

OSPF Configuration Mode Commands

The OSPF Configuration sub-mode is used to configure the Open Shortest Path First (OSPF) routing protocol. This mode includes commands that configure OSPF routing parameters.

Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

`[local]`*`host_name`*`(config-ospf)#`

Important The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

Important For information on common commands available in this configuration mode, refer to the Common Commands chapter.

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area authentication

Enables authentication for the specified OSPF area.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] area { ip_address | decimal_value } authentication [ message-digest ]
```

no

Disables authentication for the specified area.

ip_address

Specifies the IP address of the area where authentication will be enabled in IPv4 dotted-decimal notation.

decimal_value

Specifies the identification number of the area where authentication will be enabled. This must be an integer from 0 through 4294967295.

authentication

Sets the OSPF authentication type to use the simple authentication method.

message-digest

Sets the OSPF authentication type to use the message digest 5 (MD5) authentication method.

Usage Guidelines Use this command to enable authentication of OPSF areas.

Example

The following command enables authentication for an OSPF area defined by the IP address *209.165.200.234* and the OSPF authentication type to MD5:

```
area 209.165.200.234 authentication message-digest
```

area default-cost

Configures the default cost for an area.

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Command Modes Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description `[ no ] area { ip_address | decimal_value } default-cost cost_value`

no

Deletes the default cost for the area.

ip_address

Specifies the IP address of the area in IPv4 dotted-decimal notation.

decimal_value

Specifies the identification number of the area as an integer from 0 through 4294967295.

cost_value

Sets the default cost to be configured for the specified area as an integer from 0 through 16777215.

Usage Guidelines Use this command to configure the default cost for an OSPF area.

Example

The following command sets the default cost for an OSPF area defined by the IP address *209.165.200.234* to *300*:

```
area 209.165.200.234 default-cost 300
```

area nssa

Defines an area as an NSSA (Not So Stubby Area) and configures OSPF parameters for it.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

[no] area { *ip_address* | *decimal_value* } **nssa** [**default-information-originate**] [**no-redistribution**] [**no-summary**] [**translate-always**] [**translate-candidate**] [**translate-never**]

ip_address

Specifies the IP address of the NSSA in IPv4 dotted-decimal notation.

decimal-value

Specifies the identification number of the NSSA area as an integer from 0 through 4294967295.

default-information-originate

Originates default information to the NSSA area.

no-redistribution

Does not redistribute external routes to the NSSA area.

no-summary

Does not inject inter-area routes into NSSA.

translate-always

Configures the NSSA-ABR (Area Border Router) to always translate

translate-candidate

Configure NSSA-ABR for translate election. (This is enabled by default.)

translate-never

Configure NSSA-ABR to never translate.

Usage Guidelines

Use this command to define NSSA areas.

Example

The following command defines the area designated by the IP address *209.165.200.234* as an NSSA area:

```
area 209.165.200.234 nssa
```

area stub

Defines an area as an OSPF stub area.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] area { ip_address | decimal_value } stub [ no-summary ]
```

ip_address

Specifies the IP address of the stub area in IPv4 dotted-decimal notation.

decimal_value

Specifies the identification number of the stub area as an integer from 0 through 4294967295.

stub

Specifies this is a stub area.

no-summary

Disables (stops) the ABR (Area Border Router) from sending summary link state advertisements (LSAs) into the stub area.

Usage Guidelines

Use this command to define an OPSF area as a stub area.

Example

The following command defines the OSPF area defined by the IP address *209.165.200.234* as a stub area:

```
area 209.165.200.234 stub
```

area virtual-link

Configures a virtual link between an area that cannot be physically connected to the network backbone and an area that is physically connected to the network backbone.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] area { ip_address | decimal_value } virtual-link router_id_address
```

no

Disables area virtual-link.

ip_address

Specifies the IP address of the transit area in IPv4 dotted-decimal notation.

decimal_value

Specifies The identification number of the transit area as an integer from 0 through 4294967295.

router_id_address

Specifies the router id of the ABR to be linked to in IPv4 dotted-decimal notation.

Usage Guidelines

Use this command to create a virtual link between an area that is connected to the network backbone and an area that cannot be connected to the network backbone.

Example

The following command creates a virtual link between the OSPF areas defined by the IP address *209.165.200.234* and the IP address *209.165.200.244*:

```
area 209.165.200.234 virtual-link 209.165.200.244
```

area virtual link authentication

Configures the OSPF authentication method to be used by the virtual link between an area that cannot be physically connected to the network backbone and an area that is physically connected to the network backbone.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] area { ip_address | decimal_value } virtual-link router_id_address
authentication { message-digest | null | text }
```

no

Disables area virtual link authentication.

ip_address

Specifies the IP address of the transit ares in IPv4 dotted-decimal notation.

decimal_value

Specifies the identification number of the transit area as an integer from 0 through 4294967295.

router_id_address

Specifies the router id of the ABR to be linked to in IPv4 dotted-decimal notation.

authentication

Sets the OSPF authentication type to use the simple authentication method.

message-digest

Sets the OSPF authentication type to use the message digest (MD) authentication method.

null

Set the OSPF authentication type to use no authentication, thus disabling either MD or clear text methods.

text

Set the OSPF authentication type to use the clear text authentication method.

Usage Guidelines

Use this command to set the authentication method for a virtual link between an area that is connected to the network backbone and an area that cannot be connected to the network backbone.

Example

The following command sets the authentication method for a virtual link between the OSPF areas defined by the IP address *209.165.200.234* and the IP address *209.165.200.244* to use no authentication:

```
area 209.165.200.234 virtual-link 209.165.200.244 null
```

area virtual-link authentication-key

Configures the authentication password for the virtual link between an area that cannot be physically connected to the network backbone and an area that is physically connected to the network backbone.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

area { *ip_address* | *decimal_value* } **virtual-link** *router_id_address* **authentication-key** { **encrypted password** *encrypted_key* **| password** *password_key* }
no area { *ipaddress* | *decimal_value* } **virtual-link** *router_id_address* **authentication-key**

no

Disables the area virtual link authentication key.

ipaddress

Specifies the IP address of the transit area in IPv4 dotted-decimal notation.

decimal-value

Specifies the identification number of the transit area as an integer from 0 through 4294967295.

router_id_address

Specifies the router id of the ABR to be linked to in IPv4 dotted-decimal notation.

encrypted password

encrypted_key is an alphanumeric string of 1 through 523 characters.

Use this if you are pasting a previously encrypted authentication key into the CLI command.

password *password_key*

The password to use for authentication. *password_key* is an alphanumeric string of 1 through 16 characters that denotes the authentication password. This variable is entered in clear text format.

Usage Guidelines

Use this command to specify the authentication password for a virtual link between an area that is connected to the network backbone and an area that cannot be connected to the network backbone.

Example

The following command creates an authentication password of *123456* for a virtual link between the OSPF areas defined by the IP address *209.165.200.234* and the IP address *209.165.200.244*:

```
area 209.165.200.234 virtual-link 209.165.200.244 authentication-key
password 123456
```

area virtual link intervals

Configures the interval or delay type, and the delay time in seconds, for the virtual link between an area that cannot be physically connected to the network backbone and an area that is physically connected to the network backbone.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] area { ip_address | decimal_value } virtual-link router_id_address [
dead-interval dead_value ] [ hello-interval hello_value ] [ retransmit-interval
 rt_value ] [ transmit-delay td_value ]
```

no

Disables the area virtual link intervals.

ipaddress

Specifies the IP address of the area in IPv4 dotted-decimal notation.

decimal_value

Specifies the identification number of the transit area as an integer from 0 through 4294967295.

router_id_address

Specifies the router id of the ABR to be linked to in IPv4 dotted-decimal notation.

dead-interval *dead_value*

Specifies The interval (in seconds) that the router should wait, during which time no packets are received and after the router considers a neighboring router to be off-line. *dead_value* must be an integer from 1 through 65535.

hello-interval *hello_value*

Specifies the interval (in seconds) before sending a hello packet. *hello_value* must be an integer from 1 through 65535.

retransmit-interval *rt_value*

Specifies the interval (in seconds) that router should wait before retransmitting a packet. *rt_value* must be an integer from 1 through 3600.

transmit-delay *td_value*

Specifies the interval (in seconds) that the router should wait before transmitting a packet. *td_value* must be an integer from 1 through 3600.

Usage Guidelines

Use this command to set the intervals or delay types for a virtual link between an area that is connected to the network backbone and an area that cannot be connected to the network backbone.

Example

The following command sets the retransmit interval for a virtual link between the OSPF areas defined by the IP address 209.165.200.234 and the IP address 209.165.200.244 to 60 seconds:

```
area 209.165.200.234 virtual-link 209.165.200.244 retransmit-interval 60
```

area virtual link message-digest-key

Enables the use of MD5-based OSPF authentication for the virtual link between an area that cannot be physically connected to the network backbone and an area that is physically connected to the network backbone.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

area { *ip_address* | *decimal_value* } **virtual-link** *router_id_address* **message-digest-key** *key_id* **md5** { **encrypted password** *encrypted__key* **| password** *password_key* }
no area { *ipaddress* | *decimal_value* } **virtual-link** *router_id_address* **message-digest-key** *key_id*

no

Disables the area virtual link message digest key.

ip_address

Specifies the IP address of the transit area in IPv4 dotted-decimal notation.

decimal_value

Specifies the identification number of the transit area as an integer from 0 through 4294967295.

router_id_address

Specifies the router id of the ABR to be linked to in IPV4 dotted-decimal notation.

message-digest-key *key_id*

Specifies the key identifier number. *key_id* must be an integer from 1 through 255.

encrypted password *encrypted_key*

Specifies the use of an encrypted password. *encrypted_key* is an alphanumeric string of 1 through 523 characters.

Used this if you are pasting a previously encrypted authentication key into the CLI command.

password *password_key*

Specifies the password to use for authentication. *password_key* is an alphanumeric string from 1 through 16 characters that is entered in clear text format.

Usage Guidelines

Use this command to enable the use of MD5-based OSPF authentication for a virtual link between an area that is connected to the network backbone and an area that cannot be connected to the network backbone.

Example

The following command enables the use of MD5-based OSPF authentication for a virtual link between the OSPF areas defined by the IP address 209.165.200.234 and the IP address 209.165.200.244, sets the MD5 Key ID to 25, and the password to 123456:

```
area 209.165.200.234 virtual-link 209.165.200.244 message-digest-key 25
md5 password 123456
```

bfd-all-interfaces

Enables or disables Bidirectional Forwarding Detection (BFD) on all OSPF interfaces.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

[no] bfd-all-interfaces

no

Disables BFD capability on all interfaces.

Usage Guidelines

Use this command to configure BFD on all OSPF interfaces. See the *System Administration Guide* for additional information on how to configure BFD.

Example

The following command configures BFD on all OSPF interfaces:

```
bfd-all-interfaces
```

capability graceful-restart

Configures graceful-restart. By default, this capability is set to enabled.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

`[local]`*`host_name`*`(config-ospf)#`

Syntax Description

`[ no | default ] capability graceful-restart`

no

Disables the graceful-restart capability.

default

Enables the graceful-restart capability if it has been disabled.

Usage Guidelines

Use this command to configure graceful-restart.

Example

The following command configures graceful-restart:

`capability graceful-restart`

default-information originate

Creates a default external route into an OSPF routing domain.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

default-information originate
default-information originate [**always**] [**metric** *metric_value*] [**metric-type** { **1** | **2** }] [**route-map** *route_map_name*]
no default-information originate

no

Disables the default external route.

always

Always advertise the route regardless of whether or not the software has a default route.

metric *metric_value*

Sets the OSPF metric used in creating the default rout as an integer from 1 through 16777214.

metric-type { 1 | 2 }

Sets the default route metric type.

1: Sets the OSPF external link type for default routes to Type 1.

2: Sets the OSPF external link type for default routes to Type 2.

route-map *route_map_name*

Specifies the name of the default route-map to be use as an alphanumeric string of 1 through 79 characters.

Usage Guidelines

Use this command to set the default external route into an OSPF routing domain.

Example

The following command sets the default external route to originate from the route map named *rmap1*:

```
default-information originate route-map rmap1
```

default-metric

Configures the default metric value for the OSPF routing protocol. All OSPF interfaces have a cost, which is a routing metric that is used in the link-state calculation. Routes with lower total path metrics are preferred over those with higher path metrics. When several equal-cost routes to a destination exist, traffic is distributed equally among them. The default metric is a global parameter that specifies the cost applied to all OSPF routes by default.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

default-metric *metric_value*
no default-metric

metric-value

Sets the metric value expressed as an integer from 1 through 16777214. Default: 26385.

no

Enables or disables the default metric value for OSPF.

Usage Guidelines

Use this command to set the default metric for routes.

Example

The following command sets the default metric to *235*:

```
default-metric 235
```

distance

Configures the OSPF route administrative distances for all OSPF route types or based on specific route type. Administrative distance is the measure used by Cisco routers to select the best path when there are two or more different routes to the same destination from two different routing protocols. Administrative distance defines the reliability of a routing protocol. Each routing protocol is prioritized in order of most to least reliable (believable) using an administrative distance value. A lower numerical value is preferred.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

`[ no ] distance { distance_value | ospf { [ external distance_value ] [ inter-area distance_value ] [ intra-area distance_value ] } }`

no

Disables the OSPF route administrative distances for all OSPF route types.

distance_value

Specifies the OSPF route administrative distances as an integer from 1 to 255. The default distance value is 110.

ospf { [external *distance_value*] [inter-area *distance_value*] [intra-area *distance_value*] }

Set the distance value for the specified route type.

external *distance_value*: Set the OSPF route administrative distance for routes from other routing domains, learned by redistribution. This must be an integer from 1 through 255. The default is 110.

inter-area *distance_value*: sets the OSPF route administrative distance for routes from one routing area to another. This must be an integer from 1 through 255. The default is 110.

intra-area *distance_value*: sets the OSPF route administrative distance for all routes within an area. This must be an integer from 1 through 255. The default is 110.

no

Enables or disables the specified option.

Usage Guidelines

Use this command to set the administrative distance for OSPF routes.

Example

The following command sets the administrative distance for all OSPF route types to *30*:

```
distance 30
```

distribute-list

Enables or disables the filtering of networks in outgoing routing updates.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

[no] distribute-list *route_access_list* **out { connected | rip | static }**

no

Disables the filtering of networks in outgoing routing updates.

route_access_list

Specifies the name of the OSPF route access list to use for filtering as an alphanumeric string of 1 through 63 characters.

connected

Filters connected routes.

rip

Filters RIP routes. (RIP is not supported at this time.)

static

Filters static routes.

no

Disables the specified option.

Usage Guidelines

Use this command to enable the filtering of outgoing route updates by using the specified route access list.

Example

The following command uses the route access list named *ral1* to filter outgoing routing updates for all connected routes:

```
distribute-list ral1 out connected
```

ip vrf

Configures the Virtual Routing and Forwarding (VRF) instances for OSPF routing protocol.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

`[ no ] ip vrf vrf_name`

no

Disables the VRF instances and removes the configured VRF context association for OSPF routing.

vrf*vrf_name*

Configures Virtual Routing & Forwarding (VRF) parameters.

vrf_name is name of a preconfigured VRF context configured in Context Configuration Mode via the **ip vrf** command. It is an alphanumeric string of 1 through 63 characters.

Usage Guidelines

Use this command to configure the IP VRF forwarding also to associate the preconfigured VRF context with the specific tunnel interface.

This command creates and enters the OSPF VRF Configuration Mode if required to configure the VRF context instances for OSPF routing.

Example

The following command enables preconfigured VRF context instance *ospf_vrf1* for OSPF routing and enters the OSPF VRF Configuration mode:

```
ip vrf ospf_vrf1
```

neighbor

Configures OSPF routers that interconnect to non-broadcast networks.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

`[ no ] neighbor ip_address [ poll-interval poll_interval_value ] [ priority priority_value ]`

no

Disables OSPF routers that interconnect to non-broadcast networks.

ip_address

Specifies the interface IP address of the OSPF neighbor expressed using IPv4 dotted-decimal notation.

poll-interval *poll_interval_value*

Default: 120

Sets the number of seconds in the dead neighbor polling interval as an integer from 1 through 65535

priority *priority_value*

Default: 0

Sets the 8-bit number that represents the router priority value of the non-broadcast neighbor associated with the specified IP address. This must be an integer from 0 through 255. This keyword does not apply to point-to-multipoint interfaces.

Usage Guidelines

Use this command to configure OSPF routers that connect to non-broadcast networks.

Example

The following command specifies an OSPF router neighbor with the IP address of *209.165.200.234*:

```
neighbor 209.165.200.234
```

network area

Enables OSPF on an interface and defines the OSPF area for that network.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] network network_ip_address / network_mask area { area_id | area_ip_address }
```

no

Disables OSPF on an interface and defines the OSPF area for that network.

network_ip_address/network_mask

Specifies the network address and mask as well as the interface on which OSPF will be enabled. *network_ip_address* in entered in IPv4 dotted-decimal notation, followed by the "/" and the mask (CIDR).

area_id

Specifies the OSPF area identification number for the specified network as an integer from 0 through 4294967295.

area_ip_address

Specifies the IP address of the OSPF area for this network. This must be entered in IPv4 dotted-decimal notation.

Usage Guidelines

Use this command to specify the IP address of the network interface that the OSPF router will use.

Example

The following command specified that the OSPF router will use the interface at IP address *209.165.200.224* with a netmask of *24*:

```
network 209.165.200.224/27
```

ospf graceful-restart

Configures OSPF graceful-restart settings.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

ospf graceful-restart { **grace-period** *grace_period* | **helper** { **never** | **policy** { **only-reload** | **only-upgrade** } } }

grace-period grace-period

Specifies the OSPF graceful restart grace period (in seconds) as an integer from 1 through 1800. Default grace period is 60 seconds.

helper { never | policy { only-reload | only-upgrade } }

Helps configure OSPF helper settings.

never: Do not allow helper mode.

policy { only-reload | only-upgrade }: Allows ospf graceful-restart helper mode.

- **only-reload**: Allows ospf graceful-restart helper mode only for a reload.
- **only-upgrade**: Allows ospf graceful-restart helper mode only for an upgrade.

Default is ospf graceful-restart grace-period.

Usage Guidelines Use this command to configure graceful-restart specific settings.

Example

The following command sets the graceful restart grace period to *60* seconds:

```
ospf graceful-restart grace-period 60
ospf graceful-restart helper policy only-reloadL
ospf graceful-restart helper policy only-upgrade
```

ospf router-id

This command configures the router ID for the OSPF process.

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Command Modes Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description `[ no ] ospf router-id ip_address`

no

Disables the router ID for the OSPF process.

router-id *ip_address*

Specifies the router ID for the OSPF process. *ip_address* is entered using IPv4 dotted-decimal notation.

Usage Guidelines Use this command to set the router ID for the current OSPF router process.

Example

The following command sets the router ID to *192.168.200.1*:

```
ospf router-id 192.168.200.1
```

passive-interface

Enables or disables the suppression of OSPF routing updates on the specified interface.

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Command Modes

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configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] passive-interface interface_name
```

no

Disables the name assigned to a logical interface within the specific context.

interface_name

Specifies the name assigned to a logical interface within the specific context as an alphanumeric string of 1 through 79 characters.

Usage Guidelines

Use this command to suppress router updates on an interface in the current context.

Example

The following command suppresses OSPF routing updates on the interface named *Intfc1*:

```
passive-interface Intfc1
```

redistribute

Redistributes routes from other protocols to OSPF neighbors using the OSPF protocol.

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configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

redistribute { **connected** | **rip** | **static** } [**metric** *metric_value*] [**metric-type** { **1** | **2** }] [**route-map** *route_map_name*]
no redistribute { **connected** | **rip** | **static** }

no

Disables the redistributed routes.

connected

Redistributes connected routes.

rip

Specifies that RIP routes will be redistributed. (RIP is not supported at this time.)

static

Redistributes static routes.

metric *metric_value*

Sets the OSPF metric used in the redistributed route. This must be an integer from 1 through 16777214.

metric-type { 1 | 2 }

Default: 2

Sets route metric type that is applied to redistributed routes.

1: Sets the OSPF external link type for routes to Type 1.

2: Sets the OSPF external link type for routes to Type 2.

route-map *route_map_name*

Filter routes through the specified route map before redistribution. *route_map_name* specifies the name of the route-map to use as an alphanumeric string of 1 through 79 characters.

Usage Guidelines

Use this command to define what routing protocols should have their routes redistributed into OSPF.

Example

The following command defines that BGP routes should be redistributed:

```
redistribute connected
```

refresh timer

Adjusts settings for the OSPF refresh timer.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

```
[local]host_name(config-ospf)#
```

Syntax Description

```
[ no ] refresh  timer value
```

no

Disables the refresh timer.

value

Default: 10

Specifies the minimum amount of time (in seconds) to wait before refreshing a Link-state Advertisement (LSA). This must be an integer from 10 through 1800.

Usage Guidelines

Use this command to define the amount of time to wait before refreshing an LSA.

Example

The following command sets the refresh timer to *90* seconds:

```
refresh timer 90
```

router-id

Configures the router ID for the OSPF process.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

`[local]host_name(config-ospf)#`

Syntax Description

`[ no ] router-id ip_address`

no

Disables the router ID for the OSPF process.

ip_address 196

Specifies the router ID for the OSPF process in IPv4 dotted-decimal notation.

Usage Guidelines

Use this command to set the router ID for the current OSPF router process.

Example

The following command sets the router ID to *192.168.200.1*:

```
router-id 192.168.200.1
```

timers spf

Sets the Shortest Path First (SPF) timers.

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Command Modes

Exec > Global Configuration > Context Configuration > OSPF Configuration

configure > context *context_name* **> router ospf**

Entering the above command sequence results in the following prompt:

`[local]host_name(config-ospf)#`

Syntax Description

timers spf *delay_value hold_time_value*
no timers spf

no

Disables SPF timers.

delay_value

Default: 5

Specifies the delay time (in seconds) between receiving changes to an SPF calculation. This must be an integer from 0 through 4294967295.

hold_time_value

Default: 10

Specifies the hold time (in seconds) between consecutive SPF calculations. This must be an integer from 0 through 4294967295.

Usage Guidelines

Use this command to set the SPF delay and hold timers for the current OSPF router process.

Example

The following command sets the delay timer to *15* and the hold timer to *15*:

```
timers spf 15 15
```