

Operation and Maintenance of Optical Transport Networks



Overview

Described in the ITU-T Recommendation G. 709 (2003), OTN adds operations, administration, maintenance, and provisioning (OAM&P) functionality to optical carriers, specifically in a multi-wavelength system such as dense wavelength division multiplexing (DWDM). The complexity and heterogeneity of modern optical transport networks (OTNs) demand advanced solutions to enhance their operation and maintenance. This paper presents lessons learned from the design and implementation of a digital twin network (DTN) tailored to network operators' requirements. Since the 1980s, synchronous optical network(ing)/synchronous digital hierarchy (SONET/SDH) has met these needs by providing protection and performance monitoring while supporting a flexible and transparent mix of traffic protocols including Internet Protocol (IP), Fibre Channel, Ethernet, and. ogies, mesh, ring, and point to point. OTN specifies a digital wrapper, which.

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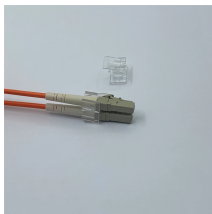
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In short, OTNs will apply the operations, administration, maintenance, and provisioning (OAM& P) functionality of SONET/SDH to DWDM optical networks. The OTN is specified in the International ...



Abstract The complexity and heterogeneity of modern optical transport networks (OTNs) demand advanced solutions to enhance their operation and maintenance.



The OTN structure, in addition to the physical media layer network that defines the optical fiber type, consists of three layers—the optical channel, the optical multiplex section, and the optical ...



This article focuses on the system/network supervision and operation and maintenance, which are of great importance for the success of the optical transport network.



This Recommendation describes the functional architecture of optical transport networks (OTNs) using the modelling methodology described in [ITU-T G.800] and [ITU-T G.805] for the digital layer ...



This reliance on 2 separate networking technologies incurs unnecessary costs and complexity, requires maintaining 2 types of equipment and spare parts, adds complexity to OSS (Operations Support ...



Generally, these two are viewed as complimentary technologies; relatively small, purely IP networks will be built following the optical internetworking vision, but larger more complex networks will require ...



Services today run over routers, Optical Transport Network (OTN) switches, optical transponders, and Reconfigurable Optical Add-Drop Multiplexers (ROADMs) on a traditionally multi-layered architecture ...

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