



On-Demand Routing Commands

Use the commands in this chapter to configure On-Demand Routing (ODR). For ODR configuration information and examples, refer to the “Configuring On-Demand Routing” chapter of the *Cisco IOS IP and IP Routing Configuration Guide*.

router odr

To configure an On-Demand Routing (ODR) process on a Cisco router, use the **router odr** command in global configuration mode. To disable the ODR process, use the **no** form of this command.

router odr

no router odr

Syntax Description This command has no arguments or keywords

Defaults No default behavior or values

Command Modes Global configuration

Command History	Release	Modification
	11.2	This command was introduced.

Usage Guidelines The **router odr** command is used to configure a router as an ODR hub router to dynamically accept routes from stub peers. ODR provides IP routing with minimal configuration requirements. The overhead of dynamic routing protocol is avoided without incurring the configuration and management overhead of static routing.

The ODR process maintains a routing table, which is populated with information learned from ODR stub peers. Cisco Discovery Protocol (CDP) must be enabled on the hub router and stub peers. ODR timing values should be tuned based the number of peers and the speed of the links in your network. Route filtering should be applied consistently.

Examples In the following example, an ODR process is enabled, a distribution list is configured to filter routes learned from ODR stub peers, and redistribution statement is configured under the Open Shortest Path First (OSPF) routing process:

```
Router(config)# access-list 101 permit ip host 10.0.0.1 192.168.1.0 0.0.0.255
Router(config)# access-list 101 permit ip 10.0.10.2 255.0.0.0 192.168.2.0 0.0.0.255
Router(config)# !
Router(config)# router odr
Router(config-router)# distribute-list 101 in
Router(config-router)# exit
Router(config-router)# router ospf 1
Router(config-router)# redistribute odr subnets
```

Related Commands	Command	Description
	cdp timer	Specifies how often the Cisco IOS software sends CDP updates.
	distance (IP)	Defines an administrative distance.
	distribute-list in (IP)	Filters networks received in updates.
	distribute-list out (IP)	Suppresses networks from being advertised in updates.
	maximum-paths	Controls the maximum number of parallel routes an IP routing protocol can support.
	timers basic (ODR)	Adjusts ODR network timers.

timers basic (ODR)

To adjust On-Demand Routing (ODR) network timers, use the **timers basic** command in router configuration mode. To restore default ODR timer values, use the **no** form of this command.

timers basic *update invalid holddown flush* [*sleeptime*]

no timers basic

Syntax Description		
<i>update</i>		Rate (in seconds) at which updates are sent. This is the fundamental timing parameter of the ODR routing protocol.
<i>invalid</i>		Interval of time (in seconds) after which a route is declared invalid; it should be at least three times the value of the <i>update</i> argument. A route becomes invalid when there is an absence of updates that refresh the route. The route then enters holddown. The route is marked inaccessible and advertised as unreachable. However, the route is still used for forwarding packets.
<i>holddown</i>		Interval (in seconds) during which routing information regarding better paths is suppressed. It should be at least three times the value of the <i>update</i> argument. A route enters into a <i>holddown</i> state when an update packet is received that indicates the route is unreachable. The route is marked inaccessible and advertised as unreachable. However, the route is still used for forwarding packets. When <i>holddown</i> expires, routes advertised by other sources are accepted and the route is no longer inaccessible.
<i>flush</i>		Amount of time (in seconds) that must pass before the route is removed from the routing table; the interval specified must be at least the sum of the <i>invalid</i> and <i>holddown</i> arguments. If it is less than this sum, the proper holddown interval cannot elapse, which results in a new route being accepted before the holddown interval expires.
<i>sleeptime</i>		(Optional) Interval (in milliseconds) for postponing routing updates in the event of a flash update. The <i>sleeptime</i> value should be less than the <i>update</i> time. If the <i>sleeptime</i> is greater than the <i>update</i> time, routing tables will become unsynchronized.

Defaults

ODR uses the following default values if this command is not configured or if the no form of this command is entered:

update: 90 seconds

invalid: 270 seconds

holddown: 280 seconds

flush: 630 seconds

sleeptime: 0 milliseconds

Command Modes

Router configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

The basic timing parameters for ODR are adjustable. Because this routing protocol is executing a distributed, asynchronous routing algorithm, it is important that these timers be the same for all routers and access servers in the network.

**Note**

The current and default timer values are displayed in the output of the **show ip protocols EXEC** command. The relationships of the various timers should be preserved as described in the syntax description table.

Examples

In the following example, updates are configured to be broadcast every 5 seconds. If a reply is not received from a peer within 15 seconds, the route is declared unusable. Further information the dead peer is suppressed for an additional 15 seconds. At the end of the suppression period, the route is flushed from the routing table.

```
Router(config)# router odr
Router(config-router)# timers basic 5 15 15 30
Router(config-router)# end
```

**Note**

When configuring a short update period, you run the risk of congesting slow-speed serial lines; however, this is less of a concern on high-speed links, such as Fast Ethernet, Gigabit Ethernet, and T1-rate serial links. Also, if you have many routes in your updates, you can cause the routers to spend an excessive amount of time processing updates.

Related Commands

Command	Description
cdp timer	Specifies how often the Cisco IOS software sends CDP updates,
router odr	Configures an ODR process on a Cisco router.

