



## V Commands

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# virtual ip

To configure the virtual IPv4 address of an Intelligent Traffic Director (ITD) service, use the `virtual ip` command. To remove the virtual IPv4 address, use the `no` form of this command.

**virtual ip** *ipv4-address ipv4-network-mask* [**tcp** | **udp** {*port-number* | **any**}] [**advertise** {**enable** | **disable**}]

**no virtual ip** *ipv4-address ipv4-network-mask* [**tcp** | **udp** {*port-number* | **any**}] [**advertise** {**enable** | **disable**}]

## Syntax Description

|                          |   |
|--------------------------|---|
| <i>ipv4-address</i>      | Virtual IPv4 address, in A.B.C.D format.  |
| <i>ipv4-network-mask</i> | Virtual IP network mask, in m.m.m.m format.   |
| <b>tcp</b>               | (Optional) Allows the virtual IP address to accept flows from Transmission Control Protocol (TCP) connections only. |
| <b>udp</b>               | (Optional) Allows the virtual IP address to accept flows from User Datagram Protocol (UDP) connections only.        |
| <i>port-number</i>       | Port number of the protocol. The range is from 0 to 65535.  |
| <b>any</b>               | <b>Allows the virtual IPv4 address to accept flows destined to any port.</b>  |
| <b>advertise enable</b>  | (Optional) Specifies that the virtual IP route is advertised to neighboring devices.                                |
| <b>advertise disable</b> | (Optional) Specifies that the virtual IP route is not advertised to neighboring devices.                            |

## Command Default

None.

## Command Modes

ITD configuration (config-itd)  
network-adminvdc-admin

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 6.2(8)  | This command was introduced. |

## Usage Guidelines

You must ensure that ITD is enabled before you enter this command. You can enter the **feature itd** global configuration mode command to enable ITD.

A virtual IP address (VIP) is an IP address assigned to multiple servers that are part of a device group, rather than being assigned to a specific single server or network interface card. Incoming data packets that are sent to the VIP address, are routed to actual servers from the Cisco Nexus 7000 Series device. Single or multiple VIPs can be configured as part of an ITD service. You can also specify a wildcard mask for a VIP address.



### Note

The VIP has to be in a different subnet than the server IP.

The **virtual ip ip-address ip-network-mask advertise enable** command creates a route on the device that is advertised to neighboring routers. Those routers forward packets that are destined to the VIP to the ingress interface on the Cisco Nexus 7000 Series device.

In some instances, it is not feasible to configure all the VIP TCP or UDP port numbers. You can use the **any** keyword to allow the VIP to accept flows destined to any port.



### Note

Before modifying the service parameters or device-group parameters, you must enter the **shutdown** command. Once the required parameters are modified, you should enter the **no shutdown** command on the service.

This command requires the Enhanced Layer 2 Package license.

## Examples

These examples show how to configure a VIP:

```
switch(config)# feature itd
switch(config)# itd device-group dg
switch(config-device-group)# node ip 20.20.20.3
switch(config-device-group)# node ip 20.20.20.4
switch(config-device-group)# node ip 20.20.20.5
switch(config-device-group)# probe icmp
switch(config-device-group)# exit
switch(config)# itd test1
switch(config-itd)# device-group dg
switch(config-itd)# ingress interface Ethernet 4/1-10
switch(config-itd)# virtual ip 4.4.4.4 255.255.0.0 tcp any advertise enable
```

```
switch(config)# feature itd
switch(config)# itd device-group dg
switch(config-device-group)# node ip 1.1.1.1
switch(config-device-group)# node ip 1.1.1.2
switch(config-device-group)# node ip 1.1.1.3
switch(config-device-group)# node ip 1.1.1.4
switch(config-device-group)# exit
```

```
switch(config)# itd test2
switch(config-itd)# device-group dg
switch(config-itd)# virtual ip 11.22.33.44 255.255.255.255 tcp any
switch(config-itd)# virtual ip 11.22.33.55 255.255.0.0
switch(config-itd)# ingress interface Eth4/15
switch(config-itd)# no shutdown
```

**Related Commands**

| Command                  | Description   |
|--------------------------|---|
| <b>device-group</b>      | Adds an existing device group to an ITD service.                    |
| <b>feature itd</b>       | Enables the ITD service on the switch.                              |
| <b>ingress-interface</b> | Adds an ingress interface or multiple interfaces to an ITD service. |
| <b>itd</b>               | Configures an ITD service.  |
| <b>itd device-group</b>  | Creates an ITD device group.  |
| <b>node ip</b>           | Creates an IPv4 cluster node for ITD.                               |
| <b>node ipv6</b>         | Creates an IPv6 cluster node for ITD.                               |
| <b>probe</b>             | Configures the cluster group service probe for ITD.                 |
| <b>virtual ipv6</b>      | Configures the virtual IPv6 address of an ITD service.              |

## virtual ipv6

To configure the virtual IPv6 address of an Intelligent Traffic Director (ITD) service, use the `virtual ipv6` command. To remove the virtual IPv6 address, use the `no` form of this command.

**virtual ipv6** *ipv6-address* {*ipv6-network-mask*| *ipv6-prefix/length*} [**ip** **tcp** {*port-number*| **any**}| **udp** {*port-number*| **any**}] [**advertise** {**enable**| **disable**}]

**no virtual ipv6** *ipv6-address* {*ipv6-network-mask*| *ipv6-prefix/length*} [**ip** **tcp** {*port-number*| **any**}| **udp** {*port-number*| **any**}] [**advertise** {**enable**| **disable**}]

### Syntax Description

|                           |   |
|---------------------------|---|
| <i>ipv6-address</i>       | Virtual IPv6 address, in A:B::C:D format.   |
| <i>ipv6-network-mask</i>  | Virtual IPv6 network mask, in A:B::C:D format.  |
| <i>ipv6-prefix/length</i> | IPv6 prefix length. The range is from 0 to 128.   |
| <b>ip</b>                 | (Optional) Performs load balancing for IP connections only.   |
| <b>tcp</b>                | (Optional) Allows the virtual IPv6 address to accept flows from the Transmission Control Protocol (TCP) connections only. |
| <i>port-number</i>        | Port number of the protocol. The range is 0-65535.  |
| <b>udp</b>                | (Optional) Allows the virtual IPv6 address to accept flows from the User Datagram Protocol (UDP) connections only.        |
| <b>any</b>                | Allows the virtual IPv6 address to accept flows destined to any port.   |
| <b>advertise enable</b>   | (Optional) Specifies that the virtual IPv6 route is advertised to neighboring devices.                                    |
| <b>advertise disable</b>  | (Optional) Specifies that the virtual IPv6 route is not advertised to neighboring devices.                                |

### Command Default

None.

### Command Modes

ITD configuration (config-itd)  
network-adminvdc-admin

**Command History**

| Release | Modification                 |
|---------|------------------------------|
| 6.2(8)  | This command was introduced. |

**Usage Guidelines**

You must ensure that ITD is enabled before you enter this command. You can enter the **feature itd** global configuration mode command to enable ITD.

A virtual IP address (VIP) is an IP address assigned to multiple servers that are part of a device group, rather than being assigned to a specific single server or network interface card. Incoming data packets that are sent to the VIP address, are routed to actual servers from the Cisco Nexus 7000 Series device. Single or multiple VIPs can be configured as part of an ITD service.

**Note**

The VIP has to be in a different subnet than the server IP.

The **virtual ipv6 *ipv6-address* advertise enable** command creates a route on the device that is advertised to neighboring routers. Those routers forward packets that are destined to the VIP to the ingress interface on the Cisco Nexus 7000 Series device.

In some instances, it is not feasible to configure all the VIP TCP or UDP port numbers. You can use the **any** keyword to allow the VIP to accept flows destined to any port.

**Note**

Before modifying the service parameters or device-group parameters, you must enter the **shutdown** command. Once the required parameters are modified, you should enter the **no shutdown** command on the service.

This command requires the Enhanced Layer 2 Package license.

**Examples**

These examples show how to configure a virtual IPv6 address:

```
switch(config)# feature itd
switch(config)# itd device-group dgv6
switch(config-device-group)# node ip 20.20.20.3
switch(config-device-group)# node ip 20.20.20.4
switch(config-device-group)# node ip 20.20.20.5
switch(config-device-group)# exit
switch(config)# itd test1
switch(config-itd)# device-group dg
switch(config-itd)# ingress interface Ethernet 4/1-10
switch(config-itd)# virtual ipv6 ffff:eeee::cccc:eeee dddd:efef::fefe:dddd tcp 10 advertise
enable
switch(config-itd)# no shutdown

switch(config)# feature itd
switch(config)# itd device-group dgv6
switch(config-device-group)# node ip 20.20.20.3
switch(config-device-group)# node ip 20.20.20.4
switch(config-device-group)# node ip 20.20.20.5
switch(config-device-group)# exit

switch(config)# itd test2
switch(config-itd)# device-group dg
```

```

switch(config-itd)# virtual ipv6 11:22::33/64 tcp any
switch(config-itd)# virtual ipv6 11:22::44 ffff:ffff::ff tcp any
switch(config-itd)# ingress interface Eth4/14
switch(config-itd)# no shutdown

```

**Related Commands**

| Command                  | Description   |
|--------------------------|---|
| <b>device-group</b>      | Adds an existing device group to an ITD service.                    |
| <b>feature itd</b>       | Enables the ITD service on the switch.                              |
| <b>ingress-interface</b> | Adds an ingress interface or multiple interfaces to an ITD service. |
| <b>itd</b>               | Configures an ITD service.  |
| <b>itd device-group</b>  | Creates an ITD device group.  |
| <b>node ip</b>           | Creates an IPv4 cluster node for ITD.                               |
| <b>node ipv6</b>         | Creates an IPv6 cluster node for ITD.                               |
| <b>probe</b>             | Configures the cluster group service probe for ITD.                 |
| <b>virtual ip</b>        | Configures the virtual IPv4 address of an ITD service.              |

# vrf

To specify a Virtual Routing and Forwarding (VRF) for an Intelligent Traffic Director (ITD) service, use the **vrf** command. To unconfigure the VRF, use the **no** form of this command.

**vrf** *vrf-name*

**no vrf** *vrf-name*

## Syntax Description

|                 |                                       |
|-----------------|---------------------------------------|
| <i>vrf-name</i> | The VRF instance for the ITD service. |
|-----------------|---------------------------------------|

## Command Default

None.

## Command Modes

ITD configuration (config-itd)  
network-adminvdc-admin

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 6.2(10) | This command was introduced. |

## Usage Guidelines

You must ensure that ITD is enabled before you enter this command. You can enter the **feature itd** global configuration mode command to enable ITD.

All ingress interfaces and device-group nodes must belong to the VRF specified.



### Note

Before modifying the service parameters or device-group parameters, you must enter the **shutdown** command. Once the required parameters are modified, you should enter the **no shutdown** command on the service.

This command requires the Enhanced Layer 2 Package license.

## Examples

This example shows how to configure a VRF for the ITD service:

```
switch(config)# feature itd
switch(config)# itd device-group dg
switch(config-device-group)# node ip 20.20.20.3
switch(config-device-group)# node ip 20.20.20.4
switch(config-device-group)# node ip 20.20.20.5
switch(config-device-group)# probe icmp
switch(config-device-group)# exit

switch(config)# itd test
```



```
switch(config-itd)# device-group dg
switch(config-itd)# ingress interface Ethernet 4/1, Ethernet 4/2
switch(config-itd)# vrf RED
```

**Related Commands**

| Command                  | Description   |
|--------------------------|---|
| <b>device-group</b>      | Adds an existing device group to an ITD service                     |
| <b>feature itd</b>       | Enables the ITD service on the switch.                              |
| <b>itd device-group</b>  | Creates an ITD device group.  |
| <b>ingress interface</b> | Adds an ingress interface or multiple interfaces to an ITD service. |
| <b>node ip</b>           | Creates an IPv4 cluster node for ITD.                               |
| <b>node ipv6</b>         | Creates an IPv6 cluster node for ITD.                               |

