



# IP Routing: OSPF Commands

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## ip ospf area

To enable Open Shortest Path First version 2 (OSPFv2) on an interface, use the **ip ospf area** command in interface configuration mode. To disable OSPFv2 on the interface, use the **no** form of this command.

**ip ospf** *process-id* **area** *area-id*

**no ip ospf** *process-id* **area** [*area-id*]

Syntax Description	
<i>process-id</i>	A decimal value in the range from 1 to 65535 that identifies the process ID.
<i>area-id</i>	A decimal value in the range from 0 to 4294967295, or an IP address in the dotted-decimal format.

**Command Default** None

**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 [ip ospf area](#).

**Examples**

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf 65535 area 1
```

## ip ospf authentication

To specify the authentication type for an interface, use the **ip ospf authentication** command in interface or virtual network interface configuration mode. To remove the authentication for an interface, use the **no** form of this command.

```
ip ospf authentication message-digest
no ip ospf authentication
```

**Syntax Description**

<b>message-digest</b>	(Optional) Specifies that message-digest authentication is used.
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**Command Default**

The authentication type for an interface is not configured.

**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 [ip ospf authentication](#).

**Examples**

The following example shows how to enable message-digest authentication:

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf authentication message-digest
```

## ip ospf cost

To explicitly specify the cost of sending a packet on an interface, use the **ip ospf cost** command in interface configuration mode. To reset the path cost to the default value, use the **no** form of this command.

```
ip ospf cost interface-cost
no ip ospf cost interface-cost
```

**Syntax Description**

<i>interface-cost</i>	Unsigned integer value expressed as the link-state metric. It can be a value in the range from 1 to 65535.
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**Command Default**

No default cost is predefined.

**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 [ip ospf cost](#).

**Examples**

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf cost 65
```

## ip ospf dead-interval

To set the interval during which at least one hello packet must be received from a neighbor before the router declares that neighbor down, use the **ip ospf dead-interval** command in interface configuration mode. To restore the default value, use the **no** form of this command.

```
ip ospf dead-interval seconds
no ip ospf dead-interval
```

Syntax Description	
<i>seconds</i>	Interval (in seconds) during which the router must receive at least one hello packet from a neighbor or else that neighbor is removed from the peer list and does not participate in routing. The range is 1 to 65535. The value must be the same for all nodes on the network.

**Command Default** *seconds* : Four times the interval set by the **ip ospf hello-interval** command.

**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 [ip ospf dead-interval](#).

**Examples** The following example sets the OSPF dead interval to 20 seconds:

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf dead-interval 20
```

## ip ospf hello-interval

To specify the interval between hello packets that the Cisco IOS software sends on the interface, use the **ip ospf hello-interval** command in interface configuration mode. To return to the default time, use the **no** form of this command.

```
ip ospf hello-interval seconds
```

**no ip ospf hello-interval**

<b>Syntax Description</b>	<i>seconds</i>	Specifies the interval (in seconds). The value must be the same for all nodes on a specific network. The range is from 1 to 65535.
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**Command Default** 10 seconds

**Command Modes** Interface configuration (config-if)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Qualified for use in Cisco vManage CLI templates.

**Usage Guidelines** This value is advertised in the hello packets. The smaller the hello interval, the faster topological changes will be detected, but more routing traffic will ensue. This value must be the same for all routers and access servers on a specific network.

**Examples**

The following example sets the interval between hello packets to 15 seconds:

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf hello-interval 15
```

## ip ospf message-digest-key md5

To enable Open Shortest Path First (OSPF) Message Digest 5 (MD5) authentication, use the **ip ospf message-digest-key md5** command in interface configuration mode. To remove an old MD5 key, use the **no** form of this command.

```
ip ospf message-digest-key key-id md5 key
no ip ospf message-digest-key
```

<b>Syntax Description</b>	<i>key-id</i>	An identifier in the range from 1 to 255.
	<i>key</i>	Alphanumeric password of up to 16 characters.

**Command Default** OSPF MD5 authentication is disabled.

**Command Modes** Interface configuration (config-if)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	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 [ip ospf message-digest-key md5](#).

**Examples**

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf message-digest-key 255 md5 7 00051105005E0D01072846
```

## ip ospf network

To configure the Open Shortest Path First (OSPF) network type to a type other than the default for a given medium, use the **ip ospf network** command in interface configuration mode. To return to the default value, use the **no** form of this command.

**ip ospf network broadcast**  
**no ip ospf network**

<b>Syntax Description</b>	<b>broadcast</b> Sets the network type to broadcast.
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**Command Default** Depends on the network type.

**Command Modes** Interface configuration (config-if)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	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 [ip ospf network](#).

**Examples** The following example sets your OSPF network as a broadcast network:

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf network broadcast
```

## ip ospf priority

To set the router priority, which helps determine the designated router for this network, use the **ip ospf priority** command in interface configuration mode. The priority is valid only for broadcast interfaces.

To return to the default value, use the **no** form of this command.

**ip ospf priority** *number-value*  
**no ip ospf priority**

<b>Syntax Description</b>	<i>number-value</i> A number value that specifies the priority of the router. The range is from 0 to 255.
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**Command Default** Priority of 1

**Command Modes** Interface configuration (config-if)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	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 [ip ospf priority](#).

**Examples** The following example sets the router priority value to 4:

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf priority 4
```

## ip ospf retransmit-interval

To specify the time between link-state advertisement (LSA) retransmissions for adjacencies belonging to the interface, use the **ip ospf retransmit-interval** command in interface configuration mode. To return to the default value, use the **no** form of this command.

```
ip ospf retransmit-interval seconds
no ip ospf retransmit-interval
```

<b>Syntax Description</b>	<i>seconds</i> Time (in seconds) between retransmissions. The range is from 1 to 65535 seconds. The default is 5 seconds.
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**Command Default** 5 seconds

**Command Modes** Interface configuration (config-if)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	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 [ip ospf retransmit-interval](#).

**Examples** The following example sets the retransmit interval value to 8 seconds:

```
Device(config)# interface GigabitEthernet 1
Device(config-if)# ip ospf retransmit-interval 8
```