



Configuring Dialer Cisco Express Forwarding

This document describes the Dialer Cisco Express Forwarding feature.

Feature History

Release	Modification
12.2(4)T	This feature was introduced.

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Restrictions for Dialer Cisco Express Forwarding

- The Dialer Cisco Express Forwarding feature is not supported when a static route points to the Dialer without specifying a next hop IP address. When using Cisco IOS Release 12.3(11)T and higher, the **ppp ipcp default route** command may be used in Dialer interface configuration mode to work around this restriction.
- Dialer interfaces do not support **ipv6 cef** switching.



Information About Dialer Cisco Express Forwarding

The Dialer Cisco Express Forwarding feature introduces Cisco Express Forwarding support for dialer interfaces. The Dialer Cisco Express Forwarding feature allows for packets to be Cisco Express Forwarding-switched across dialer interfaces rather than being low-end switched (LES) or fast-switched. Compared to fast-switching, Cisco Express Forwarding-switching support improves switching performance by decreasing CPU utilization and lowering the packet loss rate.

DDR-Dependent Implementation Decisions

You must decide whether to implement legacy dial-on-demand routing (DDR) or the newer dialer profiles.

Dialer Profiles

The dialer profiles implementation of DDR is based on a separation between logical and physical interface configuration. Dialer profiles also allow the logical and physical configurations to be bound together dynamically on a per-call basis.

Dialer profiles are advantageous when:

- you want to share an interface (ISDN, asynchronous, or synchronous serial) to place or receive calls.
- you want to change any configuration on a per-user basis.
- you want to maximize the ISDN channel usage by using the Dynamic Multiple Encapsulations feature to configure various encapsulation types and per-user configurations on the same ISDN B channel at different times according to the type of call.
- you want to bridge many destinations and avoid split horizon problems.

Most routed protocols are supported; however, International Organization for Standardization Connectionless Network Service (ISO CLNS) is not supported.

If you decide to configure dialer profiles, you must disable the validation of source addresses for the routed protocols you support.

For detailed dialer profiles information, see the “Configuring Peer-to-Peer DDR with Dialer Profiles” section in the *Cisco IOS Dial Technologies Configuration Guide*, Release 12.2.

For more information about Dynamic Multiple Encapsulations, see the “Dialer Profiles Configuration Task List” section in the *Cisco IOS Dial Technologies Configuration Guide*, Release 12.2.

Legacy DDR

Legacy DDR is powerful and comprehensive, but its limitations affect scaling and extensibility. Legacy DDR is based on a static binding between the per-destination call specification and the physical interface configuration.

However, legacy DDR has many strengths. It supports Frame Relay, ISO CLNS, LAPB, snapshot routing, and all routed protocols that are supported on Cisco routers. By default, legacy DDR supports fast-switching.

For information about simple legacy DDR spoke configurations, see the “Configuring Legacy DDR Spokes” chapter in the *Cisco IOS Dial Technologies Configuration Guide*, Release 12.2. For information about simple legacy DDR hub configurations, see the “Configuring Legacy DDR Hubs” chapter in the *Cisco IOS Dial Technologies Configuration Guide*, Release 12.2.

Benefits

Improved Performance

Cisco Express Forwarding is less CPU-intensive than fast-switching route caching. More CPU processing power can be dedicated to Layer 3 services such as quality of service (QoS) and encryption.

Resilience

Cisco Express Forwarding offers an unprecedented level of switching consistency and stability in large dynamic networks. In dynamic networks, fast-switched cache entries are frequently invalidated due to routing changes. These changes can cause traffic to be process-switched by using the routing table, rather than fast-switched by using the route cache. Because the Forwarding Information Base (FIB) lookup table contains all the known routes that exist in the routing table, it eliminates route cache maintenance and the fast-switch or process-switch forwarding scenario. Cisco Express Forwarding can switch traffic more efficiently than the typical demand caching schemes.

Although you can use Cisco Express Forwarding in any part of a network, it is designed for high-performance, highly resilient Layer 3 IP backbone-switching.

Related Documents

- *Cisco IOS Dial Technologies Configuration Guide*, Release 12.2
- *Cisco IOS Dial Technologies Command Reference*, Release 12.2

Supported Platforms

- Cisco 1003 router
- Cisco 1004 router
- Cisco 1005 router
- Cisco 1600 series
- Cisco 2600 series
- Cisco 3620 series
- Cisco 3640 series
- Cisco 3660 series
- Cisco 7000 series
- Cisco 7100 series
- Cisco 7200 series
- Cisco AS5300 series
- Cisco AS5400 series

- Cisco AS5800 series

Determining Platform Support Through Feature Navigator

Cisco IOS software is packaged in feature sets that support specific platforms. To get updated information regarding platform support for this feature, access Feature Navigator. Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image.

To access Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions at <http://www.cisco.com/register>.

Feature Navigator is updated when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Feature Navigator homepage at the following URL:

<http://www.cisco.com/go/fn>

Supported Standards, MIBs, and RFCs

Standards

None

MIBs

None

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

RFCs

None

Configuration Tasks

None

Monitoring and Maintaining Dialer Cisco Express Forwarding Interfaces

To monitor and maintain Dialer Cisco Express Forwarding interfaces, use the following EXEC commands:

Command	Purpose
Router# debug ip cef	Displays debugging information about various Cisco Express Forwarding events.
Router# show adjacency	Displays Cisco Express Forwarding adjacency table information.
Router# show ip interface	Displays network layer IP information about a specified interface.

Configuration Examples

None

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