NCS 1010 Overview and Optical Applications

This chapter gives a brief overview of the optical applications on NCS 1010. See NCS 1010 Overview for the product overview.

NCS 1010 software has multiple optical applications to help bring up the link and maintain traffic on the link.

Document objective

The Cisco Network Convergence System (NCS) 1010 platform includes these configuration guides.:

- The *Cisco NCS 1010 System Setup and Software Installation Guide* describes how to bring up the NCS 1010 system and perform the required software installation.
- The *Cisco NCS 1010 Datapath Configuration Guide* describes how to configure various datapaths on NCS 1010.
- The *Cisco NCS 1010 Optical Applications Configuration Guide* describes multiple optical applications on NCS 1010 that help to bring up the link and maintain traffic.

Document organization

This document is organized into these chapters.

Chapter	Description
Internode Topology Discovery and Communication	The NCS 1010 platform enables topology discovery by using OSPF.
Span Loss	The span loss application measures span loss between two nodes for a given direction. It also verifies whether the span loss is within the configured range.
Raman Tuning	The Raman tuning application sets Raman pump powers for optimum gain and spectral gain flatness.

Chapter	Description
Gain Estimator	The gain estimator application computes the power transmitted from the upstream node. It analyzes incoming span loss, adjusts the gain mode of the EDFA amplifier, and provides the initial target gain.
Link Tuner	The link tuner application uses actual optical measurements such as span loss to compute and configure the target power spectral density (PSD) for each span.
Automatic Power Control	The Automatic Power Control (APC) configures amplifier and attenuator set points to achieve target PSD across the link.
Upgrade C-Band to C+L Band Without Affecting Traffic Flow	Upgrade from C-band to the C+L band network to avoid affecting network traffic flow.
Automatic Network Turn Up	All the optical applications work together to bring up the DWDM link. This chapter describes the process of bringing up the link, and how these applications operate together.
Configure OTDR	The Optical Time Domain Reflectometer (OTDR) application scans and determines loss in signal power and identifies where the loss occurs on the fiber path.