



PORTrockIT

Web Cache Communication Protocol

Setup Guide

Eli-v6.4.84

Bridgeworks

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1 Introduction

This document is intended to guide a user through the setup of Web Cache Communication Protocol version 2 (*WCCPv2*) for use with Bridgeworks PORTrockIT technology. It covers the WCCP-specific configuration steps required, on both a Cisco network device (router) and a PORTrockIT Node, in order to set up a typical WCCP system.

1.1 WCCP Overview

With WCCP configured, local TCP traffic from an endpoint host is redirected from a router to an acceleration agent, and then either accelerated or transparently returned to the router for normal forwarding, as appropriate.

WCCP allows for endpoint hosts to configure their local router as their gateway, rather than using a PORTrockIT Node directly, when using PORTrockIT acceleration. Additionally, if the connection to the Node is disrupted, traffic will fall back to non-accelerated transfer and continue uninterrupted. This minimises the administrative setup required for endpoint hosts to utilise PORTrockIT acceleration, and increases availability by providing a fallback path, as well as the possibility of redundancy.

2 Definitions

Service Group A group of one or more routers, and one or more web-caches, which negotiate parameters for the redirection of certain network traffic from the router(s) to the web-cache(s) in the group. This traffic is either processed or accelerated by the web-cache, or rejected and returned to the router for normal forwarding.

Service ID A numeric value used to identify a particular service group on a network.

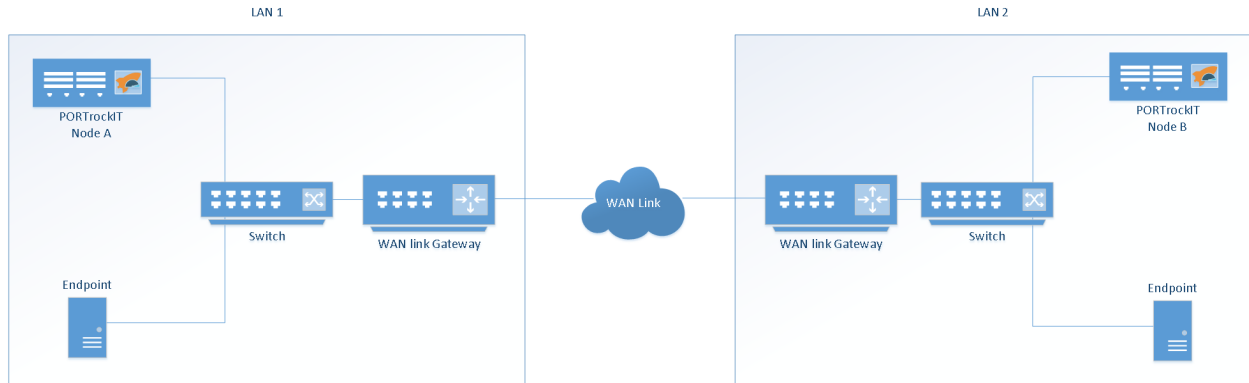
Web-cache A network device that will receive redirected traffic. This will be a PORTrockIT Node/Nodes in this setup. Each network interface on a Node which receives redirected traffic acts as a single logical web-cache.

Router In the context of WCCP and throughout this guide, "router" refers to a Cisco network device which will redirect received traffic to web-caches if appropriate.

Endpoint A host machine sending/receiving protocol data to be accelerated by PORTrockIT technology, as well as possibly other, non-accelerated data.

3 Topology & Requirements

In order to demonstrate WCCP configuration and usage, this guide uses a simple example PORTrockIT topology:



If your environment requires usage of more advanced WCCP settings available on the Node or Cisco network device (*router*) in use, which may not be covered in this guide, consult your PORTrockIT product manual and your router’s documentation for more information.

This guide assumes that there is an active connection between the two PORTrockIT Nodes in each local area network (LAN). Each Node should have a protocol relationship configured in *Logical-In-Path* mode for the appropriate local subnet.

For more general Node setup information, see the appropriate guides/manuals for your platform and specific PORTrockIT product.

WCCPv2 can be configured for one or both LANs. The router for each LAN for which you wish to configure WCCP must support WCCP version 2 (WCCPv2). The following is required:

- Administrative credentials for the router
- A connection from the router to the Node using an IPv4 address
- The endpoint(s) must connect to the router via a network interface distinct from the one which the Node is connected to. This may require the Node and endpoint(s) to use different subnets

4 Procedure

4.1 Router configuration

Access the command line terminal for the router. Ensure administrative access is enabled. This may require use of the `enable` command, followed by the administrator password.

To set the WCCP version, enter configuration mode with the following command:

```
conf t
```

Configuration mode can be ended by pressing Control + Z (necessary to view current settings and information).

The router should have the WCCP version set to 2 by default. To ensure this is the case, use the following command in configuration mode:

```
ip wccp version 2
```

To create a new service group, choose a service ID. This can be any number from 1 to 255. 0 is reserved for HTTP traffic. The service ID should not already be in use on your router or local network.

Enable the service group with the `ip wccp <Service ID>` command. E.g. if your chosen service group is 100, enter the following in configuration mode:

```
ip wccp 100
```

Then enable redirection on the interface to which the endpoint host is connected. E.g. for the service ID 100, and interface `FastEthernet0/1`:

```
interface FastEthernet0/1
ip wccp 100 redirect in
```

Then add a redirection list by entering the following:

```
ip wccp 100 redirect-list 120
```

Which would permit all TCP traffic from the specified host.

You may optionally configure a password for the service group. This will require the Node, and any other web-cache, to supply authentication information when negotiating to join the service group.



Important: The service group password option does not add encryption to the negotiation procedure, and adds absolutely no security measures to any endpoint traffic. It should not replace any other appropriate security measures taken on your network.

To configure a password you must append it to the same command that adds the redirection list. Enter the following command

`ip wccp <Service ID> redirect-list <Redirect List> password <Password>` in configuration mode. E.g. for service ID 100, redirection list 120, and password `pass1`:

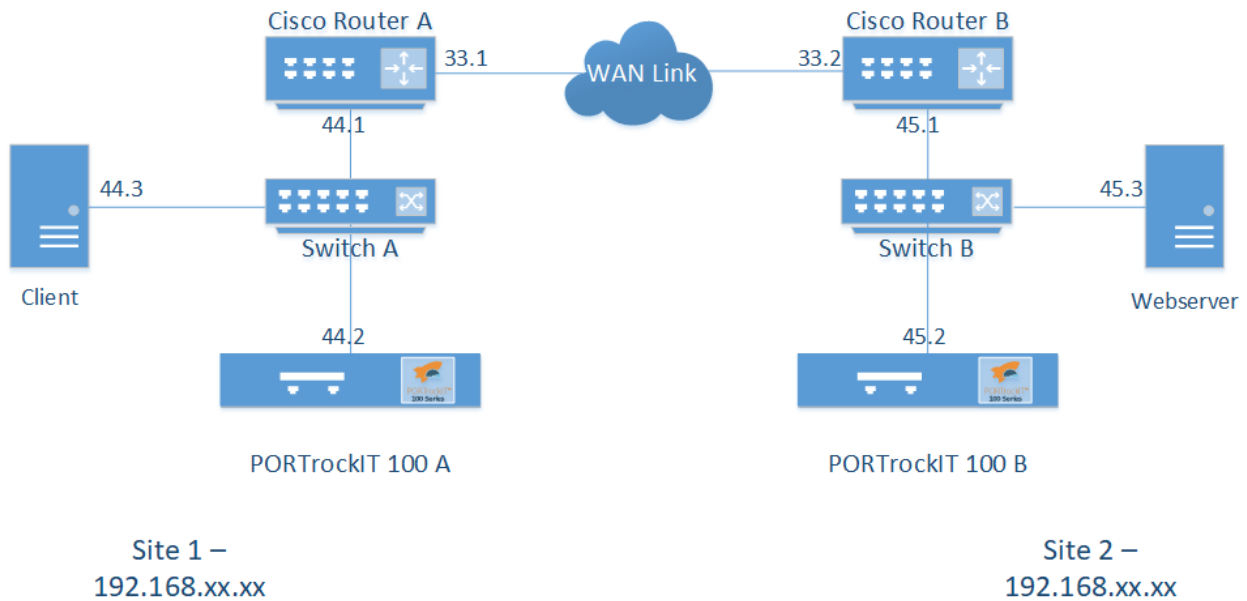
```
ip wccp 100 redirect-list 120 password pass1
```

Then an access-control-list (ACL) by entering the following:

```
access-list 120 permit tcp host 172.16.1.1 any
```

This will create an access-list with the ID of 120 and hook all tcp traffic with the source address of 172.16.1.1 and any destination address.

Alternatively, to hook in packets from only specific ports using IPs from the below example topology, the following commands can be entered on *Cisco Router A* in configuration mode to hook HTTP traffic:



```
access-list 120 permit tcp host 192.168.44.3 eq www host 192.168.45.3
```

Breaking down this command:

- Parameter 1: 120 - Extended access list ID.
- Parameter 2: permit - Permit traffic matching the following rules. Use deny to invert.
- Parameter 3: tcp - Permit TCP traffic.
- Parameter 4: host 192.168.44.3 eq www - Permit packets using port 80 from the source IP 192.168.44.3.
- Parameter 5: host 192.168.45.3 - Permit packets with the destination IP 192.168.45.3

Run the following command outside of configuration mode:

```
show ip wccp
```

The command

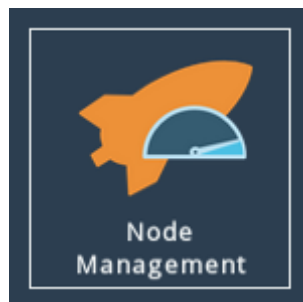
show IP WCCP will display the following, if our service group has been created successfully.

```
Global WCCP information:
  Service Identifier: 100
  Protocol Version:      2.00
  Number of Service Group Clients: 1
  Number of Service Group Routers: 1
  Total Packets s/w Redirected: 0
    Process:             0
    CEF:                 0
    Platform:            0
  Service mode:          Open
  Service Access-list:  -none-
  Total Packets Dropped Closed: 0
  Redirect access-list: -none-
  Total Packets Denied Redirect: 0
  Total Packets Unassigned: 0
  Group access-list:    -none-
  Total Messages Denied to Group: 0
  Total Authentication failures: 0
  Total Bypassed Packets Received: 0
```

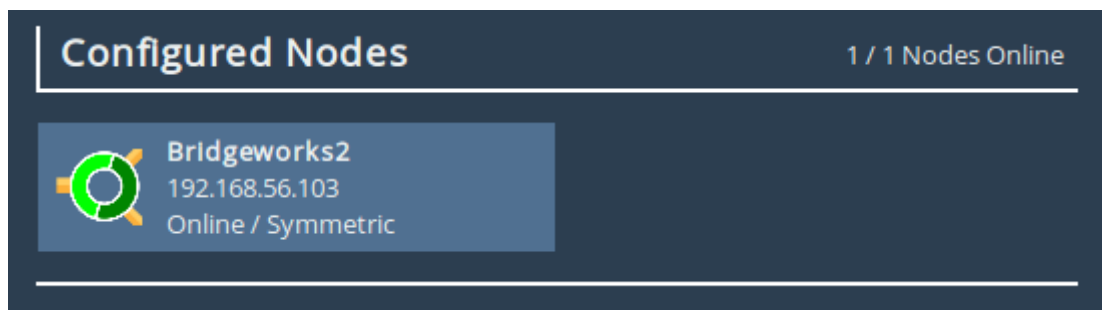
4.2 Node Configuration

Navigate to the Node's web interface and login.

From the Home screen, select the *Node Management* icon under the *PORTrockIT* section.



Select the corresponding remote Node for the protocol relationship(s) which will utilise WCCP.



Select WCCPv2.



Select the *Enabled* checkbox.

Enter the router IP address to which the Node connects in the *Router Address* field.

Enter your chosen service ID into the *Service ID* field.

If you are using password authentication for the service group, enter the password in the *Password* field.

A screenshot of the WCCPv2 configuration form. The form has a light gray background and a dark blue border. At the top left, the title "WCCPv2" is displayed. Below the title, there are four fields: "Enabled:" with a checked checkbox, "Router Address:" with a text input field containing "10.10.136.14", "Service ID:" with a text input field containing "100", and "Password:" with an empty text input field. At the bottom of the form, there are four buttons: "Show Advanced", "Clear Configuration", "Cancel", and "Save".

Click Save.

To confirm that the Node has successfully joined the service group, return to the *WCCPv2* page. Under *Service Group Status*, the *State* field will display *Usable*, rather than *Not Usable*. This may take up to 30 seconds. The page does not need to be refreshed to get an updated status.

A screenshot of the Service Group Status panel. The panel has a dark blue background and a white border. At the top left, the title "Service Group Status" is displayed. Below the title, there are four rows of status information: "State: Usable", "Uptime: 00:01", "Forwarding: L2", and "Return Method: L2". At the bottom left, there is a line of text: "Connected Routers: 1 / 1". At the bottom right, there is a "More Info" button.

4.3 Endpoint reconfiguration

Endpoints should be configured to use the router as their default gateway.

If your endpoints were previously configured to use PORTrockIT acceleration in "Logical-In-Path" mode without WCCP, they will have a routing rule which redirects some or all traffic to the local Node. This should be removed and replaced with a rule directing the traffic to the router.

If the default gateway for the endpoints' network segment was not previously the WCCP-enabled router in question, the router may need further routing configuration in order to forward non-accelerated traffic to the previously-used gateway network device.

5 Useful Links

The following section contains links to other guides and FAQs. Support is available through our website: <https://support.4bridgeworks.com/>

The following resources are available online:

- [User Manuals](#)
- [Installation Guides](#)
- [General FAQ](#)
- [AWS FAQ](#)

If your question is not answered in our documentation, please [submit a ticket](#) through our website.