

Configuring SNCP

SNCP is a protection mechanism for SDH networks that enables SDH connections to switch to another SDH circuit when a circuit failure occurs. A protection interface serves as the backup interface for the working interface. When the working interface fails, the protection interface quickly assumes its traffic load.

The SDH protection schemes partially comply with ITU-T G.707 standard. It allows Optical Interface Module to work seamlessly as SDH Add or Drop Multiplexers (ADMs). The implementation of the above protection schemes allows a pair of SDH lines or paths to be configured for line or path redundancy. In the event of a fiber cut, the active line or path switches automatically to the standby line or path up to 60 milliseconds (2/5/10 millisecond for holdover and 50 millisecond switchovers).

Optical Interface Module supports the following SDH protection switching schemes:

- SNCP Path Protection at STS Level
- SNCP Path Protection at VT Level

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Restrictions for SNCP

- SNCP is not supported on port 8 of the IM with STM-64 rate configured.
- SNCP is supported on AU-3 —VC-3 SDH mode and not supported on AU-4 —VC-3 mode.

SNCP Path Protection

SNCP is a unidirectional network with two rings, one ring used as the working ring and the other as the protection ring. The same signal flows through both rings, one clockwise and the other counterclockwise. It is called SNCP because monitoring is done at the path layer. A node receives two copies of the electrical signals at the path layer, compares them, and chooses the one with the better quality. If part of a ring between two ADMs fails, the other ring still can guarantee the continuation of data flow. SNCP, like the one-plus-one scheme, has fast failure recovery.

SNCP Path Protection is supported at VC level and STM level.

Once a signal fail condition or a signal degrade condition is detected, the hardware initiates an interrupt to software that switches from the working path to the protection path. Non-revertive options are valid for SNCP path protection.



Note 1X OC-192 and 8X OC-48 interface modules only supports the non-revertive option. The non-revertive option is the default mode.

The maximum scale supported on SNCP at system level is 1000 circuits.

Configuring SNCP

Protection Group Controller Configuration

```
enable
configure terminal
protection group 1 type vc4-16c
controller protection group 1
type vc4-16c
cem-group 16001 cep
end
```

Working Path Configuration

```
enable
configure terminal
controller sdh 0/3/6
au-4 1-16 mode vc4-16c
protection group 1 working
end
```

Protect Path Configuration

```
enable
configure terminal
controller sdh 0/12/6
au-4 1-16 mode vc4-16c
protection group 1 protect
end
```

CEM Group Configuration

```
enable
configure terminal
controller sdh 0/4/1
au-4 1-16 mode vc4-16c
cem-group 1 cep
end
```

Local Connect Configuration

```
enable
configure terminal
connect lc cem 0/4/1 1 cem-pg 1 16001
end
```

Verification of SNCP Configuration

Use **show protection-group** command to verify SNCP configuration:

```
#show protection-group
PGN   Type    Working I/f                Protect I/f              Active Status
-------------------------------------------------------------------------------
1     VC4-16C SDH0/3/6.1-48              SDH0/12/6.1-48             P         A
-------------------------------------------------------------------------------
Status legend:D=Deleted FO=Force SF=SignalFailure SD=SignalDegrade
                        FL=Fail M=Manual L=Lockout C=Clear A=Auto
 (W)=working, (P)=protect
```