

# MCE Command Reference

This command reference is applicable to the following switches and software versions:

H3C S5560S-EI switch series (Release 6309P01 and later)

H3C S5560S-SI switch series (Release 6310 and later)

H3C S5500V3-SI switch series (Release 6310 and later)

H3C MS4520V2 switch series (MS4520V2-28S and MS4520V2-24TP switches) (Release 6310 and later)

H3C WS5850-WiNet switch series (Release 6308P01 and later)

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# Preface

This command reference describes MCE configuration commands.

This preface includes the following topics about the documentation:

- [Audience](#)
- [Conventions](#)
- [Documentation feedback](#)

## Audience

This documentation is intended for:

- Network planners.
- Field technical support and servicing engineers.
- Network administrators.

## Conventions

The following information describes the conventions used in the documentation.

### Command conventions

Convention	Description
<b>Boldface</b>	<b>Bold</b> text represents commands and keywords that you enter literally as shown.
<i>Italic</i>	<i>Italic</i> text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x   y   ... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[ x   y   ... ]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x   y   ... }*	Asterisk marked braces enclose a set of required syntax choices separated by vertical bars, from which you select a minimum of one.
[ x   y   ... ]*	Asterisk marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

### GUI conventions

Convention	Description
<b>Boldface</b>	Window names, button names, field names, and menu items are in Boldface. For example, the <b>New User</b> window opens; click <b>OK</b> .
>	Multi-level menus are separated by angle brackets. For example, <b>File &gt; Create &gt; Folder</b> .

## Symbols

Convention	Description
 <b>WARNING!</b>	An alert that calls attention to important information that if not understood or followed can result in personal injury.
 <b>CAUTION:</b>	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
 <b>IMPORTANT:</b>	An alert that calls attention to essential information.
<b>NOTE:</b>	An alert that contains additional or supplementary information.
 <b>TIP:</b>	An alert that provides helpful information.

## Network topology icons

Convention	Description
	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the access controller engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a wireless terminator unit.
	Represents a wireless terminator.
	Represents a mesh access point.
	Represents omnidirectional signals.
	Represents directional signals.
	Represents a security product, such as a firewall, UTM, multiservice security gateway, or load balancing device.
	Represents a security module, such as a firewall, load balancing, NetStream, SSL VPN, IPS, or ACG module.

## Examples provided in this document

Examples in this document might use devices that differ from your device in hardware model, configuration, or software version. It is normal that the port numbers, sample output, screenshots, and other information in the examples differ from what you have on your device.

# Documentation feedback

You can e-mail your comments about product documentation to [info@h3c.com](mailto:info@h3c.com).

We appreciate your comments.

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# MCE commands

## address-family ipv4 (VPN instance view)

Use **address-family ipv4** to enter VPN instance IPv4 address family view.

Use **undo address-family ipv4** to remove all configurations from VPN instance IPv4 address family view.

### Syntax

```
address-family ipv4
undo address-family ipv4
```

### Views

VPN instance view

### Predefined user roles

network-admin

### Usage guidelines

In VPN instance IPv4 address family view, you can configure IPv4 VPN parameters such as inbound and outbound routing policies.

### Examples

```
# Enter VPN instance IPv4 address family view.
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] address-family ipv4
[Sysname-vpn-ipv4-vpn1]
```

### Related commands

**address-family ipv6** (VPN instance view)

## description (VPN instance view)

Use **description** to configure a description for a VPN instance.

Use **undo description** to restore the default.

### Syntax

```
description text
undo description
```

### Default

No description is configured for a VPN instance.

### Views

VPN instance view

### Predefined user roles

network-admin

## Parameters

*text*: Specifies a description, a case-sensitive string of 1 to 79 characters.

## Examples

```
# Configure a description of This is vpn1 for VPN instance vpn1.
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] description This is vpn1
```

# display ip vpn-instance

Use **display ip vpn-instance** to display information about VPN instances.

## Syntax

```
display ip vpn-instance [ instance-name vpn-instance-name ]
```

## Views

Any view

## Predefined user roles

network-admin  
network-operator

## Parameters

**instance-name** *vpn-instance-name*: Displays information about the specified VPN instance. The *vpn-instance-name* argument is a case-sensitive string of 1 to 31 characters. If you do not specify a VPN instance, this command displays brief information about all VPN instances.

## Examples

```
# Display brief information about all VPN instances.
<Sysname> display ip vpn-instance
  Total VPN-Instances configured : 1
  VPN-Instance Name              RD              Create time
  abc                            1:1            2011/05/18 10:48:17
```

**Table 1 Command output**

Field	Description
VPN-Instance Name	Name of the VPN instance.
RD	RD of the VPN instance.
Create Time	Time when the VPN instance was created.

**Table 2 Command output**

Field	Description
Route Distinguisher	Route distinguisher of the VPN instance.
Interfaces	Interfaces that are associated with the VPN instance.
Address-family IPv4	IPv4 VPN information.
Address-family IPv6	IPv6 VPN information.
Export VPN Targets	Export route targets.

Field	Description
Import VPN Targets	Import route targets.
Export Route Policy	Routing policy in the outbound direction.
Import Route Policy	Routing policy in the inbound direction.
Maximum Routes Limit	Maximum number of routes.
Threshold Value(%)	Alarm threshold for number of active routes.

## export route-policy

Use `export route-policy` to apply an export routing policy to a VPN instance.

Use `undo export route-policy` to restore the default.

### Syntax

```
export route-policy route-policy
```

```
undo export route-policy
```

### Default

No export routing policy is applied to a VPN instance.

### Views

VPN instance view

VPN instance IPv4 address family view

VPN instance IPv6 address family view

### Predefined user roles

network-admin

### Parameters

*route-policy*: Specifies a routing policy by its name, a case-sensitive string of 1 to 63 characters.

### Usage guidelines

You can specify an export routing policy to filter advertised routes or modify their route attributes for the VPN instance.

If you execute this command multiple times, the most recent configuration takes effect.

An export routing policy specified in VPN instance view applies to both IPv4 VPN and IPv6 VPN. An export routing policy specified in VPN instance IPv4 address family view applies only to IPv4 VPN. An export routing policy specified in VPN instance IPv6 address family view applies only to IPv6 VPN.

If you have specified export routing policies in both VPN instance IPv4 address family view and VPN instance view, IPv4 VPN uses the export routing policy specified in VPN instance IPv4 address family view.

If you have specified export routing policies in both VPN instance IPv6 address family view and VPN instance view, IPv6 VPN uses the export routing policy specified in VPN instance IPv6 address family view.

### Examples

```
# Apply export routing policy poly-1 to VPN instance vpn1.
```

```
<Sysname> system-view
```

```
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] export route-policy poly-1
```

## Related commands

```
import route-policy
route-policy (Layer 3—IP Routing Command Reference)
```

# import route-policy

Use **import route-policy** to apply an import routing policy to a VPN instance.

Use **undo import route-policy** to restore the default.

## Syntax

```
import route-policy route-policy
undo import route-policy
```

## Default

All routes matching the import target attribute are accepted.

## Views

VPN instance view  
VPN instance IPv4 address family view  
VPN instance IPv6 address family view

## Predefined user roles

network-admin

## Parameters

*route-policy*: Specifies a routing policy by its name, a case-sensitive string of 1 to 63 characters.

## Usage guidelines

You can specify an import routing policy to filter received routes or modify their route attributes for the VPN instance.

If you execute this command multiple times, the most recent configuration takes effect.

An import routing policy specified in VPN instance view applies to both IPv4 VPN and IPv6 VPN. An import routing policy specified in VPN instance IPv4 address family view applies only to IPv4 VPN. An import routing policy specified in VPN instance IPv6 address family view applies only to IPv6 VPN.

If you have specified import routing policies in both VPN instance IPv4 address family view and VPN instance view, IPv4 VPN uses the import routing policy specified in VPN instance IPv4 address family view.

If you have specified import routing policies in both VPN instance IPv6 address family view and VPN instance view, IPv6 VPN uses the import routing policy specified in VPN instance IPv6 address family view.

## Examples

```
# Apply import routing policy poly-1 to VPN instance vpn1.
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] import route-policy poly-1
```

## Related commands

`export route-policy`

`route-policy` (*Layer 3—IP Routing Command Reference*)

## ip binding vpn-instance

Use `ip binding vpn-instance` to associate an interface with a VPN instance.

Use `undo ip binding vpn-instance` to restore the default.

### Syntax

`ip binding vpn-instance vpn-instance-name`

`undo ip binding vpn-instance`

### Default

An interface is associated with no VPN instance and belongs to the public network.

### Views

Interface view

### Predefined user roles

network-admin

### Parameters

*vpn-instance-name*: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters.

### Usage guidelines

Use this command to associate the VPN instance with the interface connected to the CE.

This command or its undo form clears the IP address and routing protocol configuration on the interface.

The specified VPN instance must have been created by using the `ip vpn-instance` command in system view.

To associate a new VPN instance with an interface, first execute the `undo ip binding vpn-instance` command to remove the existing association.

### Examples

# Associate VLAN-interface 1 with VPN instance **vpn1**.

```
<Sysname> system-view
```

```
[Sysname] interface vlan-interface 1
```

```
[Sysname-Vlan-interface1] ip binding vpn-instance vpn1
```

### Related commands

`ip vpn-instance` (system view)

## ip vpn-instance (system view)

Use `ip vpn-instance` to create a VPN instance and enter its view, or enter the view of an existing VPN instance.

Use `undo ip vpn-instance` to delete a VPN instance.

## Syntax

```
ip vpn-instance vpn-instance-name  
undo ip vpn-instance vpn-instance-name
```

## Default

No VPN instances exist.

## Views

System view

## Predefined user roles

network-admin

## Parameters

*vpn-instance-name*: Specifies a VPN instance name, a case-sensitive string of 1 to 31 characters.

## Examples

```
# Create a VPN instance named vpn1 and enter its view.  
<Sysname> system-view  
[Sysname] ip vpn-instance vpn1  
[Sysname-vpn-instance-vpn1]
```

## Related commands

**route-distinguisher**

# route-distinguisher (VPN instance view)

Use **route-distinguisher** to configure an RD for a VPN instance.

Use **undo route-distinguisher** to restore the default.

## Syntax

```
route-distinguisher route-distinguisher  
undo route-distinguisher
```

## Default

No RD is specified for a VPN instance.

## Views

VPN instance view

## Predefined user roles

network-admin

## Parameters

*route-distinguisher*: Specifies an RD for the VPN instance, a string of 3 to 21 characters in one of the following formats:

- *16-bit AS number:32-bit user-defined number*. For example, 101:3.
- *32-bit IP address:16-bit user-defined number*. For example, 192.168.122.15:1.
- *32-bit AS number:16-bit user-defined number*, where the minimum value of the AS number is 65536. For example, 65536:1.

## Usage guidelines

RDs enable VPNs to use the same address space. An RD and an IPv4 prefix form a unique VPN-IPv4 prefix.

To guarantee global uniqueness for a VPN-IPv4 address, do not set the AS number or IP address in an RD to any private AS number or private IP address.

To modify an RD, execute the **undo route-distinguisher** command to remove the RD and then execute the **route-distinguisher** command.

## Examples

```
# Configure RD 22:1 for VPN instance vpn1.
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] route-distinguisher 22:1
```

## routing-table limit

Use **routing-table limit** to set the maximum number of active routes in a VPN instance.

Use **undo routing-table limit** to restore the default.

## Syntax

```
routing-table limit number { warn-threshold | simply-alert }
undo routing-table limit
```

## Default

The number of active routes in a VPN instance is not limited.

## Views

VPN instance view  
VPN instance IPv4 address family view  
VPN instance IPv6 address family view

## Predefined user roles

network-admin

## Parameters

*number*: Specifies the maximum number of active routes. In VPN instance view, the value range for this argument is 1 to 3072. In VPN instance IPv4 address family view, the value range for this argument is 1 to 12288. In VPN instance IPv6 address family view, the value range for this argument is 1 to 3072.

*warn-threshold*: Specifies a warning threshold in the range of 1 to 100 in percentage. When the percentage of the existing active routes to the maximum active routes exceeds the threshold, the system gives a log message but still allows new active routes. If active routes in the VPN instance reach the maximum, no more active routes are added.

**simply-alert**: Specifies that when active routes exceed the maximum number, the system still accepts active routes but generates a log message.

## Usage guidelines

Setting the maximum number of active routes for a VPN instance can prevent a PE from learning too many routes.

A limit configured in VPN instance view applies to both the IPv4 VPN and the IPv6 VPN. A limit configured in VPN instance IPv4 address family view applies only to the IPv4 VPN. A limit configured in VPN instance IPv6 address family view applies only to the IPv6 VPN.

If you have specified the limit in both VPN instance IPv4 address family view and VPN instance view, IPv4 VPN uses the limit specified in VPN instance IPv4 address family view.

If you have specified the limit in both VPN instance IPv6 address family view and VPN instance view, IPv6 VPN uses the limit specified in VPN instance IPv6 address family view.

## Examples

# Specify that VPN instance **vpn1** supports a maximum of 1000 active routes. When active routes exceed this limit, the device can receive new active routes but generates a log message.

```
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] route-distinguisher 100:1
[Sysname-vpn-instance-vpn1] routing-table limit 1000 simply-alert
```

## vpn-id

Use **vpn-id** to configure a VPN ID for a VPN instance.

Use **undo vpn-id** to restore the default.

### Syntax

```
vpn-id vpn-id
undo vpn-id
```

### Default

No VPN ID is configured for a VPN instance.

### Views

VPN instance view

### Predefined user roles

network-admin

### Parameters

*vpn-id*: Specifies a VPN ID for the VPN instance, in the form of OUI:Index. The OUI is a hexadecimal number in the range of 0 to FFFFFFFF, and the index is a hexadecimal number in the range of 0 to FFFFFFFF.

### Usage guidelines

A VPN ID uniquely identifies a VPN instance. Different VPN instances must have different VPN IDs.

A VPN ID cannot be 0:0.

## Examples

# Configure VPN ID 20:1 for VPN instance **vpn1**.

```
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] vpn-id 20:1
```

### Related commands

```
display ip vpn-instance
```

## vpn-instance-capability simple (OSPF view)

Use **vpn-instance-capability simple** to disable routing loop detection for a VPN OSPF process.

Use **undo vpn-instance-capability** to enable routing loop detection for a VPN OSPF process.

### Syntax

```
vpn-instance-capability simple
```

```
undo vpn-instance-capability
```

### Default

Routing loop detection is enabled for a VPN OSPF process.

### Views

OSPF view

### Predefined user roles

network-admin

### Usage guidelines

For the MCE to receive OSPF routes from the PE, you must disable routing loop detection for a VPN OSPF process on the MCE.

This command is applicable only to VPN OSPF processes.

### Examples

```
# Disable routing loop detection for VPN OSPF process 100.
```

```
<Sysname> system-view
```

```
[Sysname] ospf 100 vpn-instance vpna
```

```
[Sysname-ospf-100] vpn-instance-capability simple
```

## vpn-target

Use **vpn-target** to configure route targets for a VPN instance.

Use **undo vpn-target** to remove the specified or all route targets of a VPN instance.

### Syntax

```
vpn-target    vpn-target&<1-8>    [ both | export-extcommunity |  
import-extcommunity ]
```

```
undo vpn-target { all | vpn-target&<1-8> [ both | export-extcommunity |  
import-extcommunity ] }
```

### Default

No route targets are configured for a VPN instance.

### Views

VPN instance view

VPN instance IPv4 address family view

VPN instance IPv6 address family view

## Predefined user roles

network-admin

## Parameters

`vpn-target`<1-8>: Specifies a space-separated list of up to eight route targets.

A route target is a string of 3 to 21 characters in one of the following formats:

- *16-bit AS number:32-bit user-defined number*. For example, 101:3.
- *32-bit IP address:16-bit user-defined number*. For example, 192.168.122.15:1.
- *32-bit AS number:16-bit user-defined number*, where the AS number must not be less than 65536. For example, 65536:1.

**both**: Uses the specified route targets as both import targets and export targets. The **both** keyword is also used when you do not specify any of the following keywords: **both**, **export-extcommunity**, and **import-extcommunity**.

**export-extcommunity**: Uses the specified route targets as export targets.

**import-extcommunity**: Uses the specified route targets as import targets.

**all**: Removes all route targets.

## Usage guidelines

MPLS L3VPN uses route targets to control the advertisement of VPN routing information. A PE adds the configured export targets into the route target attribute of routes advertised to a peer. The peer uses the local import targets to match the route targets of received routes. If a match is found, the peer adds the routes to the routing table of the VPN instance.

If you repeat this command, all the configured route targets take effect.

Route targets configured in VPN instance view apply to both the IPv4 VPN and the IPv6 VPN. Route targets configured in VPN instance IPv4 address family view apply only to the IPv4 VPN. Route targets configured in VPN instance IPv6 address family view apply only to the IPv6 VPN.

IPv4 VPN prefers the route targets configured in VPN instance IPv4 address family view over those configured in VPN instance view.

IPv6 VPN prefers the route targets configured in VPN instance IPv6 address family view over those configured in VPN instance view.

## Examples

# Configure route targets for VPN instance **vpn1**.

```
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] vpn-target 3:3 export-extcommunity
[Sysname-vpn-instance-vpn1] vpn-target 4:4 import-extcommunity
[Sysname-vpn-instance-vpn1] vpn-target 5:5 both
```

# IPv6 MCE commands

This chapter describes only IPv6 MCE-specific commands. For information about the commands available for both IPv4 MCE and IPv6 MCE, see "[MCE commands](#)."

## address-family ipv6 (VPN instance view)

Use **address-family ipv6** to enter VPN instance IPv6 address family view.

Use **undo address-family ipv6** to remove all configurations from VPN instance IPv6 address family view.

### Syntax

```
address-family ipv6
undo address-family ipv6
```

### Views

VPN instance view

### Predefined user roles

network-admin

### Usage guidelines

In VPN instance IPv6 address family view, you can configure IPv6 VPN parameters such as inbound and outbound routing policies.

### Examples

```
# Enter VPN instance IPv6 address family view.
<Sysname> system-view
[Sysname] ip vpn-instance vpn1
[Sysname-vpn-instance-vpn1] address-family ipv6
[Sysname-vpn-ipv6-vpn1]
```

### Related commands

**address-family ipv4** (VPN instance view)

## vpn-instance-capability simple (OSPFv3 view)

Use **vpn-instance-capability simple** to disable routing loop detection for a VPN OSPFv3 process.

Use **undo vpn-instance-capability** to enable routing loop detection for a VPN OSPFv3 process.

### Syntax

```
vpn-instance-capability simple
undo vpn-instance-capability
```

### Default

Routing loop detection is enabled for a VPN OSPFv3 process.

### Views

OSPFv3 view

## Predefined user roles

network-admin

## Usage guidelines

For the MCE to receive OSPFv3 routes from the PE, you must disable routing loop detection for a VPN OSPFv3 process on the MCE.

This command is applicable only to VPN OSPFv3 processes.

## Examples

# Disable routing loop detection for VPN OSPFv3 process 100.

```
<Sysname> system-view
```

```
[Sysname] ospfv3 100 vpn-instance vpn1
```

```
[Sysname-ospfv3-100] vpn-instance-capability simple
```