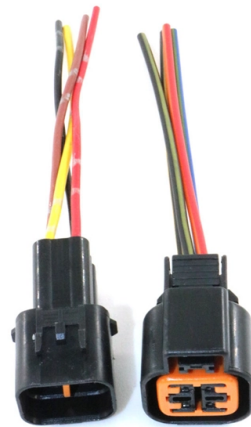


Intelligent Agent for Optical Network Switches



Overview

This comprehensive analysis examines the complete spectrum of scripting and automation paradigms for optical fiber and optical networking engineers, covering foundational concepts, cutting-edge technological frameworks, vendor-specific solutions including emerging platforms like. This comprehensive analysis examines the complete spectrum of scripting and automation paradigms for optical fiber and optical networking engineers, covering foundational concepts, cutting-edge technological frameworks, vendor-specific solutions including emerging platforms like. In this paper, we propose a GenAI-driven hierarchical multi-agent framework designed to streamline multi-task autonomous execution for zero-touch optical networks. We present the architecture, implementation, and applications of this framework. A field-deployed mesh network is utilized to. [Barcelona, Spain, March 2, 2026] At the Huawei product and solution launch event during MWC Barcelona 2026, Bob Chen, President of Huawei Optical Business Product Line, unveiled Next Generation Optical Network products and solutions to foster synergy between AI and networks, accelerating the. The International Telecommunication Union (ITU) has released a new framework to guide the evolution of global optical connectivity in the age of artificial intelligence (AI). The framework – International Optical Networks towards 2030 and Beyond (ION-2030) – was developed by ITU-T Study Group 15. An optical switch, also known as an optical line switching device (automatic switching type optical patch panel), is a device that enables the network to be always connected.) or communication speed (1GbE, 100GbE, etc. Significant. Today, Cisco routed optical networking has been deployed by more than 300 customers, replacing dense wavelength division multiplexing (DWDM) transponders with coherent pluggable optics in metro and data center interconnect applications. The introducti...

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Design of high speed optical switches for intelligent optical networks ...

Traditional optical networks are gradually evolving towards intelligent optical networks due to the need for faster bandwidth provisioning, protection and restoration of the network, which can be

ION-2030: Enabling the intelligent optical network era

AI technologies are reshaping how optical networks are designed, managed, and optimized. Using digital twins, multimodal learning, and autonomous control, AI-enabled operations

Digital Twin and AI Agent for Autonomous Optical Networks

This tutorial presents key enabling technologies including digital twin and AI Agent to realize zero-touch autonomous operations of optical networks. The applications of LLM in this paradigm will also be

Machine learning for intelligent optical networks: A comprehensive ...

ML techniques are proved to have superiority on solving complex problems, and thus recently, ML techniques have been used for many optical network applications. In this paper, a

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Integrated Intelligent Agent for SNMP-Based Network ...

The i-SNMP agent can be implemented on other network nodes, such as switches or servers. Because of the distributed agent architecture, the i-SNMP agent is able to monitor and

Generative AI-Driven Hierarchical Multi-Agent Framework for Zero

In this paper, we propose a GenAI-driven hierarchical multi-agent framework designed to streamline multi-task autonomous execution for zero-touch optical networks. We present the

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Artificial Intelligence (AI) for Network Operations

The document addresses AINetOps for both single-layer IP or Optical networks and multi-layer IP/Optical networks. It defines the concept of AINetOps for networking and provides its

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Tremendous advances in optics, routing and switching, and AI infrastructure have been made in the past two decades, delivering orders of magnitude more capacity than 20 years ago.

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Intelligent OptiX Network | OptiX | All-Optical

Huawei's intelligent OptiX network strategy aims to build intelligent, simplified, ultra-broadband, and ubiquitous next generation all-optical networks.

Huawei Launches Next Generation Optical Network

In the optical transmission domain, Huawei has released Next Generation OTN products for OTN backbone, OTN optical layer, and OTN metro

ION-2030: Enabling the intelligent optical network era

Conversely, optical networks enable AI by providing the high-capacity, low-latency, and deterministic connectivity needed for distributed AI training, real-time inference, and data exchange

Intelligent Optical Switch | Network Equipment

By switching the path using an optical switch, you can switch at once without making mistakes such as incorrectly inserting the optical fiber connector or staining the

Optical Network Automation – MapYourTech

The landscape of modern optical networks is undergoing a revolutionary transformation driven by unprecedented bandwidth demands,

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In this paper, we firstly discuss the requirements for adopting AI approaches in optical networks. Then, we review various recent progress of AI

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This paper presents a new optical network architecture based on the PCE (Path Computation Element) by adding a PCE-Agent to intelligently control

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Reconfiguring the network topology for datacenter traffic is a popular topic in networking and optics communities. Several academic papers demonstrated the benefits of optically reconfigurable circuit

AI agent for autonomous optical networks: architectures, technologies ...

This tutorial provides a comprehensive overview of the evolution toward autonomous optical networks (AONs), where large language model (LLM)-based artificial intelligence (AI) agents

The Future is Now: How AI Empowers Intelligent Switches

The rapid evolution of artificial intelligence (AI) is reshaping industries, and networking infrastructure is no exception. Intelligent switches, the

An Intelligent and Mobile Agent-based Approach for Dynamic

The QoS-based end-to-end optical channel allocation and protection requirements for future mesh optical networks remain an important subject of research. At the University of Fribourg, the OPTIMN

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