



## I Commands

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The commands in this chapter apply to the Cisco MDS 9000 Family of multilayer directors and fabric switches. All commands are shown here in alphabetical order regardless of command mode. Please see the Command Mode section to determine the appropriate mode for each command. For more information, see the *Cisco MDS 9000 Family Configuration Guide*.

- in-order-guarantee
- init bootloader
- install sup
- interface
- interface fc
- interface fc switchport
- interface mgmt
- interface port-channel
- interface sup-fc
- interface vsan
- ip default-gateway
- ip default-network
- ip domain-list
- ip domain-lookup
- ip domain-name
- ip name-server
- ip route
- ip routing

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## in-order-guarantee

To enable in-order delivery on the in the Cisco MDS 9000 Family of switches, use the **in-order-guarantee** command.

**in-order-guarantee**

**no in-order-guarantee**

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**Syntax** Description None

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**Defaults** Disabled

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**Command Modes** Configuration mode

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**Usage Guidelines** In-order delivery of data frames guarantees frame delivery to a destination in the same order that they were sent by the originator.

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**Examples**

```
switch## config t
switch(config)##
switch(config)# in-order-guarantee
switch(config)#
switch(config)# no in-order-guarantee
switch(config)#
```

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# init bootloader

To install the bootloader contained in an image, use the **init bootloader** command.

```
init bootloader [bootflash: | slot0:]
```

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**Syntax Description**

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<b>bootflash:</b>	Installs the bootloader contained in the bootflash to the internal disk.
<b>slot0:</b>	Installs the bootloader contained in slot0 to the internal disk.

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**Defaults**

Installs the bootloader contained in the current running kickstart image to the internal disk.

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**Command Modes**

Exec.

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**Usage Guidelines**

None.

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**Examples**

```
switch# init bootloader bootflash:  
switch#
```

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## install sup

To perform a non-disruptive upgrade for the system, use the **install sup** command.

```
install sup {bootflash: | slot0: }
```

Syntax Description	bootflash:	The alias of the bootflash device.
	slot0:	The alias of the main card.

Defaults	None
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Command Modes	EXEC
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Usage Guidelines	<p>The <b>install</b> command only upgrades the image.</p> <p>If any errors occur during this process, the switch is reset to guarantee that the system does not continue with a half installed image. In this case, the switch uses the image that was saved in the SYSTEM environment variable prior to this install procedure.</p>
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Examples	<pre>switch# install sup bootflash:system Beginning the install check... Preliminary install check done. Beginning the install process.   Parsing of versioning database successful.   Preparing file system plan now...Done.   Preparing upgrade group plan now...Done.   Executing pre-uninstall scripts...Done.   Updating the File System for installation...Done.   Executing post-install scripts...Done.   System Manager will restart the services according to upgrade plan..Done. Installation completed successfully.</pre>
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# interface

To configure an interface on the Cisco MDS 9000 Family of switches, use the **interface** command.

```
interface fc | mgmt | port-channel | sup-fc | vsan
```

```
no interface
```

## Syntax Description

<b>interface</b>	Selects an interface to configure.
<b>fc</b>	Fiber Channel interface. Slot number range is 1-9.
<b>mgmt</b>	Management interface. Management interface number range is 0-0.
<b>port-channel</b>	Port Channel interface.
<b>sup-fc</b>	Inband Interface
<b>vsan</b>	IPFC VSAN interface. VSAN number range is 1-4093.

## Defaults

Disabled

## Command Modes

Configuration mode

## Usage Guidelines

Specify a range of interfaces by issuing a command with the following example format:

```
interface space fc1/1space-space5space,spacefc2/5space-space7
```

## Examples

```
switch## config t
switch(config)# interface ?
  fc           Fiber Channel interface
  mgmt        Management interface
  port-channel Port Channel interface
  sup-fc      Inband Interface
  vsan        IPFC VSAN interface

switch(config)# interface fc1/1
switch(config-if)#
switch(config-if)#exit
switch(config)##
switch## config t
switch(config-if)#exit
switch(config)##
switch## config t
switch(config)# interface mgmt 0
switch(config-if)#
switch(config-if)#exit
switch(config)##
switch## config t
switch(config)# interface port-channel 32
switch(config-if)#
switch(config-if)#exit
switch(config)##
switch## config t
```

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```
switch(config)# interface vsan 1
switch(config-if)#
switch(config-if)#exit
switch(config)##
switch## config t
switch(config)# interface sup-fc 0
switch(config-if)#
switch(config-if)#exit
switch(config)##
switch## config t

switch(config)# no interface vsan 1
```

---

**Related Commands**

Command	Description
<b>show interface</b>	Displays interface configuration for specified interface.

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## interface fc

To configure a Fibre Channel interface on the Cisco MDS 9000 Family of switches, use the **interface fc** command.

```
interface fc slot_number [ channel-group number force ] exit | fcdomain rcf-reject vsan number [ fspf
cost link_cost vsan number | dead-interval seconds vsan number | hello-interval seconds vsan number
| passive vsan number | retransmit-interval seconds vsan number ] no | shutdown | switchport
```

Syntax	Description
<b>interface</b>	Selects an interface to configure.
<b>fc</b>	Fiber Channel interface. Slot number range is 1-9.
<i>slot_number</i>	Slot number
<b>channel-group</b>	<b>Add to/remove from a port-channel</b>
<i>number</i>	<b>Specify a port-channel number 1-128</b>
<b>force</b>	<b>Forcefully add a port</b>
<b>exit</b>	<b>Exit from submode</b>
<b>fcdomain</b>	<b>Enter the interface submode</b>
<b>rcf-reject</b>	<b>Configure the rcf-reject flag</b>
<b>vsan</b>	<b>Specify the vsan range</b>
<i>number</i>	<b>VSAN id range 1-4093</b>
<b>fspf</b>	Configure FSPF parameters
<b>cost</b>	<b>Configure FSPF link cost</b>
<i>link_cost</i>	<b>Enter FSPF link cost 1-65535</b>
<b>dead-interval</b>	<b>Configure FSPF dead interval</b>
<i>seconds</i>	<b>Enter dead interval (in sec) 2-65535</b>
<b>hello-interval</b>	<b>Configure FSPF hello-interval</b>
<i>seconds</i>	<b>Enter hello interval (in sec) 1-65535</b>
<b>passive</b>	<b>Enable/disable FSPF on the interface</b>
<b>retransmit-interval</b>	<b>Configure FSPF retransmit interface</b>
<i>seconds</i>	<b>Enter retransmit interval (in sec) 1-65535</b>
<b>no</b>	<b>Negate a command or set its defaults</b>
<b>shutdown</b>	<b>Enable/disable an interface</b>
<b>switchport</b>	<b>Configure switchport parameters</b>

**Defaults** Disabled

**Command Modes** Configuration mode

**Usage Guidelines** Specify a range of interfaces by issuing a command with the following example format:  
 interface space fc1/1space-space5space,spacefc2/5space-space7

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**Examples**

```
switch# config t  
Enter configuration commands, one per line. End with CNTL/Z.  
switch(config)# interface fc1/1  
switch(config-if)#
```

---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>show interface</b>	Displays interface configuration for specified interface.



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## interface fc switchport

To configure an interface on the Cisco MDS 9000 Family of switches, use the **interface** command.

**interface fc slot\_number switchport beacon**

**interface fc slot\_number description text**

**interface fc slot\_number encap eisl**

**interface fc slot\_number [ fcrxbbcredit credit mode E | Fx ] fcrxbbcredit default**

**interface fc slot\_number switchport fcrxbuFSIZE size**

**interface fc slot\_number switchport mode auto | E | F | FL | Fx | SD | TL**

**interface fc slot\_number switchport speed 1000 | 2000 | auto**

**interface fc slot\_number switchport trunk allowed vsan number | add vsan number | all**

**interface fc slot\_number mode auto | off | on**

### Syntax Description

<b>interface</b>	Selects an interface to configure.
<b>fc</b>	Fiber Channel interface. Slot number range is 1-9.
<i>slot_number</i>	Slot number
<b>switchport</b>	<b>Configure switchport parameters</b>
<b>beacon</b>	<b>Disable/enable the beacon for an interface</b>
<b>description</b>	<b>Enter description of maximum 80 characters</b>
<i>text</i>	Description text of maximum 80 characters (Max Size - 80)
<b>encap</b>	<b>Configure encapsulation for the port</b>
<b>eisl</b>	<b>EISL encapsulation</b>
<b>fcrxbbcredit</b>	<b>Configure receive BB_credit for the port</b>
<i>credit</i>	<b>Enter receive BB_credit 1-255</b>
<b>mode</b>	<b>Configure receive BB_credit for specific mode</b>
<b>E</b>	<b>Configure receive BB_credit for E or TE mode</b>
<b>Fx</b>	<b>Configure receive BB_credit for F or FL mode</b>
<b>default</b>	<b>Default receive BB_credit</b>
<b>fcrxbuFSIZE</b>	<b>Configure receive data field size for the port</b>
<i>size</i>	<b>Enter receive data field size 256-2112</b>
<b>mode</b>	<b>Enter the port mode</b>
<b>auto</b>	<b>Autosense mode</b>
<b>E</b>	<b>E port mode</b>
<b>F</b>	<b>F port mode</b>
<b>FL</b>	<b>FL port mode</b>
<b>Fx</b>	<b>Fx port mode</b>
<b>SD</b>	<b>SD port mode</b>
<b>TL</b>	<b>TL port mode</b>
<b>speed</b>	<b>Enter the port speed</b>
<b>1000</b>	<b>1000 Mbps speed</b>

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<b>2000</b>	<b>2000 Mbps speed</b>
<b>auto</b>	<b>Autosense speed</b>
<b>trunk</b>	<b>Configure trunking parameters on an interface</b>
<b>allowed</b>	<b>Configure allowed list for interface(s)</b>
<b>add</b>	<b>Give VSAN id range to add to allowed vsan list</b>
<b>all</b>	<b>Add all the vsans to allowed vsan list</b>
<b>mode</b>	<b>Configure trunking mode</b>
<b>auto</b>	<b>Autosense trunking for an interface</b>
<b>off</b>	<b>Disable trunking for an interface</b>
<b>on</b>	<b>Enable trunking for an interface</b>

### Defaults

Disabled

### Command Modes

Configuration mode

### Usage Guidelines

Specify a range of interfaces by issuing a command with the following example format:  
 interface space fc1/1space-space5space,spacefc2/5space-space7

### Examples

```
switch## config t
switch(config)# interface fc1/1
switch(config-if)# ?
Interface configuration comands:
  channel-group  Add to/remove from a port-channel
  exit           Exit from this submode
  fcdomain       Enter the interface submode
  fspf           Configure FSPF parameters
  no             Negate a command or set its defaults
  shutdown       Enable/disable an interface
  switchport     Configure switchport parameters

switch(config-if)# switchport ?
  beacon         Disable/enable the beacon for an interface
  description    Enter description of maximum 80 characters
  encap          Configure encapsulation for the port
  fcrxbbcredit   Configure receive BB_credit for the port
  fcrxbuFSIZE    Configure receive data field size for the port
  mode           Enter the port mode
  speed          Enter the port speed
  trunk          Configure trunking parameters on an interface

switch(config-if)# switchport fcrxbbcredit ?
<1-255> Enter receive BB_credit
default Default receive BB_credit

switch(config-if)# switchport fcrxbbcredit 2 ?
  mode          Configure receive BB_credit for specific mode
  <cr>          Carriage Return

switch(config-if)# switchport fcrxbbcredit 2 mode ?
```

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```

E   Configure receive BB_credit for E or TE mode
Fx  Configure receive BB_credit for F or FL mode

switch(config-if)# switchport fcrxbbcredit 2 mode E ?
<cr> Carriage Return
<cr> Carriage Return

switch(config-if)# switchport fcrxbbcredit default ?
<cr> Carriage Return

```

---

**Related Commands**

<b>Command</b>	<b>Description</b>
<b>show interface</b>	Displays interface configuration for specified interface.

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## interface mgmt

To configure a management interface on the Cisco MDS 9000 Family of switches, use the **interface mgmt** command.

**interface mgmt** *management interface number* | **exit** [ **ip** | **no ip** ] **no** | **shutdown** | **switchport** **description** *text* [ **vrrp** | **no vrrp** *vr\_id* ]

Syntax	Description
<b>interface</b>	Selects an interface to configure.
<b>mgmt</b>	Management interface. Management interface number range is 0-0.
<b>ip</b>	IP address
<b>shutdown</b>	Enable/disable an interface
<b>switchport</b>	Configure switchport parameters
<b>description</b>	Enter description of maximum 80 characters
<i>text</i>	Description text of maximum 80 characters (Max Size - 80)
<b>vrrp</b>	Configure vrrp on this interface
<i>vr_id</i>	Enter VRRP id.

**Defaults** Disabled

**Command Modes** Configuration mode. Issue **interface mgmt** commands from the config-interface (config-if) mode.

**Usage Guidelines** None.

### Examples

```
switch## config t
switch(config)##
switch(config)# interface mgmt 0
switch(config-if)# ?
Interface configuration comands:
  exit      Exit from this submode
  ip        [no] ip address
  no        Negate a command or set its defaults
  shutdown  Enable/disable an interface
  switchport  Configure switchport parameters
  vrrp      [no] vrrp vr_id: Configure vrrp on this interface

switch(config-if)#exit
switch(config)##
```

Related Commands	Command	Description
	<b>show interface mgmt</b>	Displays interface configuration for specified interface.

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## interface port-channel

To configure a port channel interface on the Cisco MDS 9000 Family of switches, use the **interface port-channel** command.

**interface port-channel** *number* **exit**

**interface port-channel** *number* **fcdomain rcf-reject vsan** *number*

**interface port-channel** *number* **fspf cost** *link\_cost* **dead-interval** *seconds* | **hello-interval** *seconds* | **passive** | **retransmit-interval** *seconds*

**interface port-channel** *number* **no**

**interface port-channel** *number* **shutdown**

**interface port-channel** *number* **switchport**

Syntax	Description
<b>interface</b>	Selects an interface to configure.
<b>port-channel</b>	Configure port channel parameters
<i>number</i>	Enter port phannel number 1-128
<b>fcdomain</b>	Enter the interface submode
<b>rcf-reject</b>	Configure the rcf-reject flag
<b>vsan</b>	Specify the vsan range
<i>number</i>	VSAN id range 1-4093
<b>fspf</b>	Configure FSPF parameters
<b>cost</b>	Configure FSPF link cost
<i>link_cost</i>	Enter FSPF link cost 1-65535
<b>dead-interval</b>	Configure FSPF dead interval
<i>seconds</i>	Enter dead interval (in sec) 2-65535
<b>hello-interval</b>	Configure FSPF hello-interval
<i>seconds</i>	Enter hello interval (in sec) 1-65535
<b>passive</b>	Enable/disable FSPF on the interface
<b>retransmit-interval</b>	Configure FSPF retransmit interface
<i>seconds</i>	Enter retransmit interval (in sec) 1-65535
<b>no</b>	Negate a command or set its defaults
<b>shutdown</b>	Enable/disable an interface
<b>switchport</b>	Configure switchport parameters

**Defaults** Disabled

**Command Modes** Configuration mode

**Usage Guidelines** None.

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---

**Examples**

```
switch## config t
switch(config)##
switch(config)# interface port-channel 32
switch(config-if)#
switch(config-if)#exit
switch(config)##
```

---

**Related Commands**

Command	Description
<b>show interface</b>	Displays interface configuration for specified interface.

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## interface sup-fc

To configure Fibre Channel interface on the supervisor module on the Cisco MDS 9000 Family of switches, use the **interface sup-fc** command.

**interface sup-fc** *number* **exit** | **no**

Syntax	Description
<b>interface</b>	Selects an interface to configure.
<b>sup-fc</b>	Inband Interface
<i>number</i>	Inband interface number.
<b>exit</b>	Exit from submenu
<b>no</b>	Negate a command or set its defaults

**Defaults** Disabled

**Command Modes** Configuration mode

**Usage Guidelines** None.

### Examples

```
switch## config t
switch(config)##

switch(config)# interface sup-fc 0
switch(config-if)#
switch(config-if) #exit
switch(config)##
```

Related Commands	Command	Description
	<b>show interface</b>	Displays interface configuration for specified interface.

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## interface vsan

To configure a VSAN interface on the Cisco MDS 9000 Family of switches, use the **interface vsan** command.

**interface vsan** *number* **exit** [ **ip** | **no ip** ] **no** | **shutdown** | [ **vrrp** | **no vrrp** *vr\_id* ]

Syntax	Description
<b>interface</b>	Selects an interface to configure.
<b>vsan</b>	IPFC VSAN interface. VSAN number range is 1-4093.
<i>number</i>	VSAN id range 1-4093
<b>no</b>	Negate a command or set its defaults
<b>shutdown</b>	Enable/disable an interface
<b>ip</b>	ip address
<b>shutdown</b>	Enable/disable an interface
<b>vrrp</b>	Configure vrrp on this interface
<i>vr_id</i>	Enter vrrp id

**Defaults** Disabled

**Command Modes** Configuration mode

**Usage Guidelines** None.

### Examples

```
switch## config t
switch(config)##

switch(config)# interface vsan 1
switch(config-if)#
switch(config-if)#exit
switch(config)##
switch## config t
```

Related Commands	Command	Description
	<b>show interface</b>	Displays interface configuration for specified interface.



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## ip default-gateway

To configure the IP address of the default gateway, use the **ip default-gateway** command.

**ip default-gateway** *destination ip address*

**no ip default-gateway** *destination ip address*

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip default-gateway</b>	Configures the default gateway.

**Defaults** None unless configured during initial set up.

**Command Modes** Configuration mode

**Usage Guidelines** None.

**Examples**

```
switch## config t
switch(config)##
switch(config)# ip default-gateway 1.1.1.4
switch(config)#
```

Related Commands	Command	Description
	<b>show ip route</b>	Displays the IP address of the default gateway.

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## ip default-network

To configure the IP address of the default network, use the **ip default-network** command.

**ip default-network** *ip address*

**no ip default-network** *ip address*

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip default-network</b>	Configures the default network.

**Defaults** None.

**Command Modes** Configuration mode

**Usage Guidelines** None.

**Examples**

```
switch## config t
switch(config)##
switch(config)# ip default-network 1.1.1.4
switch(config)#
```

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## ip domain-list

To configure the IP domain list, use the **ip domain-list** command.

**ip domain-list** *domain name*

**ip domain-list** *domain name*

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip domain-list</b>	Configures the specified domain.

**Defaults** None

**Command Modes** Configuration mode

**Usage Guidelines** None.

**Examples**

```
switch## config t
switch(config)##
switch(config)# ip domain domain name
switch(config)#
```

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## ip domain-lookup

To configure a DNS server, use the **ip domain-lookup** command.

### ip domain-lookup

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip domain-lookup</b>	Configures the DNS server for that switch.

**Defaults** None

**Command Modes** Configuration mode

**Usage Guidelines** Instead of IP addresses, you can configure the switch using meaningful names. The configured name automatically looks up the corresponding IP address.

**Examples**

```
switch## config t
switch(config)##
switch(config)# ip domain-lookup domain name
switch(config)#
```

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## ip domain-name

To configure a domain, use the **ip domain-name** command.

**ip domain-name** *domain name*

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip domain-name</b>	Configures a domain name on the switch.

**Defaults** None

**Command Modes** Configuration mode

**Usage Guidelines** None.

**Examples**

```
switch## config t
switch(config)##
switch(config) # ip domain-name domain name
switch(config) #
```

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## ip name-server

To configure a name server, use the **ip name-server** command.

**ip name-server** *ip address*

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip name-server</b>	Configures the ip address for the name server..

**Defaults** None

**Command Modes** Configuration mode

**Usage Guidelines** None.

**Examples**

```
switch## config t
switch(config)##
switch(config)# ip name-server 1.1.1.4
switch(config)#
```

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# ip route

To configure a static route, use the **ip route** command.

**ip route** *ip address subnet mask interface type*

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip route</b>	Configures the static route for the specified IP address, subnet mask, next hop, and distance.
<b>interface</b>	Configures the static route for the specified interface.
<i>type</i>	
<i>distance</i>	

**Defaults** None.

**Command Modes** Configuration mode

**Usage Guidelines** None.

## Examples

```
switch## config t
switch(config)##
switch(config)# IP route <network IP address> <netmask> <next hop IP address> distance
<number> interface <vsan number>
```

For example:

```
switch(config)# IP route 10.0.0.0 255.0.0.0 20.20.20.10 distance 10 interface vsan 1
switch(config)#
```

Related Commands	Command	Description
	<b>ip routing</b>	???
	<b>show ip route</b>	Displays displays the IP address for the configured ip route.

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## ip routing

To enable the IP forwarding feature, use the **ip routing** command.

### ip routing

Syntax	Description
<b>ip</b>	Configures IP features.
<b>ip routing</b>	Enables IP routing.

**Defaults** Disabled

**Command Modes** Configuration mode

**Usage Guidelines** None.

### Examples

```
switch## config t
switch(config)##
switch(config)# ip routing
switch(config)#
```

Related Commands	Command	Description
	<b>show ip routing</b>	Displays the IP routing status.