



# WCCPv2 and WCCP Enhancements

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**Release 12.0(11)S**  
**June 20, 2000**

This feature module describes the Web Cache Communication Protocol (WCCP) Enhancements feature and includes information on the benefits of the new feature, supported platforms, configuration tasks and a command reference.

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## Feature Overview

WCCP enhancements add support for WCCP Version 2 for Cisco IOS Release 12.0 (11)S. With the WCCP feature you can use Cisco Cache engines or third-party cache engines to handle web traffic, reducing transmission costs and download time. This traffic includes user requests to view pages and graphics on World Wide Web servers, whether internal or external to your network, and the replies to those requests. When a user requests a page from a web server (located in the Internet), the router sends the request to a cache engine. If the cache engine has a copy of the requested page in storage, the cache engine sends the user that page. Otherwise, the cache engine retrieves the requested page and the objects on that page from the web server, stores a copy of the page and its objects, and forwards the page and objects to the user.

WCCP transparently redirects a variety of traffic types, specified by protocol (TCP or UDP) and port. Cisco Cache Engine supports only redirection of HTTP (TCP port 80) traffic requests from the intended server to a cache engine. End users do not know that the page came from the cache engine rather than from the originally requested web server.

WCCP Version 2 for Cisco IOS 12.0 S now contains the following new features:

- [Distributed CEF Support](#)
- [Input Feature](#)
- [Policy Redirection](#)

## Distributed CEF Support

WCCP Version 2 currently supports Cisco Express Forwarding (CEF), Fast, and Process forwarding paths. CEF is advanced Layer 3 IP switching technology. CEF optimizes network performance and scalability for networks with large and dynamic traffic patterns, such as the Internet, on networks characterized by intensive Web-based applications, or interactive sessions. Distributed CEF (dCEF) is one of two modes of CEF operation that enables line cards to perform the express forwarding between port adapters.

The addition of support for distributed CEF (dCEF) improves performance and scalability by reducing processor load on the router. With dCEF packet classification and redirection takes place on the linecards.

## Input Feature

WCCP Version 2 was previously an output feature only, with packets classified by WCCP after a routing table lookup. CEF output features impose an overhead on packets arriving at all interfaces. You can now mark an interface for input redirection via the CLI. Also, you can now configure WCCP as an input feature to CEF, dCEF, Fast, and Process forwarding paths. When configured as an input feature WCCP classifies packets before the routing table reducing overhead time.

## Policy Redirection

WCCP Version 2 can now classify packets by Border Gateway Protocol (BGP) attributes associated with the source or destination IP address of a packet. You can set a WCCP tag on one or more routes based on the route BGP attributes. WCCP tags are set using a route map. You can configure a WCCP service with a source or destination tag.

After you set a WCCP tag on a route or routes, you can configure a WCCP service with the same tag. WCCP then only redirects packets coming from or going to the tagged routes. When WCCP classifies a packet it matches the packet against a service description. If the packet matches the service description WCCP performs tag matching. If the tag is a source tag, the FIB entry matching the source address of the packet is retrieved and the WCCP tag is examined. If the WCCP tag is a destination tag, the FIB entry matching the packet destination IP address is retrieved. When the FIB tag does not match the WCCP service tag, the packet is not matched against the service.

At redirection time, when a packet has been matched against a service, WCCP performs a policy check. If a policy has been set on the service, WCCP inspects the Forwarding Information Base (FIB) entry associated with the source or destination address of the packet. If the FIB WCCP tag does not match the service tag the next service will be inspected. Both service and policy matches must occur before WCCP redirects packets to a service.

## Benefits

The WCCP Version 2 provides the following benefits:

- Scalability—dCEF offers full switching capacity at each line card.
- Improved Control—finer-grained control of the types of traffic that can be redirected.
- Improved performance—dCEF is less CPU-intensive than fast or optimum switching route caching. More CPU processing power can be dedicated to Layer 3 services such as quality of service (QoS) and encryption.
- Resilience—dCEF offers an unprecedented level of switching consistency and stability in large dynamic networks. In dynamic networks, fast switching cache entries are frequently invalidated due to routing changes. These changes can cause traffic to be process switched using the routing table, rather than fast switched using the route cache. Because the FIB lookup table contains all known routes that exist in the routing table, it eliminates route cache maintenance and the fast switch/process switch forwarding scenario. dCEF can switch traffic more efficiently than typical demand caching schemes.
- Improved Configuration—simpler and easier configurations can be done when WCCP is classified as an input feature.

## Restrictions

- Policy Redirection is supported at dCEF, CEF, and Process only.

## Related Features and Technologies

- Cisco Cache Engine
- Web Cache Communication Protocol Version 2
- Web Cache Control Protocol Version 1

## Related Documents

- *Web Cache Control Protocol* Feature Module
- *Web Cache Communication Protocol v2* Feature Module
- *Cisco IOS Configuration Fundamentals Command Reference*
- *Cisco Cache Engine, Version 2.0*

## Supported Platforms

- Cisco 7200 series
- Cisco 7500 series

**Determining Platform Support Through Cisco Feature Navigator**

Use Cisco Feature Navigator to find information about platform support and Cisco IOS, Catalyst OS, and Cisco IOS XE software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

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

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

**Availability of Cisco IOS Software Images**

Platform support for particular Cisco IOS software releases is dependent on the availability of the software images for those platforms. Software images for some platforms may be deferred, delayed, or changed without prior notice. For updated information about platform support and availability of software images for each Cisco IOS software release, refer to the online release notes or, if supported, Cisco Feature Navigator.

## 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.

For descriptions of supported MIBs and how to use MIBs, see the Cisco MIB web site on CCO at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

**RFCs**

No new or modified RFCs are supported by this feature.

## Prerequisites

Before you use WCCP Version 2, you must complete the following tasks:

- 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 v2 Enhancements feature. Each task in the list indicates if the task is optional or required.

You can configure a router to run the Web cache and reverse proxy services associated with WCCP Version 2. Each service may be configured simultaneously. Perform the following tasks to configure a cluster with multiple routers.

- [Configuring a Service Group Using WCCP Version 2](#) (optional)
- [Running a Web Cache Service](#) (required)
- [Running a Reverse Proxy Service](#) (optional)
- [Registering a Router to a Multicast Address](#) (required)
- [Informing a Router of Valid IP Addresses](#) (required)
- [Setting a Password for a Router and Cache Engines](#) (optional)
- [Disabling Caching for Certain Clients](#) (optional)

## Configuring a Service Group Using WCCP Version 2

	Command	Purpose
Step 1	Router(config)# <b>ip wccp</b> {web-cache}   service-number] [group-address groupaddress] [redirect-list access-list] [group-list access-list] [password] password]	Turns the feature on for the specified service.
Step 2	Router(config-if)# <b>ip wccp</b> {web-cache   service-number} <b>redirect</b> {in   out}	Specifies redirection of incoming or outgoing packets.

## Running a Web Cache Service

	Command	Purpose
Step 1	Router(config)# <b>ip wccp web-cache</b>	Turns the protocol on for web caching.
Step 2	Router(config)# <b>interface</b> interface-number	Targets an interface number for which a web cache service will run.
Step 3	Router(config-if)# <b>ip wccp web-cache redirect out</b>	Enables the check on packets to determine if they qualify to be redirected to a web cache.

## Running a Reverse Proxy Service

	Command	Purpose
Step 1	Router(config)# <b>ip wccp 99</b>	Turns the feature on or off for the reverse proxy service. The value for reverse proxy is 99.
Step 2	Router(config)# <b>interface</b> interface-number	Targets an interface on which the reverse proxy service will run.
Step 3	Router(config-if)# <b>ip wccp 99 redirect out</b>	Specifies “out” for the reverse proxy service.

## Registering a Router to a Multicast Address

	Command	Purpose
<b>Step 1</b>	Router(config)# <b>ip wccp web-cache group-address</b> <i>groupaddress</i>	Configures the address of the group address for the service group.
<b>Step 2</b>	Router(config)# <b>interface</b> <i>interface-number</i>	Configures an interface to listen for the multicast address.
<b>Step 3</b>	Router(config-if)# <b>ip wccp web-cache group-listen</b>	Configures an interface on a router to enable or disable the reception of IP multicast packets for WCCP.

## Informing a Router of Valid IP Addresses

	Command	Purpose
<b>Step 1</b>	Router(config)# <b>ip wccp web-cache group-list</b> <b>access-list</b>	Indicates to the router which IP addresses of cache engines to accept packets from.
<b>Step 2</b>	Router(config)# <b>access-list</b> <i>access-list</i> <b>permit ip host</b> <i>host-address</i>	Creates an access list that enables or disables traffic redirection to the cache engine.

## Setting a Password for a Router and Cache Engines

	Command	Purpose
<b>Step 1</b>	Router(config)# <b>ip wccp web-cache password</b> <i>password</i>	Sets a password for the cache engine the router is trying to access.

## Disabling Caching for Certain Clients

	Command	Purpose
<b>Step 1</b>	Router(config)# <b>ip wccp web-cache redirect-list</b> <i>access-list</i>	Sets the access list used to enable redirection.
<b>Step 2</b>	Router(config)# <b>access-list</b> <i>access-list</i> <b>deny ip host</b> <i>host-address</i>	Creates an access list that enables or disables traffic redirection to the cache engine.

## Verifying WCCP Configuration Settings

- Step 1** To view the configuration, enter the **show running-config** command. A sample configuration follows:
- ```
Router# show running-config
```

```
Building configuration...
Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname router4
!
enable secret 5 $1$nSVy$faliJsVQXVPW.KuCxZNT1
enable password alabama1
!
ip subnet-zero
ip wccp web-cache
ip wccp 99
ip domain-name cisco.com
ip name-server 10.1.1.1
ip name-server 10.1.1.2
ip name-server 10.1.1.3
!
!
!
interface Ethernet0
ip address 10.3.1.2 255.255.255.0
no ip directed-broadcast
ip wccp web-cache redirect out
ip wccp 99 redirect out
no ip route-cache
no ip mroute-cache
!
interface Ethernet1
ip address 10.4.1.1 255.255.255.0
no ip directed-broadcast
ip wccp 99 redirect out
no ip route-cache
no ip mroute-cache
!
interface Serial0
no ip address
no ip directed-broadcast
no ip route-cache
no ip mroute-cache
shutdown
!
interface Serial1
no ip address
no ip directed-broadcast
no ip route-cache
no ip mroute-cache
shutdown
!
ip default-gateway 10.3.1.1
ip classless
ip route 0.0.0.0 0.0.0.0 10.3.1.1
no ip http server
!
!
!
line con 0
transport input none
line aux 0
```

```
transport input all
line vty 0 4
password alaska1
login
!
end
```

**Step 2** To view values associated with WCCP variables, enter the **show ip wccp** command. The following output is displayed:

```
Router# show ip wccp
```

```
Global WCCP information:
  Router information:
    Router Identifier:          16.4.2.1
    Protocol Version:          2.0

  Service Identifier: web-cache
    Number of Cache Engines:    0
    Number of routers:          0
    Total Packets Redirected:    0
    Total Packets Fast Redirected: 0
    Total Packets CEF Redirected: 0
    Total Packets DCEF Redirected: 0
    Redirect access-list:       -none-
    Packets Denied Redirect (ACL): 0
    Packets Denied Redirect (Policy): 0
    Total Packets Unassigned:    0
    Group access-list:          -none-
    Total Messages Denied to Group: 0
    Total Authentication failures: 0
    Policy Tag:                  0
    Policy Type:                  none
```

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# Monitoring and Maintaining WCCP Version 2

| Command                                                                | Purpose                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Router# <b>show ip wccp</b>                                            | Displays global statistics related to WCCP.                                                                                                                                                                                                                                                                                            |
| or                                                                     |                                                                                                                                                                                                                                                                                                                                        |
| Router# <b>show ip wccp</b> {web-cache   service-number}               |                                                                                                                                                                                                                                                                                                                                        |
| Router# <b>show ip wccp</b> {web-cache   service-number} <b>detail</b> | Queries the router for information about which cache engines of a specific service group the router has detected. The information can be displayed for either a web cache or the reverse proxy service, which is indicated by a value between 1 and 99.                                                                                |
| Router# <b>show ip interface</b>                                       | Displays status about whether any <b>ip wccp direct</b> commands are configured on an interface.                                                                                                                                                                                                                                       |
| Router# <b>show ip wccp</b> {web-cache   service-number} <b>view</b>   | Displays which devices in a particular service group have been detected and which cache engines are having trouble being detected by all other routers to which the current router is connected. The information can be displayed for either a web cache or the reverse proxy service, which is indicated by a value between 1 and 99. |

## Configuration Examples

This section provides the following configuration examples:

- [Selecting WCCP Version 2](#)
- [Performing a General WCCP Version 2 Configuration](#)
- [Running a Web Cache Service](#)
- [Running a Reverse Proxy Service](#)
- [Registering a Router to a Multicast Address](#)
- [Informing a Router of Valid IP Addresses](#)
- [Setting a Password for a Router and Cache Engines](#)
- [Disabling Caching for Certain Clients](#)
- [Displaying WCCP Settings](#)

## Selecting WCCP Version 2

The following example shows the process of changing the WCCP version from the default of WCCP Version 1 to WCCP Version 2:

```
show ip wccp
```

```
% WCCP version 2 is not enabled
configure terminal
ip wccp version 2
end
show ip wccp
% WCCP version 1 is not enabled
```

## Performing a General WCCP Version 2 Configuration

The following example shows a general WCCP Version 2 configuration session. WCCP only accepts a 1 to 7 character password.

```
ip wccp web-cache group-address 224.1.1.100 password alabama
interface ethernet0
ip wccp web-cache redirect out
```

## Running a Web Cache Service

The following example shows a web cache service configuration session:

```
configure terminal
ip wccp web-cache
interface ethernet 0
ip wccp web-cache redirect out
```

## Running a Reverse Proxy Service

The following example shows a reverse proxy service configuration session:

```
configure terminal
ip wccp 99
interface ethernet 0
ip wccp 99 redirect out
```

## Registering a Router to a Multicast Address

The following example shows how to register a router to a multicast address of 224.1.1.100:

```
configure terminal
ip wccp web-cache group-address 224.1.1.100
interface ethernet 0
ip wccp web cache group-listen
```

## Informing a Router of Valid IP Addresses

To achieve better security, you can notify the router which IP addresses are valid addresses for a cache engine attempting to register with the current router by using a standard access list. The following example, shows a standard access list configuration session in which the access list number is 10 for some sample hosts:

```
access-list 10 permit host 11.1.1.1
access-list 10 permit host 11.1.1.2
access-list 10 permit host 11.1.1.3
ip wccp web-cache group-list 10
```

## Setting a Password for a Router and Cache Engines

The following example shows a WCCP Version 2 password configuration session in which the password is alabama2:

```
configure terminal
ip wccp web-cache password alabama2
```

## Disabling Caching for Certain Clients

To disable caching for certain clients, servers, or client/server pairs, you can use WCCP access lists. The following example shows any requests coming from 10.1.1.1 to 12.1.1.1 will bypass the cache. while all other requests will be serviced normally:

```
configure terminal
ip wccp web-cache redirect-list 120
access-list 120 deny tcp host 10.1.1.1
access-list 120 deny tcp any host 12.1.1.1
access-list 120 permit ip any any
```

## Displaying WCCP Settings

The following example displays WCCP settings, using the **show running-config** command:

```
Router# show running-config

Building configuration...
Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname router4
!
enable secret 5 $1$nSVy$faliJsVQXVPW.KuCxZNT1
enable password alabama1
!
ip subnet-zero
ip wccp web-cache
ip wccp 99
ip domain-name cisco.com
ip name-server 10.1.1.1
ip name-server 10.1.1.2
ip name-server 10.1.1.3
!
!
!

interface Ethernet0
ip address 10.3.1.2 255.255.255.0
no ip directed-broadcast
ip wccp web-cache redirect out
ip wccp 99 redirect out
no ip route-cache
no ip mroute-cache
```

```
!  
interface Ethernet1  
ip address 10.4.1.1 255.255.255.0  
no ip directed-broadcast  
ip wccp 99 redirect out  
no ip route-cache  
no ip mroute-cache  
!  
interface Serial0  
no ip address  
no ip directed-broadcast  
no ip route-cache  
no ip mroute-cache  
shutdown  
!  
interface Serial1  
no ip address  
no ip directed-broadcast  
no ip route-cache  
no ip mroute-cache  
shutdown  
!  
ip default-gateway 10.3.1.1  
ip classless  
ip route 0.0.0.0 0.0.0.0 10.3.1.1  
no ip http server  
!  
!  
!  
line con 0  
transport input none  
line aux 0  
transport input all  
line vty 0 4  
password alaskal  
login  
!  
end
```

# Command Reference

This section documents new or modified commands. All other commands used with this feature are documented in the Cisco IOS Release 12.1 command reference publications.

- [ip wccp](#)
- [ip wccp redirect](#)
- [set ip wccp](#)

## ip wccp

To direct a router to enable or disable the support for a cache engine service group, use the **ip wccp** global configuration command. To remove the ability of a router to control support for a service group, use the **no** form of this command.

```
ip wccp { web-cache | service-number } [group-address groupaddress] [redirect-list access-list]
  [group-list access-list] [password password] [policy { source | destination } tag]
```

```
no ip wccp { web-cache | service-number } [group-address groupaddress] [redirect-list
  access-list] [group-list access-list] [password password] [policy { source | destination } tag]
```

### Syntax Description

|                       |                                                                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>web-cache</b>      | Enables the web cache service.                                                                                                                                                                                                                                                   |
| <i>service-number</i> | Enables the specified WCCP service. Services are identified using a number from 0 to 99. If a Cisco Cache Engines is used in your service group, the <b>reverse-proxy</b> service is indicated by a value of <b>99</b> .                                                         |
| <b>group-address</b>  | (Optional) Directs the router to use a specified multicast IP address for communication with the WCCP service group.                                                                                                                                                             |
| <i>groupaddress</i>   | Requires a multicast address used by the router to determine which cache engine should receive redirected messages.                                                                                                                                                              |
| <b>redirect-list</b>  | (Optional) Directs the router to use an access list to control the clients to which this redirection applies.                                                                                                                                                                    |
| <b>group-list</b>     | (Optional) Directs the router to use an access list to determine which cache engines are allowed to participate in the group.                                                                                                                                                    |
| <i>access-list</i>    | Identifies the previously configured access-list to be used.                                                                                                                                                                                                                     |
| <b>password</b>       | (Optional) A string that directs the router to add md5 authentication to messages received from the service group specified by the service name given. Messages that are not accepted by the authentication are discarded. The password can be up to seven characters in length. |
| <i>password</i>       | Identifies the password name that will be combined with the HMAC MD5 authentication algorithm value to create security for the connection between the router and the cache engine.                                                                                               |
| <b>policy</b>         | (Optional) Enables a WCCP tag to be set on a route via a route map.                                                                                                                                                                                                              |
| <b>source</b>         | Configures WCCP to retrieve the FIB entry matching source IP address of a packet.                                                                                                                                                                                                |
| <b>destination</b>    | Configures WCCP to retrieve the FIB entry matching the destination IP address of a packet.                                                                                                                                                                                       |
| <i>tag</i>            | A number in the range 1–99.                                                                                                                                                                                                                                                      |

### Defaults

WCCP services are not enabled on the router.

### Command Modes

Global configuration

**Command History**

| Release   | Modification                                                                          |
|-----------|---------------------------------------------------------------------------------------|
| 12.0(3)T  | This command was introduced.                                                          |
| 12.0(11)S | The [ <b>policy {source   destination} tag</b> ] configuration option was introduced. |

**Usage Guidelines**

This configuration command instructs a router to enable or disable the support for the service group specified by the service-name given. A service-name may be either one of the provided standard keyword definitions or a number representing a cache engine dynamically defined definition. Once the service is enabled, the router can participate in the establishment of a service group.

Currently the only provided keyword definition to be used as a service name is **web-cache**. This keyword is used to describe the existing WCCP Version 1 functionality.

When the **ip wccp** global configuration command is issued, it instructs the router to allocate space and enable support of the specified WCCP service for participation in a service group.

When the **no ip wccp** global configuration command is issued, it instructs the router to terminate participation in the service group, deallocate space if none of the interfaces still have the service configured, and terminate the WCCP task if no other services are configured.

**Note**

The **ip wccp** command has replaced the **ip wccp enable**, **ip wccp redirect-list**, and **ip wccp group-list** commands from WCCP Version 1.

The keywords following the *service-name* are optional and may be specified in any order, but only may be specified once. The following sections outline the specific usage of each of the optional forms of this command:

**ip wccp {web-cache | service-number} group-address groupaddress**

A WCCP group address can be configured to set up a multicast address that cooperating routers and web caches can use to exchange WCCP protocol messages. If such an address is used, ip multicast routing must be enabled so that the messages using the configured group (multicast) addresses are received correctly. To enable ip multicast routing, use the **ip multicast-routing** command.

This option instructs the router to use the specified multicast IP address to coalesce the I See You responses for the Here I Am messages that it has received on this group-address. The response is sent to the group-address as well. The default is for no group-address to be configured, in which case all Here I Am messages are responded to with a unicast reply.

**ip wccp {web-cache | service-number} redirect-list access-list**

This option instructs the router to use an access list to control the traffic that is redirected to the cache engines of the service group specified by the service-name given. The access-list parameter specifies either a number from 1 to 99 to represent a standard or extended access list number, or a name to represent a named standard or extended access list. The access list itself specifies what traffic is permitted to be redirected. The default is for no redirect-list to be configured (all traffic is redirected).

WCCP requires that the following protocols and ports are not filtered by any access-lists:

- UDP (protocol type 17) port 2048. This port is used for control signaling. Blocking this type of traffic will prevent WCCP from establishing a connection between the router and cache engines.
- GRE encapsulated (protocol type 47) frames. Blocking this type of traffic will prevent the cache engines from ever seeing the packets intercepted.

**ip wccp {web-cache | service-number} group-list access-list**

This option instructs the router to use an access list to control the cache engines that can participate in the specified service group. The access-list parameter specifies either a number from 1 to 99 to represent a standard access list number, or a name to represent a named standard access list. The access list itself specifies which cache engines are permitted to participate in the service group. The default is for no group-list to be configured, in which case all cache engines may participate in the service group.

**Note**

Note The **ip wccp {web-cache | service-number} group-list** command syntax resembles the **ip wccp {web-cache | service-number} group-listen** command, but these are entirely different commands. Please note that the **ip wccp group-listen** command is an interface configuration command, used to configure an interface to listen for multicast notifications from a cache cluster.

**ip wccp {web-cache | service-number} password password**

This option instructs the router to use MD5 authentication on the messages received from the service group specified by the service-name given. Use this form of the command to set the password on the router. You must also configure the same password separately on each cache engine. The password can be up to a maximum of seven characters. Messages that do not authenticate when authentication is enabled on the router are discarded. The default is for no authentication password to be configured and authentication to be disabled.

**ip wccp {web-cache | service-number} policy {source | destination} tag**

This option enables a WCCP to classify packets by some attribute of their source or destination IP addresses. You can configure a WCCP tag to be set on a route using a route map. The **source** keyword configures WCCP to retrieve the FIB entry matching a packet source IP address. The **destination** keyword configures WCCP to retrieve the FIB entry matching a packet destination IP address.

**Examples**

The following example shows a router configured to run WCCP reverse proxy service, using the multicast address of 224.1.1.1. Redirection applies to packets outgoing via interface Ethernet 0:

```
Router(config)# ip wccp 99 group-address 224.1.1.1
Router(config)# interface ethernet 0
Router(config-if)# ip wccp 99 redirect out
```

The following example configures a router to redirect web-related packets received via interface Ethernet 0/1, destined to any host but 192.168.196.51:

```
Router(config)# access-list 100 deny ip any host 192.168.196.51
Router(config)# access-list 100 permit ip any any
Router(config)# ip wccp web-cache redirect-list 100
Router(config)# interface Ethernet 0/1
Router(config-if)# ip wccp web-cache redirect in
```

**Related Commands**

| Command                    | Description                                                               |
|----------------------------|---------------------------------------------------------------------------|
| <b>set ip wccp tag tag</b> | Configures a tag against which to a packet source or destination address. |
| <b>show ip wccp</b>        | Displays global statistics related to the WCCP feature.                   |



# ip wccp redirect

To enable packet redirection on an outbound or inbound interface using WCCP, use the **ip wccp redirect** {out | in} interface configuration command. To disable the ability of a router to verify that appropriate packets are being redirected, 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

|                       |                                                                                                                                                                                                                                                  |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>web-cache</b>      | 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 a Cisco Cache Engines is used in the cache cluster, the <b>reverse proxy</b> service is indicated by a value of 99. |
| <b>redirect</b>       | Enables packet redirection on an outbound or inbound interface.                                                                                                                                                                                  |
| <b>out</b>            | Specifies packet redirection on an outbound interface.                                                                                                                                                                                           |
| <b>in</b>             | 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 <b>in</b> keyword was added. |

## Examples

The following example shows that reverse proxy packets on Ethernet interface 0 are being checked for redirection and redirected to a Cisco Cache Engine, beginning in global configuration mode:

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

## Related Commands

| Command                            | Description                                    |
|------------------------------------|------------------------------------------------|
| <b>ip wccp redirect exclude in</b> | Enables redirection exclusion on an interface. |

# set ip wccp

To tag a route with a WCCP tag, use the **set ip wccp tag tag** route-map configuration command.

**set ip wccp tag tag**

|                           |                                            |                                   |
|---------------------------|--------------------------------------------|-----------------------------------|
| <b>Syntax Description</b> | <i>tag</i>                                 | A number in the range of 1 to 99. |
| <b>Defaults</b>           | Routes are not configured with a WCCP tag. |                                   |
| <b>Command Modes</b>      | Route-map configuration                    |                                   |
| <b>Command History</b>    | <b>Release</b>                             | <b>Modification</b>               |
|                           | 12.0(11)S                                  | This command was introduced.      |

## Examples

The following example tags a route with the WCCP 50 tag:

```
ip cef distributed
!
ip wccp version 2
ip wccp web-cache password <pass> policy source 50
# enable WCCP standard web-cache
# service, apply policy "source"-
# match on WCCP route-tag 50
!
interface <xyz>
ip wccp web-cache redirect in
!
ip bgp-community new-format
ip community-list 3 permit 4433:1050
ip community-list 3 permit 4433:1055
!
ip as-path access-list 121 permit ^65521$
ip as-path access-list 121 permit ^65522
!
route-map neighbor-xyz-in permit 10
match as-path 121
set ip wccp 50
!
route-map neighbor-xyz-in permit 15
match community 3
set ip wccp 50
```

|                         |                                                                               |                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Related Commands</b> | <b>Command</b>                                                                | <b>Description</b>                                                                                |
|                         | <b>ip wccp {web-cache   service-number} policy {source   destination} tag</b> | Enables a WCCP to classify packets by some attribute of their source or destination IP addresses. |

# 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.

**service group**—A subset of cache engines within a cluster of routers and routers that are connected to the cluster that are running the same service.

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

