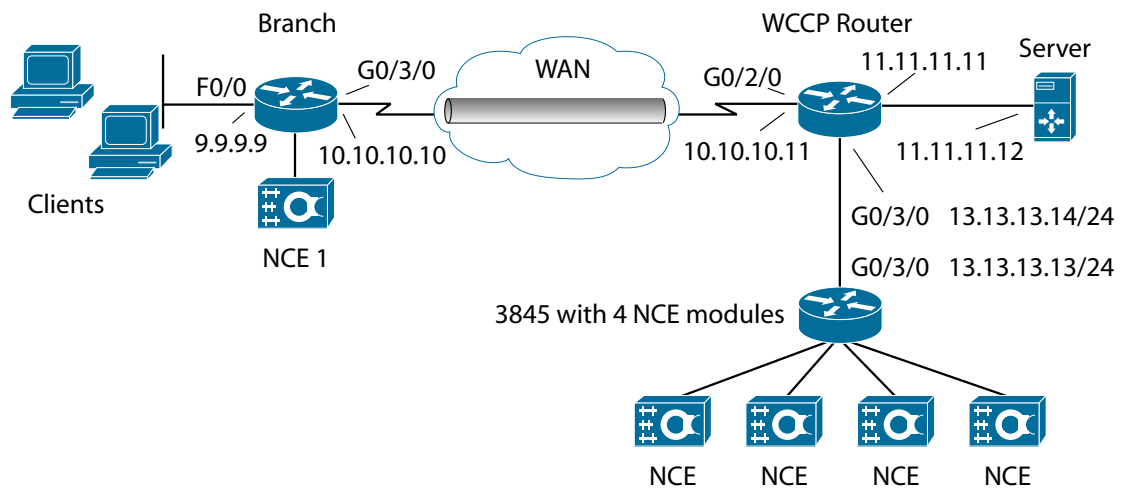


Sample Configuration

Figure 9-1 shows the topology for the configuration examples in this section.

Figure 9-1 WCCP Topology



Other IP addresses

2811 - SM IP address: 7.7.7.8 Transport opt IP address: 7.7.7.7

3845 - SM1 IP address 14.14.14.15 Transport opt IP address 14.14.14.14

3845 - SM2 IP address 16.16.16.17 Transport opt IP address 16.16.16.16

Sample Configurations for Hash-based Load Balancing

Branch-side Configuration

NCE Module Configuration

```

tpo wccp group-id 3 bind map-tpo-id

tpo id 4
default policy-action compress-sctp
bandwidth-profile default-sctp
wccp group-id 3
sctp-peer 14.14.14.15 tos 0
exit
tpo id 6
bandwidth 3000 2000
default policy-action compress-sctp
bandwidth-profile rate-control
wccp group-id 3
sctp-peer 16.16.16.17 tos 0
sctp-peer 16.16.16.17 tos 1
sctp-peer 16.16.16.17 tos 2
sctp-peer 16.16.16.17 tos 3
sctp-peer 16.16.16.17 tos 4
sctp-peer 16.16.16.17 tos 5
sctp-peer 16.16.16.17 tos 6
sctp-peer 16.16.16.17 tos 7
exit

tpo lookup tpo-id

```

Cisco IOS Configuration



Note

TPO ID in Cisco IOS should be same as the WCCP group ID in the NCE configuration.

```

interface Tunnel0
ip address 100.100.100.100 255.255.0.0
transport-opt 3 interface Transport-Opt-Service-Engine4/0
tunnel source GigabitEthernet0/1/0
tunnel destination 10.10.10.10

```

Data Center Configuration

The following example shows the Cisco IOS configuration on the NCE router with two NCE service modules.

```

interface GigabitEthernet0/2/0
ip address 13.13.13.14 255.255.0.0

interface Transport-Opt-Service-Engine0/1
ip address 14.14.14.14 255.255.0.0
load-interval 30
service-module ip address 14.14.14.15 255.255.0.0
service-module ip default-gateway 14.14.14.14
hold-queue 60 out
end

interface Transport-Opt-Service-Engine1/0
ip address 16.16.16.16 255.255.0.0

```

```

load-interval 30
service-module ip address 16.16.16.17 255.255.0.0
service-module ip default-gateway 16.16.16.16
hold-queue 60 out

ip route 0.0.0.0 0.0.0.0 13.13.13.13

ip route 14.14.14.15 255.255.255.255 Transport-Opt-Service-Engine0/1
ip route 16.16.16.17 255.255.255.255 Transport-Opt-Service-Engine1/0

```

NCE Configurations on Modules 1 and 2

Configuration is the same for both modules.

```

tpo wccp 61

tpo wccp load-balance hash src-ip dst-ip

tpo wccp router-list 13.13.13.13

tpo id 1
default policy-action compress-sctp
bandwidth-profile high-speed-sctp
bind 0.0.0.0 0.0.0.0
sctp-peer 7.7.7.8 tos 0
sctp-peer 7.7.7.8 tos 1
sctp-peer 7.7.7.8 tos 2
sctp-peer 7.7.7.8 tos 3
sctp-peer 7.7.7.8 tos 4
sctp-peer 7.7.7.8 tos 5
sctp-peer 7.7.7.8 tos 6
sctp-peer 7.7.7.8 tos 7
exit

tpo lookup bind

```

WCCP Router

```

ip wccp 61

interface Tunnel0
 ip address 100.100.100.101 255.255.0.0
ip wccp 61 redirect out //To redirect packets on WAN to NCE modules.
 tunnel source GigabitEthernet0/3/0
 tunnel destination 10.10.10.11
 crypto map MAP

interface GigabitEthernet0/1/0
 description CONNECTED TO Data Center Module Router
 ip address 13.13.13.13 255.255.0.0
 load-interval 30
 negotiation auto

ip route 0.0.0.0 0.0.0.0 Tunnel0

ip route 14.14.14.0 255.255.255.0 13.13.13.14
ip route 16.16.16.0 255.255.255.0 13.13.13.14

```

Configuration for Mask-based Load Balancing

Branch router configurations are similar to hash-based configurations.

For the Data Center router housing the NCE service modules, you must configure the concurrent routing and bridging (CRB) in Cisco IOS.

```
bridge crb
!
interface GigabitEthernet0/0
 ip address 13.13.13.14 255.255.0.0
 duplex auto
 speed auto
 bridge-group 1
!
!
interface Transport-Opt-Service-Engine1/0
 ip unnumbered GigabitEthernet0/0
 service-module ip address 13.13.13.15 255.255.0.0
 service-module ip default-gateway 13.13.13.14
 bridge-group 1
 hold-queue 60 out
!
interface Transport-Opt-Service-Engine0/0
 ip unnumbered GigabitEthernet0/0
 service-module ip address 13.13.13.16 255.255.0.0
 service-module ip default-gateway 13.13.13.14
 bridge-group 1
 hold-queue 60 out

ip route 0.0.0.0 0.0.0.0 50.50.50.50
ip route 13.13.13.15 255.255.255.255 Transport-Opt-Service-Engine1/0
ip route 13.13.13.16 255.255.255.255 Transport-Opt-Service-Engine0/0

bridge 1 protocol ieee
```

NCE Configuration on the Head-end Module

Configuration is the same on both modules in the router.

```
tpo wccp 61

tpo wccp load-balance mask src-ip-mask 0x0 dst-ip-mask 0x1741 src-port-mask 0x0
dst-port-mask 0x0

tpo wccp router-list 13.13.13.13

tpo id 1
 default policy-action compress-sctp
 bandwidth-profile high-speed-sctp
 bind 0.0.0.0 0.0.0.0
 sctp-peer 7.7.7.8 tos 0
 sctp-peer 7.7.7.8 tos 1
 sctp-peer 7.7.7.8 tos 2
 sctp-peer 7.7.7.8 tos 3
 sctp-peer 7.7.7.8 tos 4
```

```
sctp-peer 7.7.7.8 tos 5  
sctp-peer 7.7.7.8 tos 6  
sctp-peer 7.7.7.8 tos 7  
exit
```

```
tpo lookup bind
```

