



OSPF Limit on Number of Redistributed Routes

Open Shortest Path First (OSPF) supports a user-defined maximum number of prefixes (routes) that are allowed to be redistributed into OSPF from other protocols or other OSPF processes. Such a limit could help prevent the router from being flooded by too many redistributed routes.

History for the OSPF Limit on Number of Redistributed Routes Feature

Release	Modification
12.0(25)S	This feature was introduced.
12.3(2)T	This feature was integrated into Cisco IOS Release 12.3(2)T.
12.2(18)S	This feature was integrated into Cisco IOS Release 12.2(18)S.
12.2(27)SBC	This feature was integrated into Cisco IOS Release 12.2(27)SBC.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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Prerequisites for OSPF Limit on Number of Redistributed Routes

It is presumed that you have OSPF configured in your network, along with another protocol or another OSPF process you are redistributing.

Information About OSPF Limit on Number of Redistributed Routes

Before you limit the number of OSPF redistributed routes, you should understand the concept described in this section.

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Benefits of OSPF Limit on Number of Redistributed Routes

If someone mistakenly injects a large number of IP routes into OSPF, perhaps by redistributing Border Gateway Protocol (BGP) into OSPF, the network can be severely flooded. Limiting the number of redistributed routes prevents this potential problem.

How to Limit the Number of OSPF Redistributed Routes or Receive a Warning About the Number of OSPF Redistributed Routes

This section contains the following procedures, which are mutually exclusive. That is, you cannot both limit redistributed prefixes and also choose to be warned.

- [Limiting the Number of OSPF Redistributed Routes, page 2](#)
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Limiting the Number of OSPF Redistributed Routes

This task describes how to limit the number of OSPF redistributed routes. If the number of redistributed routes reaches the maximum value configured, no more routes will be redistributed.


The redistribution limit applies to all IP redistributed prefixes, including summarized ones. The redistribution limit does not apply to default routes or prefixes that are generated as a result of Type-7 to Type-5 translation.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router ospf *process-id***

4. **redistribute** *protocol* [*process-id*] [*as-number*] [**metric** *metric-value*] [**metric-type** *type-value*] [**match** {**internal** | **external 1** | **external 2**}] [**tag** *tag-value*] [**route-map** *map-tag*] [**subnets**]
5. **redistribute maximum-prefix** *maximum* [*threshold*]
6. **end**
7. **show ip ospf** [*process-id*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	router ospf <i>process-id</i> Example: Router(config)# router ospf 1	Configures an OSPF routing process.
Step 4	redistribute <i>protocol</i> [<i>process-id</i>] [<i>as-number</i>] [metric <i>metric-value</i>] [metric-type <i>type-value</i>] [match { internal external 1 external 2 }] [tag <i>tag-value</i>] [route-map <i>map-tag</i>] [subnets] Example: Router(config-router)# redistribute eigrp 10	Redistributes routes from one routing domain into another routing domain.
Step 5	redistribute maximum-prefix <i>maximum</i> [<i>threshold</i>] Example: Router(config-router)# redistribute maximum-prefix 100 80	Sets a maximum number of IP prefixes that are allowed to be redistributed into OSPF. <ul style="list-style-type: none"> • There is no default value for the <i>maximum</i> argument. • The <i>threshold</i> value defaults to 75 percent.  Note If the warning-only keyword had been configured in this command, no limit would be enforced; a warning message is simply logged.

	Command or Action	Purpose
Step 6	<code>end</code> Example: Router(config-router)# end	Exits router configuration mode.
Step 7	<code>show ip ospf [process-id]</code> Example: Router# show ip ospf 1	(Optional) Displays general information about OSPF routing processes. <ul style="list-style-type: none"> If a redistribution limit was configured, the output will include the maximum limit of redistributed prefixes and the threshold for warning messages.

Requesting a Warning About the Number of Routes Redistributed into OSPF

This task describes how to cause the system to generate a warning message when the number of redistributed prefixes reaches a maximum value. However, additional redistribution is not prevented.

The redistribution count applies to external IP prefixes, including summarized routes. Default routes and prefixes that are generated as a result of Type-7 to Type-5 translation are not considered.

SUMMARY STEPS

1. `enable`
2. `configure terminal`
3. `router ospf process-id`
4. `redistribute protocol [process-id] [as-number] [metric metric-value] [metric-type type-value] [match {internal | external 1 | external 2}] [tag tag-value] [route-map map-tag] [subnets]`
5. `redistribute maximum-prefix maximum [threshold] warning-only`
6. `end`

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>enable</code> Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	<code>configure terminal</code> Example: Router# configure terminal	Enters global configuration mode.
Step 3	<code>router ospf process-id</code> Example: Router(config)# router ospf 1	Configures an OSPF routing process.

	Command or Action	Purpose
Step 4	<pre>redistribute protocol [process-id] [as-number] [metric metric-value] [metric-type type-value] [match {internal external 1 external 2}] [tag tag-value] [route-map map-tag] [subnets]</pre> <p>Example: Router(config-router)# redistribute eigrp 10</p>	Redistributes routes from one routing domain into another routing domain.
Step 5	<pre>redistribute maximum-prefix maximum [threshold] warning-only</pre> <p>Example: Router(config-router)# redistribute maximum-prefix 1000 80 warning-only</p>	<p>Causes a warning message to be logged when the maximum number of IP prefixes has been redistributed into OSPF.</p> <ul style="list-style-type: none"> • Because the warning-only keyword is included, no limit is imposed on the number of redistributed prefixes into OSPF. • There is no default value for the <i>maximum</i> argument. • The <i>threshold</i> value defaults to 75 percent. • This example causes two warnings: one at 80 percent of 1000 (800 routes redistributed) and another at 1000 routes redistributed.
Step 6	<pre>end</pre> <p>Example: Router(config-router)# end</p>	Exits router configuration mode.

Configuration Examples for OSPF Limit on Number of Redistributed Routes

This section contains the following examples:

- [OSPF Limit on Number of Redistributed Routes: Example, page 5](#)
- [Requesting a Warning About the Number of Redistributed Routes: Example, page 6](#)

OSPF Limit on Number of Redistributed Routes: Example

This example sets a maximum of 1200 prefixes that can be redistributed into OSPF process 1. Prior to reaching the limit, when the number of prefixes redistributed reaches 80 percent of 1200 (960 prefixes), a warning message is logged. Another warning is logged when the limit is reached and no more routes are redistributed.

```
router ospf 1
router-id 10.0.0.1
domain-id 5.6.7.8
log-adjacency-changes
timers lsa-interval 2
network 10.0.0.1 0.0.0.0 area 0
network 10.1.5.1 0.0.0.0 area 0
network 10.2.2.1 0.0.0.0 area 0
redistribute static subnets
redistribute maximum-prefix 1200 80
```

Requesting a Warning About the Number of Redistributed Routes: Example

This example allows two warning messages to be logged, the first if the number of prefixes redistributed reaches 85 percent of 600 (510 prefixes), and the second if the number of redistributed routes reaches 600. However, the number of redistributed routes is not limited.

```
router ospf 1
 network 10.0.0.0 0.0.0.255 area 0
 redistribute eigrp 10 subnets
 redistribute maximum-prefix 600 85 warning-only
```

Additional References

The following sections provide references related to OSPF Limit on Number of Redistributed Routes.

Related Documents

Related Topic	Document Title
OSPF commands	<i>Cisco IOS IP Routing Protocols Command Reference</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
None	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	—

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Command Reference

The following commands are introduced or modified in the feature or features documented in this module. For information about these commands, see the *Cisco IOS IP Routing Protocols Command Reference* at http://www.cisco.com/en/US/docs/ios/iproute/command/reference/irp_book.html. For information about all Cisco IOS commands, go to the Command Lookup Tool at <http://tools.cisco.com/Support/CLILookup> or to the *Cisco IOS Master Commands List*.

- **redistribute maximum-prefix**
- **show ip ospf**
- **show ip ospf database**

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