



WCCP Redirection on Inbound Interfaces

Feature History

Release	Modification
12.1(3)T	This feature was introduced.
12.1(13)E	This feature was introduced on Cisco IOS Release 12.1E for the Cisco 7200 and Cisco 7500 series routers.

This feature module describes the WCCP Redirection on Inbound Interfaces feature and includes information on the benefits of the new feature, supported platforms, configuration tasks, and a command reference.

This document includes the following sections:

- Feature Overview, page 1
- Supported Platforms, page 3
- Supported Standards, MIBs, and RFCs, page 4
- Prerequisites, page 4
- Configuration Tasks, page 4
- Configuration Example, page 6
- Command Reference, page 7
- Glossary, page 10

Feature Overview

The WCCP Redirection on Inbound Interfaces feature adds support to Cisco IOS software for the redirection of Web Cache Communication Protocol (WCCP) traffic on inbound interfaces. Prior to this release, WCCP could be configured to redirect traffic at an outbound interface only.

This feature offers better redirection performance as well as providing more flexibility in configuring WCCP.

Inbound traffic can be configured to use Cisco Express Forwarding (CEF), Fast Forwarding, or Process Forwarding.

This feature module documents only the enhancements added in Cisco IOS Releases 12.1(3)T and 12.1(13)E. For full WCCP configuration information, see the documents listed in the “Related Documents” section.

Benefits

Better Redirection Performance

Configuring WCCP for redirection for inbound traffic on interfaces allows you to avoid the overhead associated with CEF forwarding for outbound traffic. Setting an output feature on any interface results in the slower switching path of the feature being taken by all packets arriving at all interfaces. Setting an input feature on an interface results in only those packets arriving at that interface taking the configured feature path; packets arriving at other interfaces will use the faster default path. Configuring WCCP for inbound traffic also allows packets to be classified before the routing table lookup, which translates into faster redirection of packets.

Related Features and Technologies

- Cisco Cache Engines
- Web Cache Communication Protocol Version 2 (WCCPv2)
- Web Cache Control Protocol Version 1 (WCCPv1)

Related Documents

This document addresses only configuring WCCPv2 on inbound interfaces. For complete details on configuring WCCP on Cisco IOS software-based platforms, see the following documents:

- The “Configuring Web Cache Services Using WCCP” chapter of the Release 12.1 *Cisco IOS Configuration Fundamentals Configuration Guide*
- The “WCCP Router Configuration Commands” chapter of the Release 12.1 *Cisco IOS Configuration Fundamentals Command Reference*

For Cisco Cache Engine configuration information see:

- The Cisco Cache Engine, Version 2.0 User Guide and Release Notes

Supported Platforms



Note

In Cisco IOS Release 12.1(13)E, WCCP Redirection also became available on Cisco 7600 series routers and Catalyst 6500 family switches. The implementation on these platforms is different from the platforms mentioned in this document, however. For information on WCCP Redirection on Cisco 7600 series routers and Catalyst 6000 family switches, see the software guides for those particular products.

The following table lists the platforms that support the WCCP Redirection on Inbound Interfaces and the minimum IOS releases for each platform.

Table 1 WCCP Redirection on Inbound Interfaces Platform and Minimum IOS Release Support Table

Platform	Minimum IOS Release Support
Cisco 1600 series	Cisco IOS Release 12.1(3)T
Cisco 1700 series	Cisco IOS Release 12.1(3)T
Cisco 2500 series	Cisco IOS Release 12.1(3)T
Cisco 2600 series	Cisco IOS Release 12.1(3)T
Cisco 3600 series	Cisco IOS Release 12.1(3)T
Cisco 4700/m series	Cisco IOS Release 12.1(3)T
Cisco 7100 series	Cisco IOS Release 12.1(3)T
Cisco 7200 series	Cisco IOS Release 12.1(3)T Cisco IOS Release 12.1(13)E
Cisco 7500 series	Cisco IOS Release 12.1(3)T Cisco IOS Release 12.1(13)E
Cisco AS5300 series	Cisco IOS Release 12.1(3)T
Cisco AS5400 series	Cisco IOS Release 12.1(3)T
Cisco AS5800 series	Cisco IOS Release 12.1(3)T
Cisco MC3810 series	Cisco IOS Release 12.1(3)T
Ciscoubr7200 series	Cisco IOS Release 12.1(3)T

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

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

Supported Standards, MIBs, and RFCs

Standards

No new or modified standards are supported by this feature.

MIBs

No new or modified MIBs are supported by this feature.

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

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

RFCs

No new or modified RFCs are supported by this feature.

Prerequisites

Before using WCCP Version 2, the following tasks must be completed:

- Properly install and configure cache engines connected to one or more routers.
- Configure IP on the interface connected to the Internet and the interface connected to the cache engine.

Configuration Tasks

See the following sections for configuration tasks for the WCCP Redirection on Inbound Interfaces feature:

- Configuring Inbound Redirection for a Web Cache Service
- Configuring Inbound Redirection for Other Services
- Verifying WCCP Inbound Redirection

Configuring Inbound Redirection for a Web Cache Service

	Command	Purpose
Step 1	Router(config)# ip wccp web-cache	Enables WCCP and specifies a web cache service.
Step 2	Router(config)# interface <i>interface-number</i>	Targets an interface number for which a web cache service will run.
Step 3	Router(config-if)# ip wccp web-cache redirect in	Enables the check on inbound packets to determine if they qualify to be redirected.

Configuring Inbound Redirection for Other Services

	Command	Purpose
Step 1	Router(config)# ip wccp <i>service-number</i>	Enables WCCP and specifies a user-designated service (for example, Cisco Cache Engines use the value 99 to specify a Reverse-Proxy service).
Step 2	Router(config)# interface <i>interface-number</i>	Targets an interface on which the reverse proxy service will run.
Step 3	Router(config-if)# ip wccp <i>service-number</i> redirect in	Enables the check on inbound packets to determine if they qualify to be redirected.

Verifying WCCP Inbound Redirection

Use the following commands to verify and monitor the configuration settings for WCCP:

Command	Purpose
Router# show ip interface	Shows whether WCCP is configured on an interface. The output will show whether WCCP is enabled for inbound or outbound traffic, and which version of WCCP is enabled.
Router# show ip wccp [web-cache <i>service-number</i>]	Displays global information related to WCCP, including the protocol version currently running, the number of cache engines in the routers service group, which cache engine group is allowed to connect to the router, and which access list is being used. Use of the optional web-cache keyword or <i>service-number</i> argument will show information about the specified service.
Router# show ip wccp { web-cache <i>service-number</i> } detail	Displays information on which cache engines of a specific service group the router has detected. The information can be displayed for either the web cache service or the specified dynamic service.
Router# show ip wccp { web-cache <i>service-number</i> } view	Displays which devices in a particular service group have been detected and which cache engines are having trouble becoming visible to all other routers to which the current router is connected. The WCCP group view is the list of devices that are known (can be viewed) by the routing device as part of the WCCP service group. The information can be displayed for either the web cache service or the specified dynamic service.

Configuration Example

The following example shows a configuration session in which redirection of HTTP traffic arriving on interface 0/1 is enabled:

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# interface ethernet 0/1
Router(config-if)# ip wccp web-cache redirect in
Router(config-if)# ^Z
Router# show ip interface ethernet 0/1
. . .
WCCP Redirect inbound is enabled
WCCP Redirect exclude is disabled
. . .
```

Command Reference

This section documents the modified command introduced by this feature. All other commands used with this feature are documented in the Release 12.1 *Cisco IOS Configuration Fundamentals Command Reference*.

- **ip wccp redirect**

ip wccp redirect

To enable packet redirection on an outbound or inbound interface using Web Cache Communication Protocol (WCCP), use the **ip wccp redirect** interface configuration command. To disable WCCP redirection, use the **no** form of this command.

```
ip wccp {web-cache | service-number} redirect {out | in}
```

```
no ip wccp {web-cache | service-number} redirect {out | in}
```

Syntax Description

web-cache	Enables the web cache service.
<i>service-number</i>	The identification number of the cache engine service group being controlled by a router. The number can be from 0 to 99. If Cisco Cache Engines are used in the cache cluster, the reverse proxy service is indicated by a value of 99.
redirect	Enables packet redirection checking on an outbound or inbound interface.
out	Specifies packet redirection on an outbound interface.
in	Specifies packet redirection on an inbound interface.

Defaults

Redirection checking on the interface is disabled.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(3) T	This command was introduced.
12.0(11)S	The in keyword was added to the Cisco IOS Release 12.0 S release train.
12.1(3)T	The in keyword was added to the Cisco IOS Release 12.1 T release train.
12.1(13)E	The in keyword was added to the Cisco IOS Release 12.1 E release train.

Usage Guidelines

The **ip wccp redirect in** command allows you to configure WCCP redirection on an interface receiving inbound network traffic. When the command is applied to an interface, all packets arriving at that interface will be compared against the criteria defined by the specified WCCP service. If the packets match the criteria, they will be redirected.

Likewise, the **ip wccp redirect out** command allows you to configure the WCCP redirection check on an outbound interface.



Note

This command has the potential to effect the **ip wccp redirect exclude in** command. If you have **ip wccp redirect exclude in** set on an interface and you subsequently configure the **ip wccp redirect in** command, the “exclude in” command will be overridden. The opposite is also true; configuring the “exclude in” command will override the “redirect in” command.

Examples

The following example shows a configuration session in which reverse proxy packets on Ethernet interface 0 are being checked for redirection and redirected to a Cisco Cache Engine:

```
Router# configure terminal
Router(config)# ip wccp 99
Router(config)# interface ethernet 0
Router(config-if)# ip wccp 99 redirect out
```

The following example shows a configuration session in which HTTP traffic arriving on interface 0/1 will be redirected to a Cisco Cache Engine:

```
Router# configure terminal
Router(config)# ip wccp web-cache
Router(config)# interface ethernet 0/1
Router(config-if)# ip wccp web-cache redirect in
```

Related Commands

Command	Description
ip wccp redirect exclude in	Enables redirection exclusion on an interface.

Glossary

cache engine—A device that stores objects being downloaded from the Web for future use by the host.

Cisco Express Forwarding (CEF)—A scalable, distributed, Layer 3 switching solution designed to meet performance requirements of the Internet and enterprise networks. CEF can also refer to central CEF mode, one of the two modes of CEF operation that enables a route processor to perform express forwarding.

distributed CEF (dCEF)—One of two modes of CEF operation that enables line cards to perform the express forwarding between port adapters.

FIB—Forwarding information base

line card—A general term for an interface processor that can be used in a line of Cisco products. For example, a VIP is a line card for the Cisco 7500 series router.

netflow—A feature of some routers which allows them to categorize incoming packets into flows. As packets in a flow can often be treated in the same way, this classification can be used to bypass some of the work of the router and accelerate its switching operation.

service group—A group of routers and cache engines configured to run the same WCCP redirection service.

WCCP—Web Cache Communication Protocol. WCCP is a protocol for communication between routers and Web caches. Two versions currently exist: WCCP Version 1(WCCPv1) and WCCP Version 2 (WCCPv2). The two versions are incompatible. Cisco IOS images may support either of the two versions or both.