AI'S GROWTH IN DATA CENTERS

Do You Have the Infrastructure Required to Support Cutting-Edge AI?

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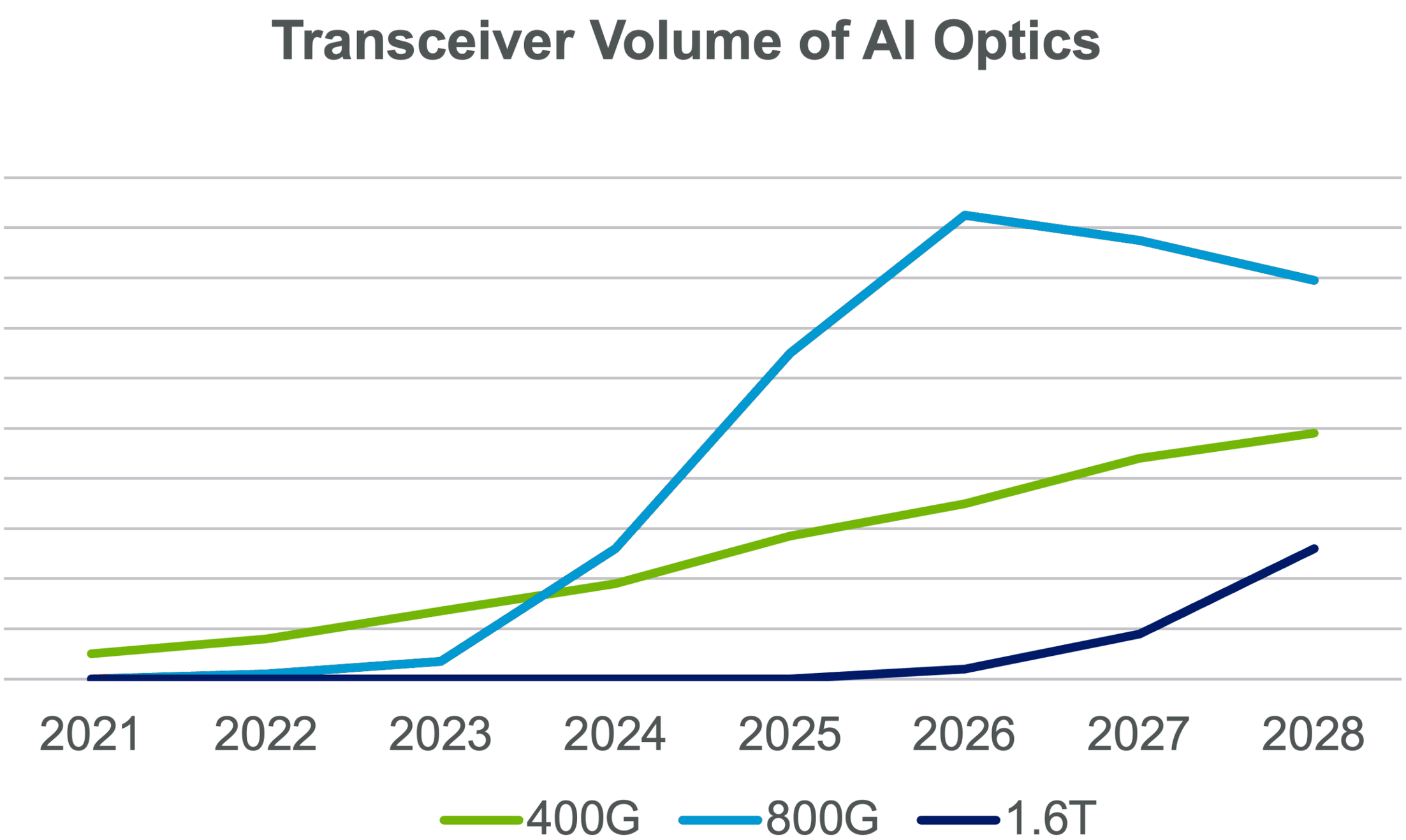
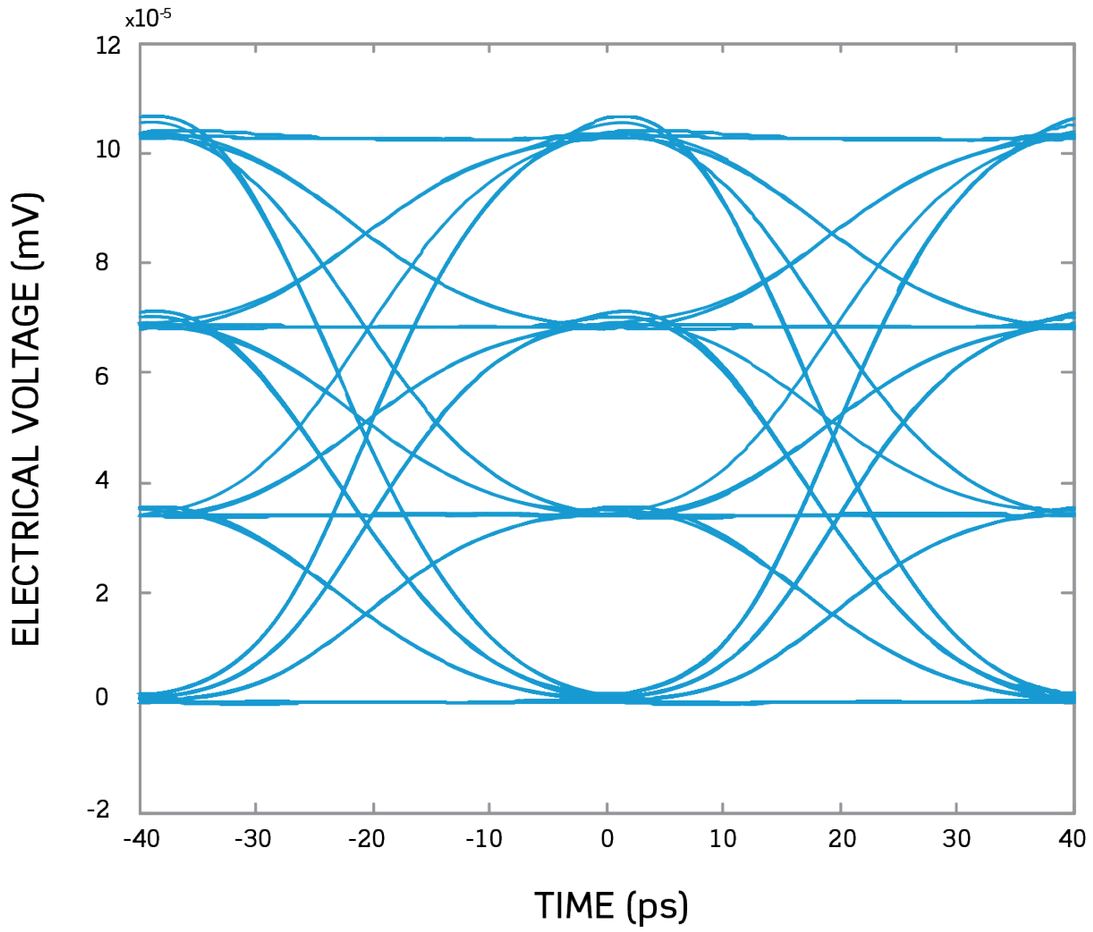
AI Computing Clusters are at the very beginning of a Huge Ramp in Growth.



Source: LightCounting

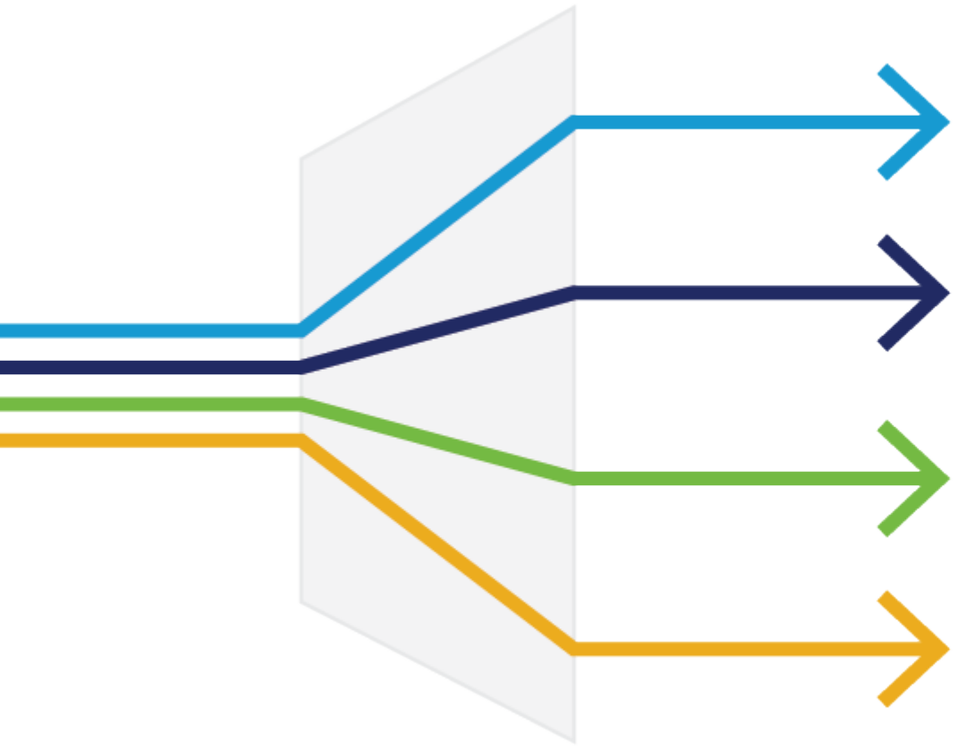
To handle the higher data rates required in these AI networks, data center managers are taking several approaches, often used in combination with each other:

LANE SPEED IMPROVEMENTS



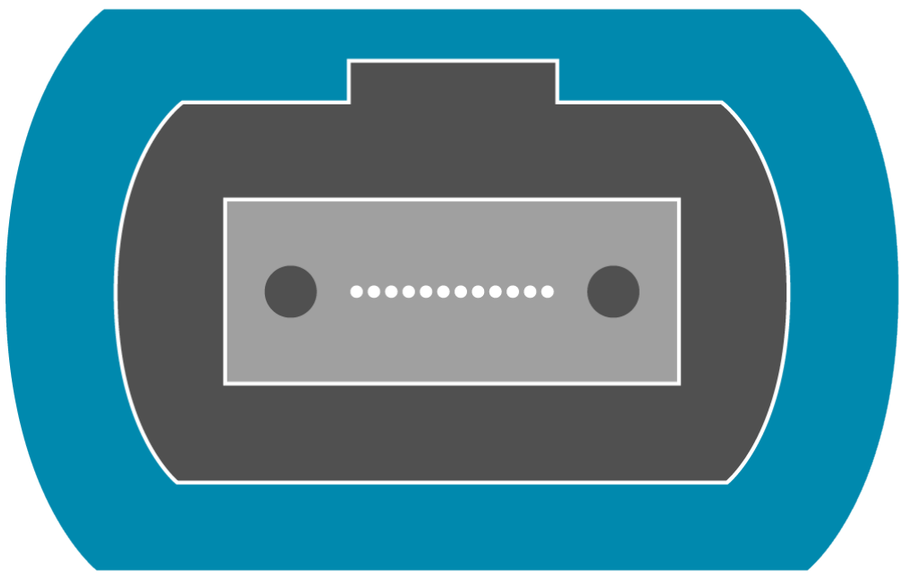
Encoding schemes have been developed that squeeze more bits of data into each on and off cycle of the light emissions in the fiber. Today, the lane speed of 100 Gb/s is standardized by IEEE, and they are already working on a 200 Gb/s lane rate.

WAVELENGTH DIVISION MULTIPLEXING



WDM sends several wavelengths simultaneously down an individual fiber, multiplying the available bandwidth by the number of wavelengths. This adds cost to the transceiver, as it incorporates multiple lasers into each transceiver. The plus side: it reduces the number of fibers required.

PARALLEL TRANSMISSION (MULTIPLE FIBERS)

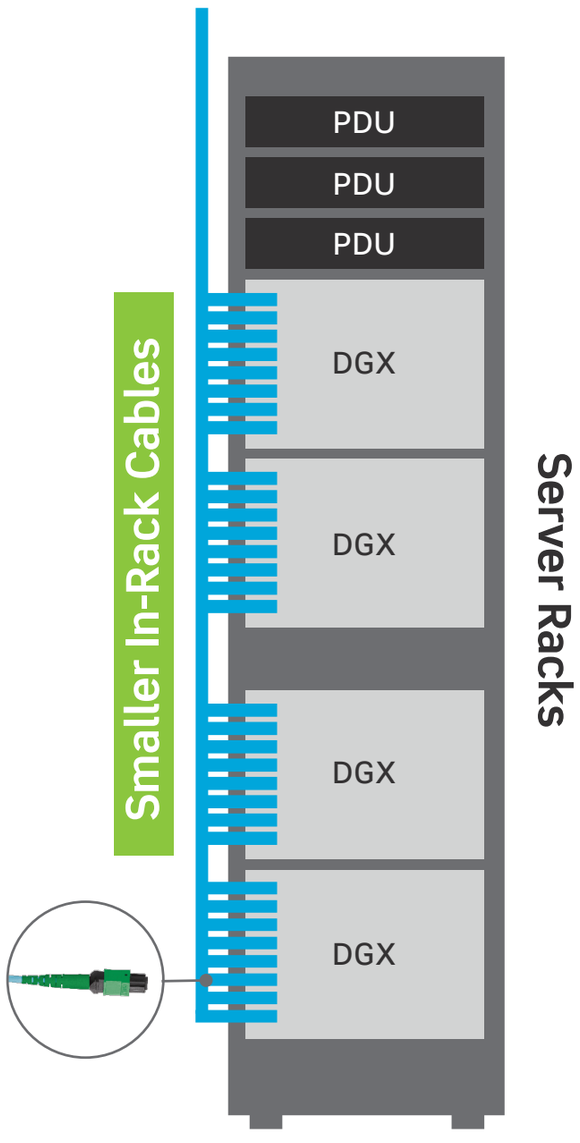


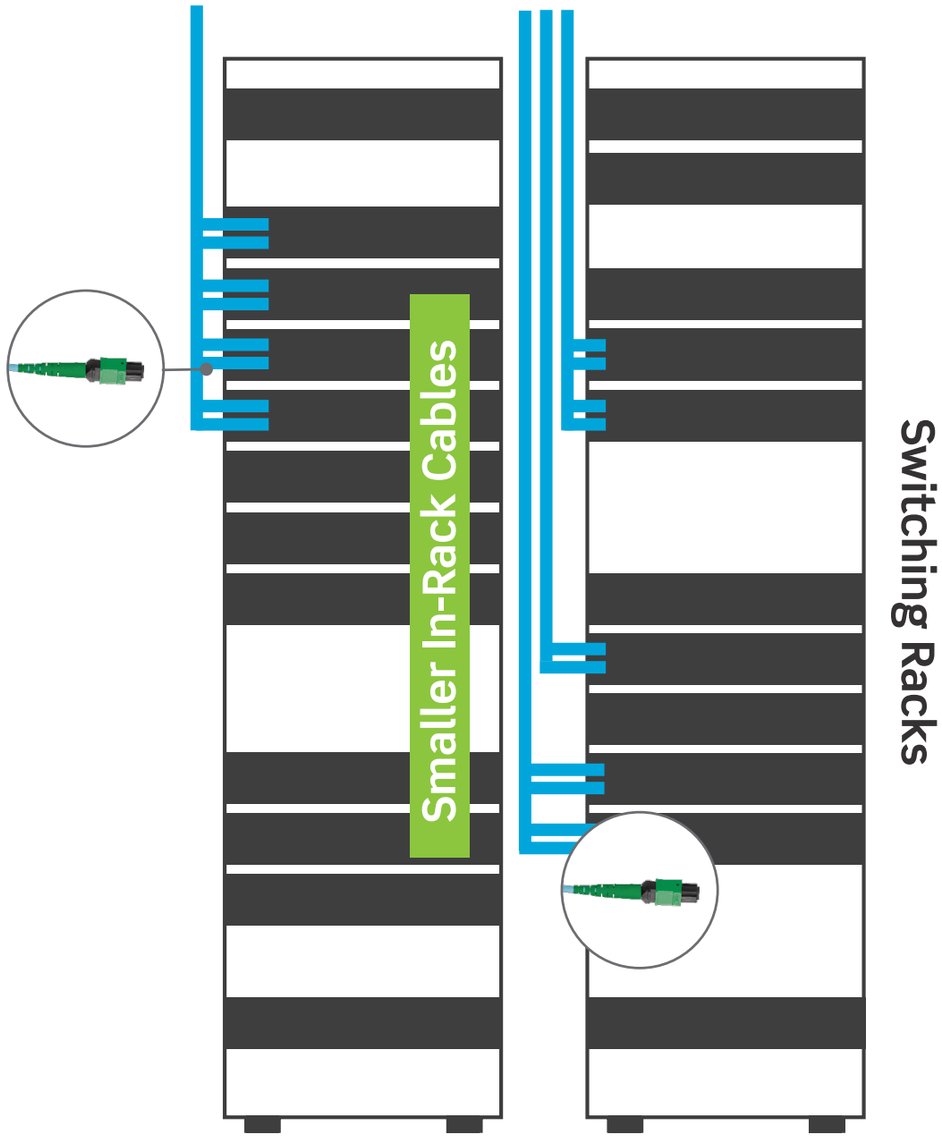
Splits the data rate into separate lanes.

For example, 400 Gb/s can be split into four streams of 100 Gb/s and then recombined at the other end at the 400 Gb/s interface.

From a technical standpoint, this is the simplest approach to increase data rates and usually the least expensive option.

STRUCTURED CABLING OFFERS SIGNIFICANT BENEFITS





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Reduces congestion in the overhead tray and **improves** cable density within the rack itself

Allows for **shorter** array cords or breakout legs of a harness or trunk, using 2.0 mm diameter cable for a **33% size reduction** vs. traditional array cords or active optical cables.

A STRUCTURED CABLING DESIGN

Offers solutions to support both **copper** and **fiber** connections in the **same panel**

Has virtually **no impact on latency** and operates well within link loss budgets

Enables backbone trunks to be **pre-installed**, **expediting** system turn up time when the active equipment arrives

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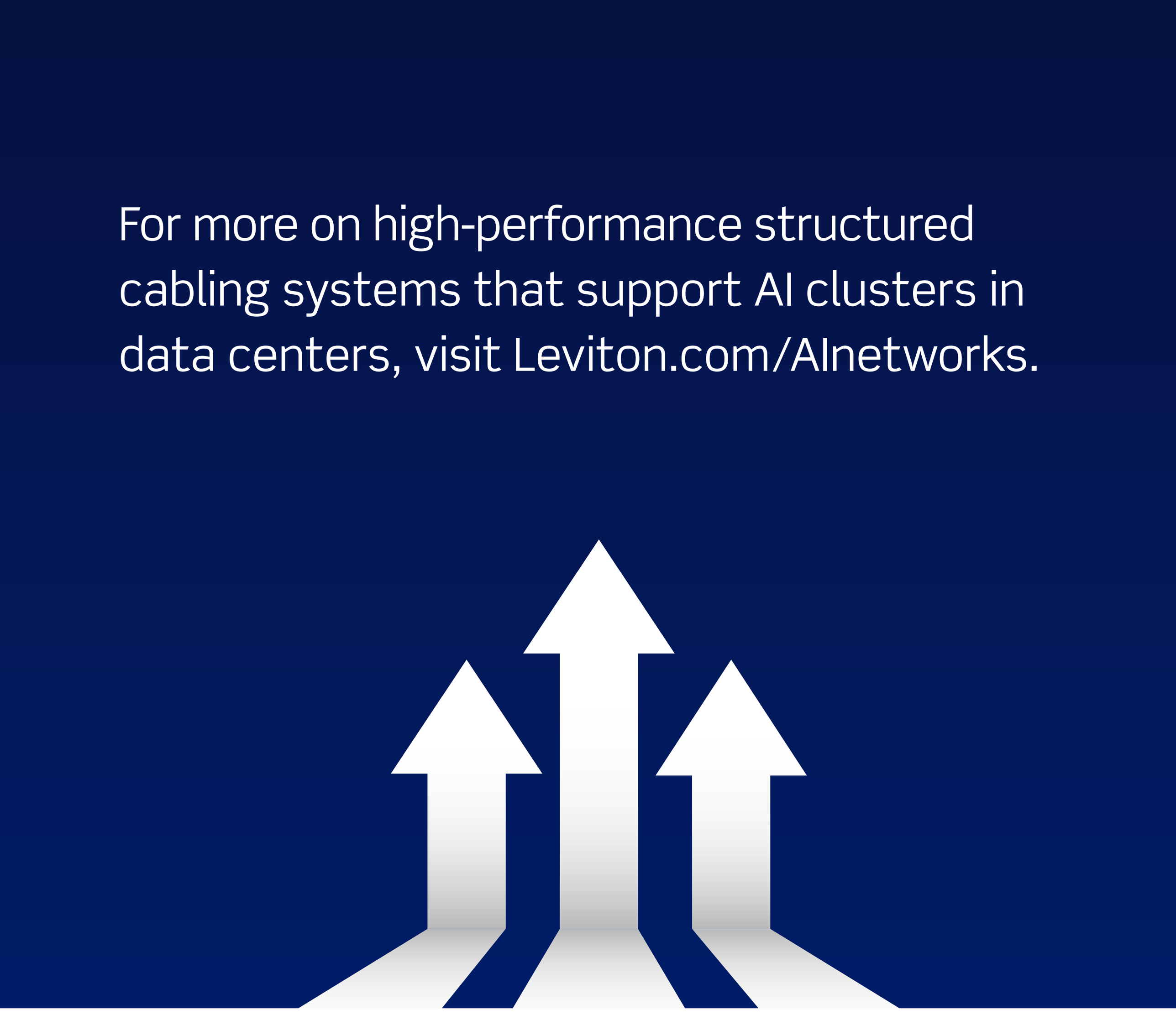
For more on high-performance structured cabling systems that support AI clusters in data centers, visit Leviton.com/AInetworks.



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