list boolean {**and** | **or**}

Syntax Description

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.

Command Default

No default behavior or values

Command Modes

Track configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

The **type list boolean** command enters the list tracking configuration mode, and can be used in conjunction with the **delay** command to configure the delay, in seconds, before the track or interface state should be polled for a change in its status.

To remove a track based on whether an interface object is *not* up or down, use the **not** keyword together with the **object** command as shown in the example that follows.

Task ID

Task ID	Operations
sysmgr	read, write

This example shows how to use the **type list boolean** command in creating a list of objects to be tracked:

```
Router# configure
Router(config)# track LIST2
Router(config-track)# type list boolean and
Router(config-track-list)# object IPSec1 not
Router(config-track-list)# object IPSec2
Router(config-track-list)# object PREFIX1
Router(config-track-list)# exit
Router(config)# track IPSec1
Router(config-track)# type line-protocol state
```

```
Router(config-track-line-prot)# interface tengige 0/0/0/3
Router(config-track-line-prot)# exit
Router(config-track)# track IPSec2
Router(config-track)# type line-protocol state
Router(config-track-line-prot)# interface ATM0/2/0.1
Router(config-track-line-prot)# exit
Router(config)# track PREFIX1
Router(config-track)# type route reachability
Router(config-track-route)# route ipv4 7.0.0.0/24
Router(config-track-route)# exit
Router(config-track)# interface service-ipsec 1
Router(config-if)# vrf 1
Router(config-if)# ipv4 address 70.0.0.2 255.255.255.0
Router(config-if)# profile vrf_1_ipsec
Router(config-if)# line-protocol track LIST2
Router(config-if)# tunnel source 80.0.0.2
Router(config-if)# tunnel destination 80.0.0.1
Router(config-if)# service-location preferred-active 0/2/0
Router(config-if)# commit
```

type route reachability

To configure the routing process to notify the tracking process when the route state changes due to a routing update, use the **type route reachability** command in track configuration mode. To remove a track based on route reachability, use the **no** form of this command.

type route reachability
no type route reachability

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

Track configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

A tracked IP-route object is considered up and reachable when a routing-table entry exists for the route and the route is not inaccessible.

The **type route reachability** command can be used in conjunction with the **delay** command to configure the delay, in seconds, before the track or interface state should be polled for a change in its status.

The route reachability tracking process is based on either of the following, depending on your router type:

- **vrf**—A VRF table name.
- **route**—An IPv4 prefix consisting of the network and subnet mask (for example, 10.56.8.10/16).

Task ID

Task ID	Operations
sysmgr	read, write

This example shows how to track for route reachability:

```
Router# configure
Router(config)# track track22
Router(config-track)# type route reachability
```

type rtr

To configure the router to track the return code of IP service level agreement (SLA) operations, use the **type rtr** command in track configuration mode. To remove a track based on IP SLA return code, use the **no** form of this command.

type rtr *ipsla-no* **reachability**
no type rtr

Syntax Description

ipsla-no	IP SLA operation number. Values can range from 1 to 2048.
reachability	Tracks whether the route is reachable or not.

Command Default

None

Command Modes

Track configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

Use the **type rtr** command in conjunction with a configuration that uses:

- The

  track keyword in the **permit** command within an ACL definition. For example:

```
ipv4 access-list abf-track
  10 permit any any nexthop track track1 1.2.3.4
```

- An IP service level agreement configuration.

Task ID

Task ID	Operation
sysmgr	read, write

This example shows how to configure IPSLA object tracking:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# track track22
RP/0/RP0/CPU0:router(config-track)# type rtr 1 reachability
```

vrf (track)

To configure a VRF table to be used as the basis to track route reachability, use the **vrf** command in route tracking configuration mode. To delete the configuration of a VRF table for the purpose of IP route tracking purposes, use the **no** form of the command.

vrf *vrf-table-name*
no vrf [*vrf-table-name*]

Syntax Description

vrf-table-name	Network and subnet; for example, 10.56.8.10/16.

Command Default

No default behavior or values

Command Modes

Route tracking configuration

Command History

Release	Modification
Release 7.0.12	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
sysmgr	read, write

The following example displays the use of the **vrf** command:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# track track22
RP/0/RP0/CPU0:router(config-track)# type route reachability
RP/0/RP0/CPU0:router(config-track-route)# vrf vrf1
```