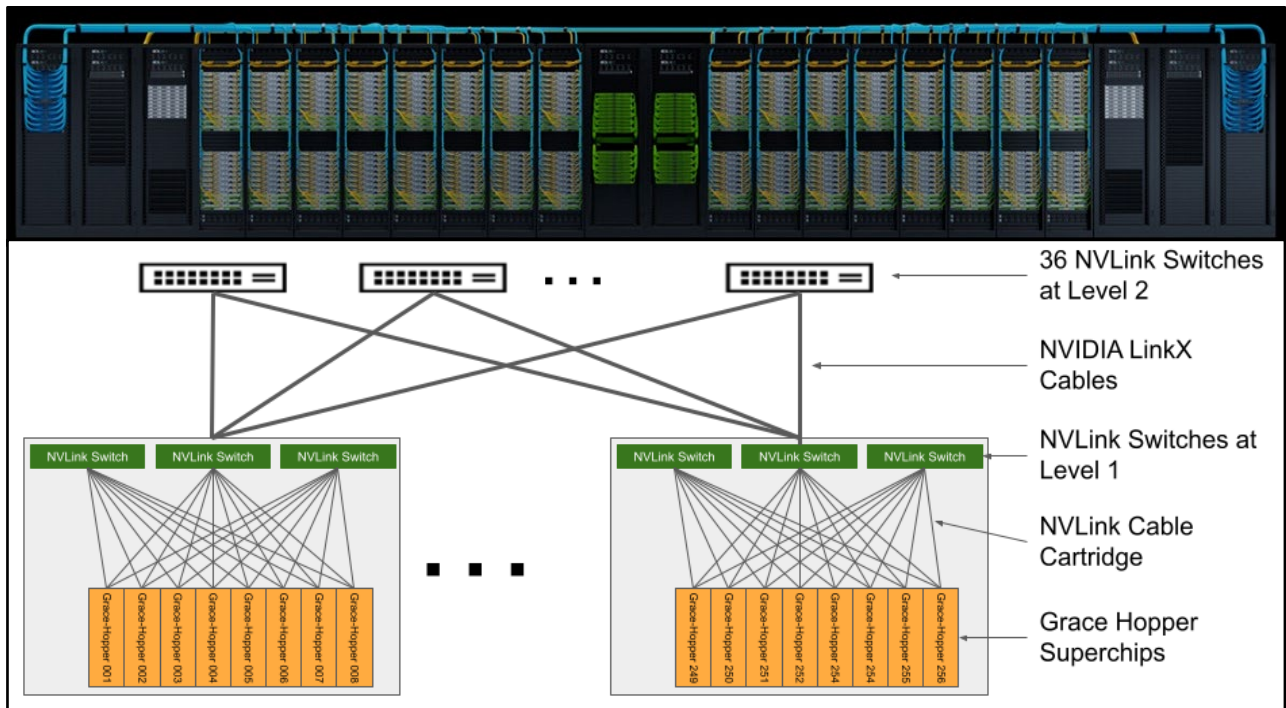


OPTICS FOR AI CLUSTERS

JANUARY 2024

AI creates a new wave in demand for optical transceivers.



Source: Nvidia

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Abstract

This report explores the evolving role of optics in AI Clusters, covering both connectivity and switching. It features data for the sales of optical transceivers for compute nodes and AI Clusters in Cloud datacenters for 2021-2023 with a forecast for 2024-2029. Importantly, the forecast includes detailed models for the deployment of optics in AI Clusters (back-end networks) at Amazon, Google, Meta, Microsoft and Alibaba, to illustrate the differences between the optics used in compute nodes (front-end networks). A detailed analysis of the pivotal role being played by optical connectivity including NVLink and CXL/PCIe in the implementation of AI Cluster architectures is central to this report.

The report is based on confidential sales information provided by optical components vendors, as well as detailed analysis of publicly available data released by leading component and equipment manufacturers along with considerable input from industry experts.

LightCounting Market Research

LightCounting is a market research company focused on the in-depth study of high-speed interconnects for the datacom, telecom, and consumer communications markets. Our research covers the whole supply chain from optical and semiconductor components, to modules, sub-systems, and their applications in telecom and datacom systems.

Our industry reputation was built by providing solid market data and objective analysis to help industry executives in making tactical and strategic business decisions and seeing past all the market hype, rumors, press reports, blogs and other distortions that so often complicate and confuse many decision-making processes.

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