Cisco WCCP Feature Overview

The Web Cache Communication Protocol (WCCP) feature allows you to use a Cisco Cache Engine to handle web traffic, 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. 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 Hypertext Transfer Protocol (HTTP) requests from the intended server to a cache engine. End users do not know that the page came from the cache engine rather than the originally requested web server.

WCCP v2 now contains the following new features:

* Multiple router support
* Improved security
* Faster throughput
* Redirection of multiple TCP port-destined traffic
* Load distributing applications capability
* Client IP addressing transparency

**Multirouter Support**

WCCP v2 enables a series of cache engines, called a cache engine cluster, to connect to multiple routers. This feature provides redundancy and a more distributed architecture for instances when a cache engine needs to connect to a large number of interfaces. This strategy also has the benefit of keeping all the cache engines in a single cluster, avoiding unnecessary duplication of web pages across several clusters.

**How Version 1 Works**

With WCCP-Version 1, only a single router services a cluster, becoming the default home router for the cluster. In this scenario, this router is the device that performs all the IP packet redirection. Figure 1 illustrates how this configuration appears.

The following sequence of events details how this process works:

1. Each cache engine records the IP address of the router servicing the cluster.
2. The cache engines then transmit their IP addresses to the router, indicating their presence to one another in the cluster.
3. The router then replies to the cache engines, establishing that each can connect to the other in the cluster, providing a view or a list of cache engine addresses in the cluster, indicating that each can recognize each other.
4. Once the view has been established, one cache engine is designated as the lead and indicates to the router how IP packet redirection should be performed. The lead cache engine is defined as one seen by all the routers in the service group and that has the lowest IP address. Figure 1 illustrates how this configuration appears.

Figure 1 Cisco Cache Engine Network Configuration Using WCCP-Version 1



**How Version 2 Works**

With WCCP v2, multiple routers can service a cluster, creating contention between available routers to obtain status as the device that redirects packets for data coming from each of the cache engines in the cluster. Figure 2 illustrates how this configuration appears. You can configure the router to run one of two services:

* Web cache which is a global service that sends content to a large collection of destination World Wide Web servers.
* Reverse proxy which is a local service that sends content to a small number of destination World Wide Web servers.
* The subset of cache engines within a cluster and routers connected to the cluster that are running the same service is known as a service group.
* WCCP v2 addresses the issue of multiple routers being available to the cluster by allowing either a list of routers or an IP multicast address to be created on the cache engine. The difference in these two strategies is as follows:
* In the multiple router strategy, the cache engine sends a notification of its presence to an explicit router address.
* In the multicast address strategy, the cache engine sends a notification to one address, which provides coverage for all routers in the service group, for example, 224.0.0.0, which will indicate packets be sent to a multicast address of 224.0.0.0 which would send a multicast packet to all routers in the service group.