Span Loss
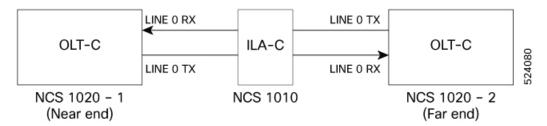
This chapter describes the Span Loss optical application for Cisco NCS 1020.

Overview of Span Loss

The Span Loss calculation is an automatic calculation of span losses between NCS 1020 and NCS 1010(amplifer) nodes. The span loss verification algorithm calculates span loss by comparing power measurements at line Tx/Rx port at far end and line Rx/Tx port at near end. The algorithm raises the *Span Loss Value Out Of Range* alarm if span loss is not within configured thresholds.

Figure 1: Sample two node topology

For example, in the previous figure, the **Tx Span Loss** on NCS 1020-1 is the difference in signal power between LINE 0 Tx on NCS 1020-1 and LINE 0 Rx on NCS 1010.

The span loss application reports the span loss value for a span every 90 seconds. If span loss changes, for example when a change in fiber loss occurs, the span loss application typically takes 90 seconds to update the span loss.

On non-Raman spans, span loss verification reports the Span Loss value:

- **Span loss**: The span loss algorithm calculates span loss by comparing Tx/Rx power measurement at line port at far end and Rx/Tx power measurement at line port at near end.

View Span Loss Values

Use the **show olc span-loss** command to view the Tx span loss and Rx span loss.

The following sample shows the output of the **show olc span-loss** command on a Raman span with Raman tuning enabled.

The following sample shows the output of the **show olc span-loss** command on a non-Raman span.

```
RP/0/RP0/CPU0:ios#show olc span-loss
Mon Apr 11 09:37:31.950 UTC

Controller name                            : Ots0/0/0/0
Neighbour RID                              : 10.91.1.90
Rx Span Loss                               : 10.2 dB
Rx Span Loss (with pumps off)              : NA
Rx Span Loss (with pumps off) measured at  : NA
Estimated Rx Span Loss                     : NA
Tx Span Loss                               : 9.7 dB
Tx Span Loss (with pumps off)              : NA
Tx Span Loss (with pumps off) measured at  : NA
Estimated Tx Span Loss                     : NA
```

Configure Span Loss Thresholds

The system raises a Span Loss Value Out Of Range alarm under the following conditions:

- Span loss is greater than the maximum threshold.

- Span loss is less than the minimum threshold.

You can configure the span loss thresholds using the following commands.

configure

optical-line-control

controller ots *Rack/Slot/Instance/Port*

span-loss min *value*

span-loss max *value*

commit

end

Note The minimum and maximum threshold values must be in the range 0.0 to 42.0 dB in multiples of 0.1 dB (0-420). The minimum threshold must be lower than the maximum threshold.