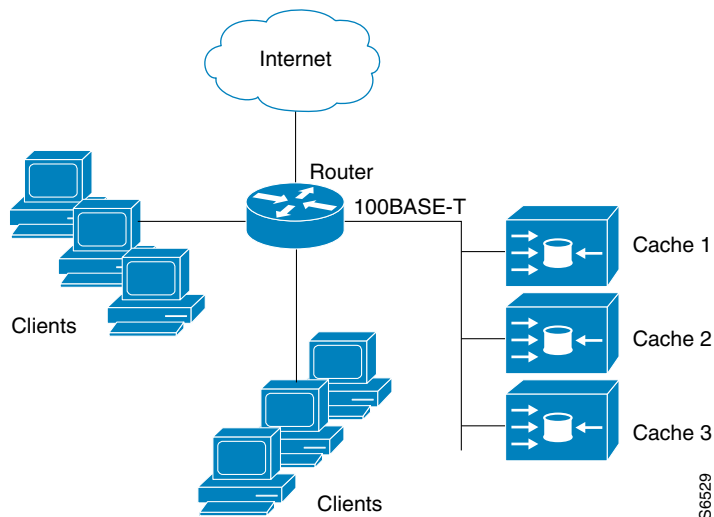


# Web Cache Control Protocol

## Description

The Web Cache Control Protocol (WCCP) feature allows you to use a Cisco Cache Engine to handle web traffic, thus reducing transmission costs and downloading 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. Figure 1 shows a sample WCCP network configuration.

**Figure 1** Sample Cisco Cache Engine Network Configuration



When a user (client) requests a page from a web server (located in the Internet, in this case), the router sends the request to a Cisco Cache Engine (Cache 1, Cache 2, or Cache 3). If the cache engine has a copy of the requested page in storage, the engine sends the user that page. Otherwise, the engine gets the requested page and the objects on that page from the web server, stores a copy of the page and its objects (caches them), and forwards the page and objects to the user.

WCCP transparently redirects HTTP requests from the intended server to a Cisco Cache Engine. End users do not know that the page came from the cache engine rather than the originally requested web server.

The *Using the Cisco Cache Engine* publication contains detailed information about the Cisco Cache Engine and discusses alternative network configurations.

## Benefits

Web caches reduce transmissions costs and the amount of time required to download web files. If a client requests a web page that is already cached, the request and data only have to travel between the Cisco Cache Engine and the client. Without a web cache, the request and reply must travel over the Internet or wide-area network. Cached pages can be loaded faster than non-cached pages and do not have to be transmitted from the Internet to your network.

Cisco IOS support of WCCP provides a transparent web cache solution. Users can benefit from web proxy caches without having to configure clients to contact a specific proxy server in order to access web resources. Many web proxy caches require clients to access web resources through a specific proxy web server rather than using the originally requested web server URL. With WCCP, the clients send web requests to the desired web server URL. Cisco IOS routers intelligently intercept HTTP requests and transparently redirect them to a Cisco Cache Engine.

## Redirection Process

When a Web Cache Control Protocol-enabled router receives an IP packet, the router determines if the packet is a request that should be directed to a Cisco Cache Engine. The router looks for TCP as the protocol field in the IP header and for 80 as the destination port in the TCP header. If the packet meets these criteria, it is redirected to a Cisco Cache Engine.

Through communication with the Cisco Cache Engines, the routers running WCCP are aware of available cache engines.

## Changes for Release 11.1(18)CA and Release 11.2(13)P

In Cisco IOS Release 11.1(18)CA and Release 11.2(13)P, the following changes were made:

- The **ip wccp redirect-list** command was added.
- The output of the **show ip wccp** command was changed to include access list information.
- The **ip wccp** command was changed to **ip wccp enable**.

## Platforms

In Release 11.1 CA, this feature is supported on these platforms:

- Cisco 7200 series
- Cisco 7500 series

In Release 11.2 P, this feature is supported on these platforms:

- Cisco 2500 series
- Cisco 3600 series
- Cisco 4000 series
- Cisco 4500 series
- Cisco 4700 series
- Cisco 5200 series
- Cisco 5300 series

- Cisco 7000 series with RSP7000
- Cisco 7200 series
- Cisco 7500 series
- Catalyst 5000

## Prerequisites

To use the Web Cache Control Protocol, IP must be configured on the interface connected to the Internet and the interface connected to the Cisco Cache Engine.

The interface connected to the Cisco Cache Engine must be an Ethernet or Fast Ethernet interface.

## Configuration Tasks

To configure the Web Cache Control Protocol on the router, you must perform the following tasks. The first task is required, while the second is optional.

- Enable the Web Cache Control Protocol on the Router
- Monitor the Web Cache Control Protocol

### Enable the Web Cache Control Protocol on the Router

To enable an interface to redirect web traffic to the Cisco Cache Engine using the Web Cache Control Protocol, perform the following tasks beginning in global configuration mode:

Task	Command
<b>Step 1</b> Enable the router to use the Web Cache Control Protocol.	<b>ip wccp enable</b>
<b>Step 2</b> (Optional) Specify the redirect access list. Only packets that match this access list are redirected. If you do not configure this command, all web-based packets are redirected.	<b>ip wccp redirect-list</b> {number   name}
<b>Step 3</b> Enter interface configuration mode.	<b>interface</b> interface
<b>Step 4</b> Configure the interface connected to the Internet to redirect web traffic to the Cisco Cache Engine.	<b>ip web-cache redirect</b>
<b>Step 5</b> (Optional) If the client and a Cisco Cache Engine are located on the same network, configure the router to use the fast switching path on the interface.	<b>ip route-cache same-interface</b>
<b>Step 6</b> Exit configuration mode.	<b>end</b>
<b>Step 7</b> Save the configuration.	<b>copy running-config startup-config</b>

### Monitor the Web Cache Control Protocol

To monitor the Web Cache Control Protocol, perform any of the following tasks in EXEC mode:

Task	Command
Display global Web Cache Control Protocol statistics.	<b>show ip wccp</b>

Task	Command
Display information about all known Cisco Cache Engines.	<b>show ip wccp web-caches</b>
Show whether web cache redirecting is enabled on an interface.	<b>show ip interface</b>

The **show ip wccp** and **show ip wccp web-caches** commands display a count of the number of packets redirected. Use the **clear ip wccp EXEC** command to clear this counter.

## Configuration Example

The following example configures a router to support the Web Cache Control Protocol and to redirect web-related packets from Ethernet interface 0 to the Cisco Cache Engine:

```
Router# configure terminal
Router(config)# ip wccp enable
Router(config)# interface Ethernet 0
Router(config-if)# ip web-cache redirect
Router(config-if)# end
Router#
%SYS-5-CONFIG_I: Configured from console by console.
Router# copy running-config startup-config
```

After the router has been configured, use the **show ip wccp web-cache** command to verify that Web Cache Control Protocol is enabled and aware of Cisco Cache Engines. In this example, the **show ip wccp web-cache** command is entered immediately after the router has been configured. After a few seconds, the cache engine becomes usable, as seen in the second output.

```
Router# show ip wccp web-cache

WCCP Web-Cache information:
  IP Address:          192.168.51.102
  Protocol Version:   0.3
  State:              NOT Usable
  Initial Hash Info:  FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
                    FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
  Assigned Hash Info: 00000000000000000000000000000000
                    00000000000000000000000000000000
  Hash Allotment:    0 (0.00%)
  Packets Redirected: 0
  Connect Time:     00:00:06
```

```
Router# show ip wccp web-cache

WCCP Web-Cache information:
  IP Address          192.168.51.102
  Protocol Version:   0.3
  State:              Usable
  Initial Hash Info:  FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
                    FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
  Assigned Hash Info: FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
                    FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
  Hash Allotment:    256 (100.00%)
  Packets Redirected: 0
  Connect Time:     00:00:31
```

## Command Reference

This section documents new or modified commands. All other commands used with this feature are documented in the Cisco IOS Release 11.1 or Release 11.2 command references.

- **clear ip wccp**
- **ip wccp enable**
- **ip wccp redirect-list**
- **ip web-cache redirect**
- **show ip interface**
- **show ip wccp**
- **show ip wccp web-caches**

## clear ip wccp

To clear the counter for packets redirected by the Web Cache Control Protocol, use the **clear ip wccp EXEC** command.

**clear ip wccp**

### Syntax Description

This command has no arguments or keywords.

### Command Mode

EXEC

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.2 P and Cisco IOS Release 11.1 CA.

The “Packets Redirected” count is displayed by the **show ip wccp** and **show ip wccp web-caches** commands.

### Sample Display

The following example shows output from the **show ip wccp web-caches** command before and after the **clear ip wccp** command is used:

```
Router# show ip wccp web-caches

WCCP Web-Cache information:
  IP Address:          192.168.88.11
  Protocol Version:   1.0
  State:              Usable
  Initial Hash Info:  AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
                    AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
  Assigned Hash Info: FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
                    FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
  Hash Allotment:     256 (100.00%)
  Packets Redirected: 21345
  Connect Time:      00:13:46

Router# clear ip wccp
Router# show ip wccp web-caches

WCCP Web-Cache information:
  IP Address:          192.168.88.11
  Protocol Version:   1.0
  State:              Usable
  Initial Hash Info:  AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
                    AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
  Assigned Hash Info: FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
                    FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
  Hash Allotment:     256 (100.00%)
  Packets Redirected: 0
  Connect Time:      00:13:46
```

## Related Commands

**show ip wccp****show ip wccp web-caches**

## ip wccp enable

To enable the router to support the Web Cache Control Protocol, use the **ip wccp enable** global configuration command. The **no** form of this command disables support for the Web Cache Control Protocol.

```
ip wccp enable  
no ip wccp enable
```

### Syntax Description

This command has no arguments or keywords.

### Default

The Web Cache Control Protocol is disabled on the router.

### Command Mode

Global configuration

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.2 P and Release 11.1 CA.

This command and the **ip web-cache redirect** interface command are the only commands required to start redirecting requests to the Cisco Cache Engine using the Web Cache Control Protocol. To see if the Web Cache Control Protocol is enabled on the router, use the **show ip wccp** command.

When this command is enabled but the **ip web-cache redirect** command is disabled, the router is aware of caches but does not use them.

Use the **ip wccp redirect-list** command to limit the redirection of packets to those matching an access list.

### Example

The following example configures a router to support the Web Cache Control Protocol and redirects web-related packets from Ethernet interface 0 to the Cisco Cache Engine:

```
Router# configure terminal  
Router(config)# ip wccp enable  
Router(config)# interface Ethernet 0  
Router(config-if)# ip web-cache redirect  
Router(config-if)# end  
Router#  
%SYS-5-CONFIG_I: Configured from console by console.
```

### Related Commands

```
ip wccp redirect-list  
ip web-cache redirect  
show ip wccp  
show ip wccp web-caches
```

## ip wccp redirect-list

To specify which packets are redirected to a Cisco Cache Engine, use the **ip wccp redirect-list** global configuration command. The **no** form of this command enables redirection of all packets.

```
ip wccp redirect-list {number | name}
```

### Syntax Description

<i>number</i>	Standard or extended IP access list number from 1 to 199.
<i>name</i>	Standard or extended IP access list name. This argument is only available in Release 11.2 P.

### Default

All HTTP packets are redirected to the Cisco Cache Engine.

### Command Mode

Global configuration

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.2 P and Release 11.1 CA.

Use this command to specify which packets should be redirected to the Cisco Cache Engine. When WCCP is enabled but this command is not configured, all web-related packets are redirected to the Cisco Cache Engine. When you enter this command, only packets that match the access list are redirected.

Some Web sites use the source IP address of packets for authentication. The Cisco Cache Engine uses its own IP address when sending requests to Web sites. Thus, the requests from the Cisco Cache Engine may not be authenticated. Use this command to bypass the Cisco Cache Engine in these cases.

Use the **ip wccp enable** and **ip web-cache redirect** commands to configure WCCP.

### Example

The following example configures a router to redirect web-related packets without a destination of 192.168.196.51 to the Cisco Cache Engine:

```
Router# configure terminal
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 enable
Router(config)# ip wccp redirect-list 100
Router(config)# interface Ethernet 0
Router(config-if)# ip web-cache redirect
Router(config-if)# end
Router#
%SYS-5-CONFIG_I: Configured from console by console.
```

Related Commands

**clear ip wccp**  
**ip wccp enable**  
**ip web-cache redirect**  
**show ip wccp**

## ip web-cache redirect

To instruct an interface to check for appropriate outgoing packets and redirect them to a Cisco Cache Engine, use the **ip web-cache redirect** interface configuration command. The **no** form of this command disables the redirection of messages to the Cisco Cache Engine.

```
ip web-cache redirect  
no ip web-cache redirect
```

### Syntax Description

This command has no arguments or keywords.

### Default

The interface does not redirect messages to the Cisco Cache Engine.

### Command Mode

Interface configuration

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.2 P and Release 11.1 CA.

This command and the **ip wccp enable** interface command are the only commands required to start redirecting requests to the Cisco Cache Engine using the Web Cache Control Protocol.

### Example

The following example configures a router to support the Web Cache Control Protocol and redirects web-related packets from Ethernet interface 0 to the Cisco Cache Engine:

```
Router# configure terminal  
Router(config)# ip wccp enable  
Router(config)# interface Ethernet 0  
Router(config-if)# ip web-cache redirect  
Router(config-if)# end  
Router#  
%SYS-5-CONFIG_I: Configured from console by console.
```

### Related Commands

```
clear ip wccp  
ip wccp enable  
ip wccp redirect-list  
show ip interface  
show ip wccp  
show ip wccp web-caches
```

## show ip interface

To display the usability status of interfaces configured for IP, use the **show ip interface** EXEC command.

```
show ip interface [type number]
```

### Syntax Description

<i>type</i>	(Optional) Interface type.
<i>number</i>	(Optional) Interface number.

### Command Mode

EXEC

### Usage Guidelines

This command first appeared in Cisco IOS Release 10.0.

The Cisco IOS software automatically enters a directly connected route in the routing table if the interface is usable. A usable interface is one through which the software can send and receive packets. If the software determines that an interface is not usable, it removes the directly connected routing entry from the routing table. Removing the entry allows the software to use dynamic routing protocols to determine backup routes to the network (if any).

If the interface can provide two-way communication, the line protocol is marked “up.” If the interface hardware is usable, the interface is marked “up.”

If you specify an optional interface type, you will see only information on that specific interface.

If you specify no optional arguments, you will see information on all the interfaces.

When an asynchronous interface is encapsulated with PPP or SLIP, IP fast switching is enabled. A **show ip interface** command on an asynchronous interface encapsulated with PPP or SLIP displays a message indicating that IP fast switching is enabled.

### Sample Display

The following is sample output from the **show ip interface** command:

```
Router# show ip interface

Ethernet0 is up, line protocol is up
  Internet address is 192.195.78.24, subnet mask is 255.255.255.240
  Broadcast address is 255.255.255.255
  Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is not set
  Secondary address 131.192.115.2, subnet mask 255.255.255.0
  Directed broadcast forwarding is enabled
  Multicast groups joined: 224.0.0.1 224.0.0.2
  Outgoing access list is not set
  Inbound access list is not set
  Proxy ARP is enabled
  Security level is default
  Split horizon is enabled
  ICMP redirects are always sent
```

```

ICMP unreachable are always sent
ICMP mask replies are never sent
IP fast switching is enabled
IP fast switching on the same interface is disabled
IP SSE switching is disabled
Router Discovery is disabled
IP output packet accounting is disabled
IP access violation accounting is disabled
TCP/IP header compression is disabled
Probe proxy name replies are disabled
Web Cache Redirect is enabled

```

Table 1 describes the fields shown in the display.

**Table 1 Show IP Interface Field Descriptions**

Field	Description
Ethernet0 is up	If the interface hardware is usable, the interface is marked “up.” For an interface to be usable, both the interface hardware and line protocol must be up.
line protocol is up	If the interface can provide two-way communication, the line protocol is marked “up.” For an interface to be usable, both the interface hardware and line protocol must be up.
Broadcast address	Shows the broadcast address.
Address determined by...	Indicates how the IP address of the interface was determined.
MTU	Shows the MTU value set on the interface.
Helper address	Shows a helper address, if one has been set.
Secondary address	Shows a secondary address, if one has been set.
Directed broadcast forwarding	Indicates whether directed broadcast forwarding is enabled.
Multicast groups joined	Indicates the multicast groups this interface is a member of.
Outgoing access list	Indicates whether the interface has an outgoing access list set.
Inbound access list	Indicates whether the interface has an incoming access list set.
Proxy ARP	Indicates whether Proxy ARP is enabled for the interface.
Security level	Specifies the IPSO security level set for this interface.
ICMP redirects	Specifies whether redirects will be sent on this interface.
ICMP unreachable	Specifies whether unreachable messages will be sent on this interface.
ICMP mask replies	Specifies whether mask replies will be sent on this interface.
IP fast switching	Specifies whether fast switching has been enabled for this interface. It is generally enabled on serial interfaces, such as this one.
IP SSE switching	Specifies whether IP SSE switching is enabled.
Router Discovery	Specifies whether the discovery process has been enabled for this interface. It is generally disabled on serial interfaces.
IP output packet accounting	Specifies whether IP accounting is enabled for this interface and what the threshold (maximum number of entries) is.
TCP/IP header compression	Indicates whether compression is enabled or disabled.
Probe proxy name	Indicates whether HP Probe proxy name replies are generated.
Web Cache Redirect	Indicates whether HTTP packets are redirected to a Cisco Cache Engine.

## show ip wccp

To display global statistics related to the Web Cache Control Protocol, use the **show ip wccp EXEC** command.

**show ip wccp**

### Syntax Description

This command has no arguments or keywords.

### Command Mode

EXEC

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.2 P and Release 11.1 CA.

Use the **clear ip wccp** command to reset the counter for the “Packets Redirected” information.

### Sample Display

The following example shows sample **show ip wccp** output:

```
Router# show ip wccp

Global WCCP information:
  Number of web-caches:          2
  Total Packets Redirected:      101
  Redirect access-list:          no_linux
  Total Packets Denied Redirect: 88
  Total Packets Unassigned:      0
```

Table 2 describes fields shown in this example.

**Table 2 Show IP WCCP Field Descriptions**

Field	Description
Number of web-caches	Number of Cisco Cache Engines using the router as their home router.
Total Packets Redirected	Total number of packets redirected by the router.
Redirect access-list	Name or number of the redirect access list. Only packets matching the access list are redirected.
Total Packets Denied Redirect	Total number of packets that were not redirected because they did not match the access list.
Total Packets Unassigned	Number of packets that were not redirected because they were not assigned to any web cache. Packets may not be assigned during initial discovery of Cisco Cache Engines or when a cache is dropped from a farm.

## Related Commands

**clear ip wccp****ip wccp enable****ip wccp redirect-list****ip web-cache redirect****show ip interface****show ip wccp web-caches**

## show ip wccp web-caches

To display information about the router’s known Cisco Cache Engines, use the **show ip wccp web-caches** EXEC command.

**show ip wccp web-caches**

### Syntax Description

This command has no arguments or keywords.

### Command Mode

EXEC

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.2 P and Release 11.1 CA.

Use the **clear ip wccp** command to reset the counter for the “Packets Redirected” information.

### Sample Display

The following example shows sample **show ip wccp web-caches** output:

```
Router# show ip wccp web-caches

WCCP Web-Cache information:
  IP Address:          192.168.88.11
  Protocol Version:   1.0
  State:              Usable
  Initial Hash Info:  AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
                    AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
  Assigned Hash Info: FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
                    FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
  Hash Allotment:     256 (100.00%)
  Packets Redirected: 21345
  Connect Time:       00:13:46
```

Table 3 explains the fields shown in this display.

**Table 3 Show IP WCCP Web-Caches Field Descriptions**

Field	Description
IP Address	IP address of the Cisco Cache Engine.
Protocol Version	Version of the Web Cache Control Protocol the Cisco Cache Engine is running.
State	State of the Cisco Cache Engine. Possible values are “Usable” and “NOT Usable.”
Initial Hash Info	Initial contents of the hash field. The hash field contains information about how the router intends to use the Cisco Cache Engine.
Assigned Hash Info	Current hash information of the Cisco Cache Engine. The hash information field contains information about how the router intends to use the Cisco Cache Engine.

**Table 3 Show IP WCCP Web-Caches Field Descriptions (Continued)**

<b>Field</b>	<b>Description</b>
Hash Allotment	Percentage of all possible web servers for which the router redirects HTTP requests to this Web cache. In this example, there is only one Cisco Cache Engine, so all HTTP requests are redirected to it.
Packets Redirected	Number of packets redirected to this Cisco Cache Engine.
Connect Time	Indicates how long the Cisco Cache Engine has used this router as its home router.

**Related Commands**

**clear ip wccp**  
**ip wccp enable**  
**ip web-cache redirect**  
**show ip interface**  
**show ip wccp**

## Debug Commands

This section documents the following new debug commands:

- **debug ip wccp events**
- **debug ip wccp packets**

### debug ip wccp events

Use the **debug ip wccp events** EXEC command to display information about significant Web Cache Control Protocol events. The **no** form of this command disables debugging output.

**[no] debug ip wccp events**

#### Sample Display

Figure 2 shows sample **debug ip wccp events** output when a Cisco Cache Engine is added to the list of available Web caches.

**Figure 2 Sample Debug IP WCCP Events Output**

```
Router# debug ip wccp events

WCCP-EVNT: Built I_See_You msg body w/1 usable web caches, change # 0000000A
WCCP-EVNT: Web Cache 192.168.25.3 added
WCCP-EVNT: Built I_See_You msg body w/2 usable web caches, change # 0000000B
WCCP-EVNT: Built I_See_You msg body w/2 usable web caches, change # 0000000C
```

## debug ip wccp packets

Use the **debug ip wccp packets** EXEC command to display information about every Web Cache Control Protocol packet received or sent by the router. The **no** form of this command disables debugging output.

```
[no] debug ip wccp packets
```

### Sample Display

Figure 3 shows sample **debug ip wccp packets** output. The router is sending keepalive packets to the Cisco Cache Engines at 192.168.25.4 and 192.168.25.3. Each keepalive packet has an identification number associated with it. When the Cisco Cache Engine receives a keepalive packet from the router, it sends a reply with the identification number back to the router.

**Figure 3** Sample Debug IP WCCP Packets Output

```
Router# debug ip wccp packets

WCCP-PKT: Received valid Here_I_Am packet from 192.168.25.4 w/rcvd_id 00003532
WCCP-PKT: Sending I_See_You packet to 192.168.25.4 w/ rcvd_id 00003534
WCCP-PKT: Received valid Here_I_Am packet from 192.168.25.3 w/rcvd_id 00003533
WCCP-PKT: Sending I_See_You packet to 192.168.25.3 w/ rcvd_id 00003535
WCCP-PKT: Received valid Here_I_Am packet from 192.168.25.4 w/rcvd_id 00003534
WCCP-PKT: Sending I_See_You packet to 192.168.25.4 w/ rcvd_id 00003536
WCCP-PKT: Received valid Here_I_Am packet from 192.168.25.3 w/rcvd_id 00003535
WCCP-PKT: Sending I_See_You packet to 192.168.25.3 w/ rcvd_id 00003537
WCCP-PKT: Received valid Here_I_Am packet from 192.168.25.4 w/rcvd_id 00003536
WCCP-PKT: Sending I_See_You packet to 192.168.25.4 w/ rcvd_id 00003538
WCCP-PKT: Received valid Here_I_Am packet from 192.168.25.3 w/rcvd_id 00003537
WCCP-PKT: Sending I_See_You packet to 192.168.25.3 w/ rcvd_id 00003539
```

## What to Do Next

To use WCCP, the Cisco Cache Engine must be properly configured. Refer to the *Using the Cisco Cache Engine* publication for details on configuring the Cisco Cache Engine. Keep these important points in mind:

- The IP address of the router must be configured as the home router for the Cisco Cache Engine.
- Versions of software on the Cisco Cache Engines must be compatible with the router.
- The Cisco Cache Engines must not have their packets encrypted or compressed and should be part of the “inside” Network Address Translation if one is present.
- Placing a Cisco Cache Engine beyond a web-cache-redirect enabled interface and along the route to the server will not cause the IP route cache to be populated with an entry.

