1FINITY
a Fujitsu company

1Finity launches Ultra Optical System N100 to enable high-speed, long-distance AI resource connectivity



Hideki Matsui

SVP, Head of Photonics System Business Unit, 1Finity (a Fujitsu company)

November 17th, 2026

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Our purpose is to make the world more sustainable by building trust in society through innovation

Building Networks Without Limits for Over 90 Years

- In 1935, we started by selling telephone exchanges in Japan.
- On July 1, 2025, Fujitsu consolidated its network business divisions and established new company 1Finity.
- Our photonics business has been operating in North America for over 45 years.

1Finity is a wholly owned subsidiary of Fujitsu that operates the company's network business.

We are strengthening our competitiveness and embracing new challenges to expand our networking business globally.



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Positioning of network business in the Fujitsu Group

- Fujitsu is focusing on technology development in five key technology areas
- In addition to AI, Fujitsu's strength lies in our technology expertise including in quantum computing and network technologies

Quantum Computing

Data & Security

Converging Technologies



Kozuchi AI Platform

Network

- Wireless: AI-Native vRAN, Open RAN (vCU/DU, RU products)
- Photonics: APN, 800G/1.2T/1.6T Ultra-High-Speed Technologies
- Software: Virtuora
- Services: DCI Controller

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Networks Without Limits

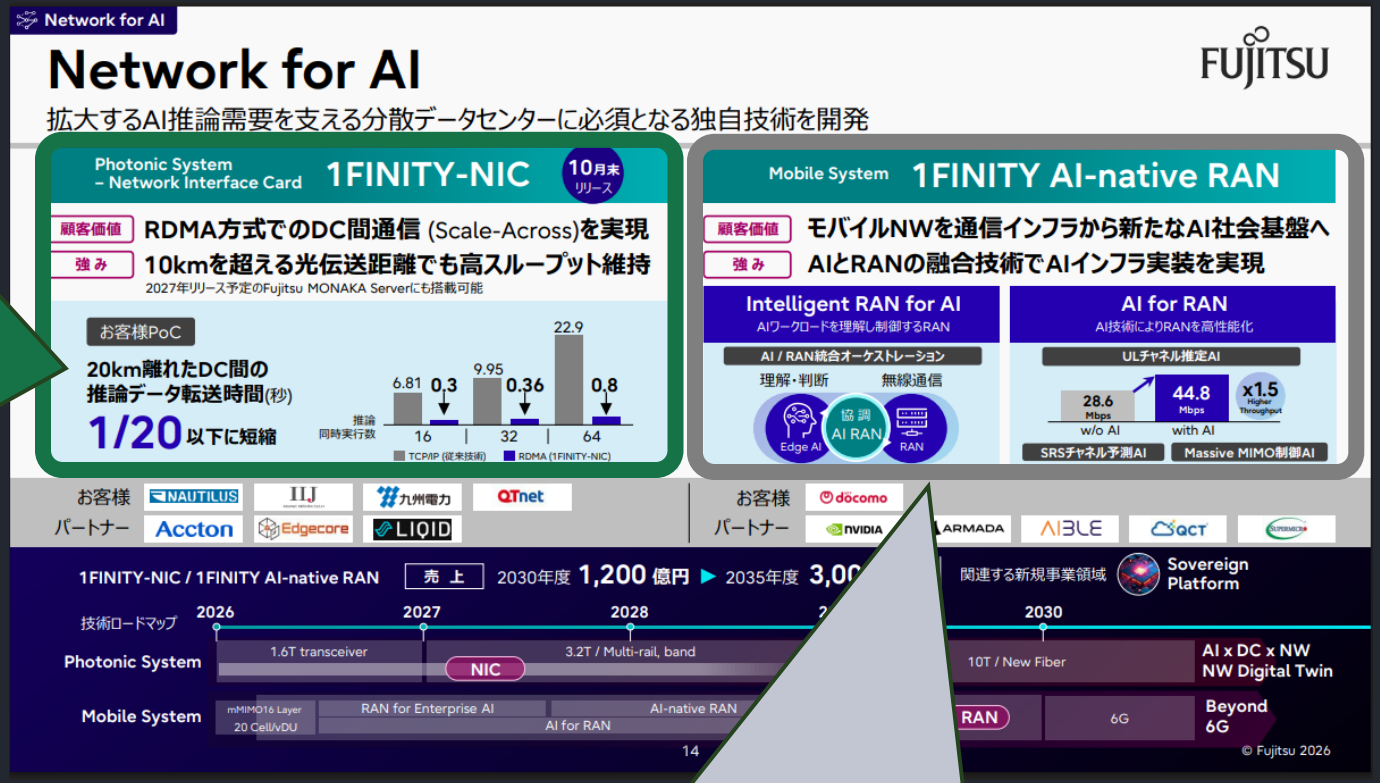
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For reference: Fujitsu IR Day 2026 Presentation Materials (Excerpt)

1Finity NIC: Featured in Today's Presentation

Press Release:
1Finity launches 1Finity Ultra Optical System N100 to enable high-speed, long-distance AI resource connectivity



AI-Native vRAN: Announced on November 4, 2026

Press Release:
1Finity, a Fujitsu company, announces availability of full-stack enterprise AI-Native vRAN solution

Exhibited at Fujitsu Limited IR Day 2026 Leading Innovation for AI Sovereignty (September 16, 2026)

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Introducing the 1Finity Ultra Optical System N100

- 1Finity NIC -

These results were obtained through a project subsidized by the New Energy and Industrial Technology Development Organization (NEDO) (JPNP21029).

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Scale-Across and the Expansion of Optical Networks in the Era of AI Inference

Scale-Across: A concept and set of technologies for coordinated operation across distributed data centers

Meeting the growing compute demand of AI inference requires distributed data centers connected by an All-Photonics Network (APN). 1Finity NIC enables this connectivity.

① Changes in the AI Market (Training → Inference)

- **Widespread AI Adoption**
  AI is becoming an integral part of societal infrastructure.
- **From Training to Inference**
  Expanding real-world applications are driving compute demand.
- **Surging Compute Demand**
  Data centers must expand their processing capacity.

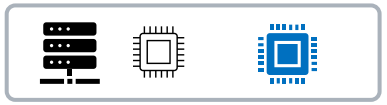
③ Impact on the Optical Networking Market

Key Requirements of Optical Networks

- High Capacity
- Low Latency
- Low power consumption
- High Reliability

② Evolution toward Scale-Across

Scale-Up
Expansion within a single system



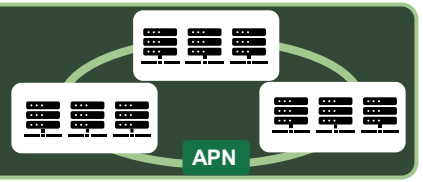
Example: Upgrading to a high-performance CPU

Scale-Out
Expansion across multiple systems



Example: Adding servers

Scale-Across
Cross-data-center collaboration



Operate distributed data centers as a single, large-scale AI computing infrastructure.

Challenges

- **Performance degrades as connection distance increases**

  Increased latency, reduced throughput

Needs

- **High-performance connectivity over long distances**

➢ **Enabled by 1Finity NIC**

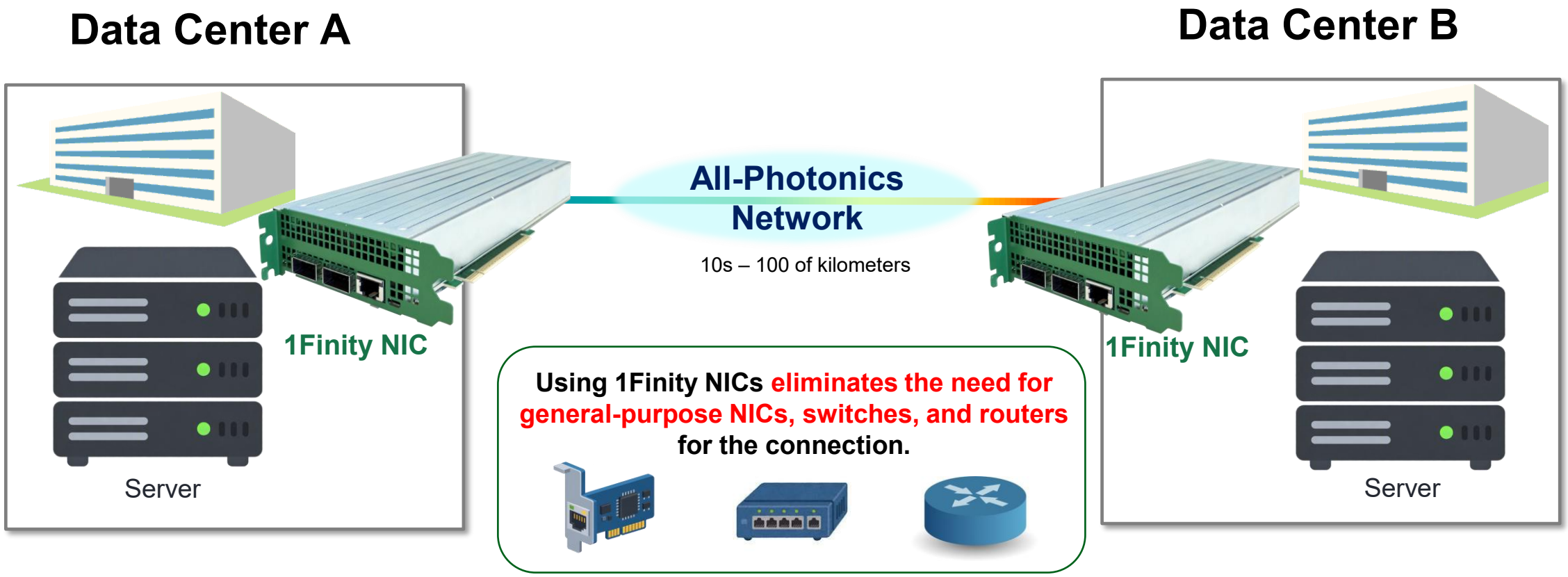


1Finity NIC

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System Configuration Overview

1Finity NICs Directly Connect AI Servers with Optical Fiber to Enable Distributed AI Infrastructure



*Conventional networks typically require dozens of switches and routers over transmission distances of tens to hundred of kilometers.

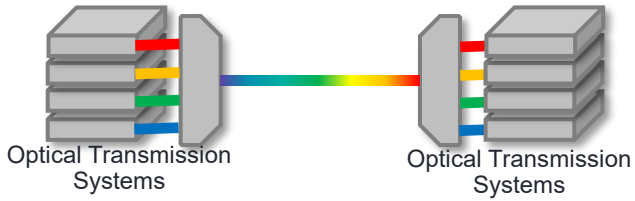
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Key Features of 1Finity NIC: 1

Equipped with 2x400 Gbps Optical Ports for High-Speed, High-Capacity Transmission*

1Finity NIC brings decades of optical transmission expertise from carrier-grade optical networking products to AI servers, combining high-speed, high-capacity optical design with expertise in optical signal control and hardware implementation.

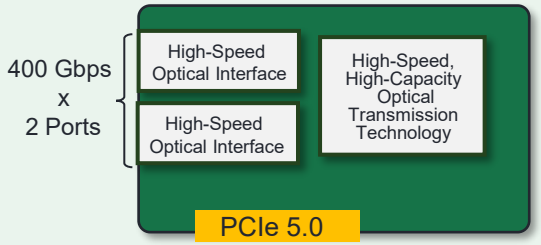
Over 40 Years of
Optical Transmission Expertise



Extensive expertise in high-speed, high-capacity optical transmission design, optical signal control, and product development.

Applied to NICs

1Finity NIC



Bringing high-speed signal processing technology from optical networks to NIC.

High-Speed Optical Connectivity

From AI servers
to optical networks



High-speed, high-capacity data exchange between remote AI servers.

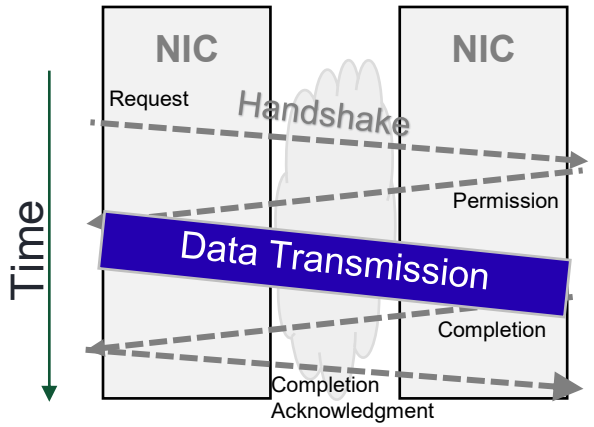
*Among the highest-performing network interface cards for data centers in terms of transmission performance.

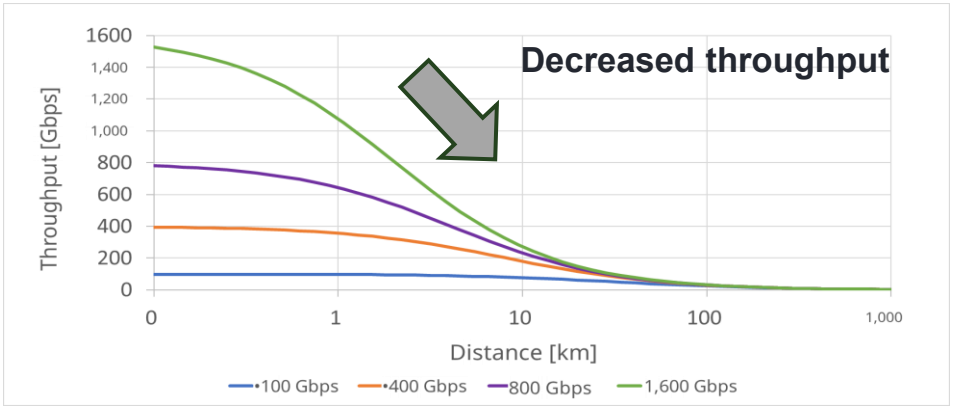
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Key Features of 1Finity NIC : 2-1

xRDMA* Enables High-throughput Data Transfer Over Long Distances

Conventional technology



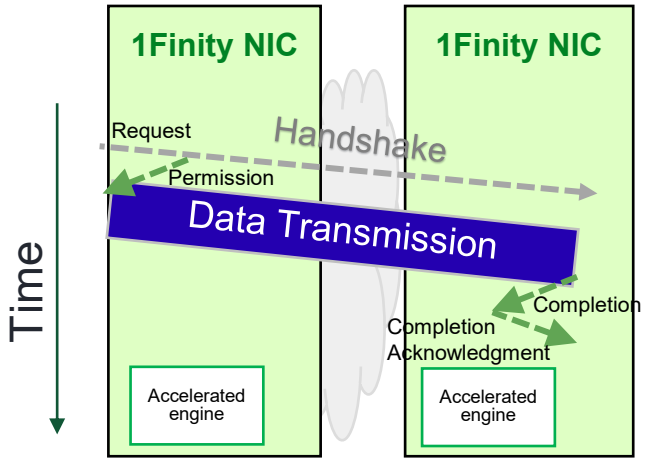


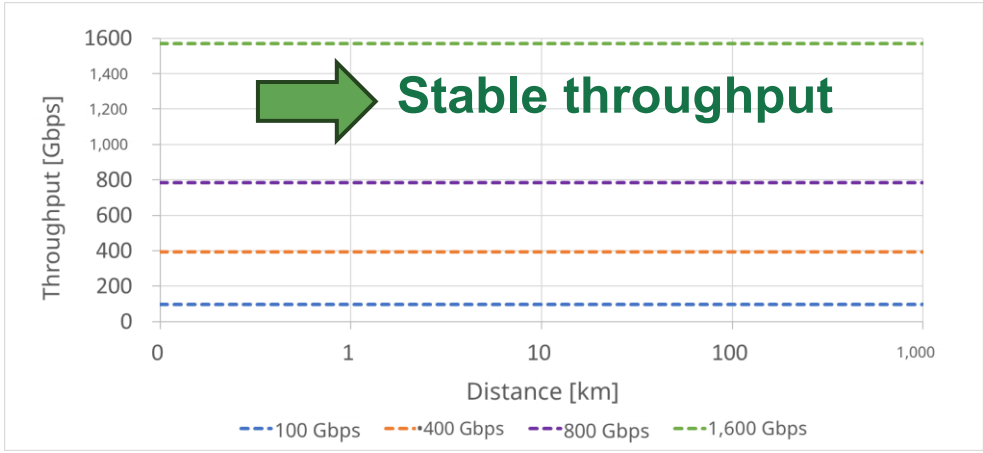
1Finity Simulation Results

- Throughput decreases as transmission speeds and distances increase.
- At 1,600 Gbps, the impact is significant even over short distances within a data center.

This technology

xRDMA





1Finity Simulation Results

- No Performance Degradation
  - Eliminates frequent handshakes to enable ultra-low-latency data transfer.
  - Consistent Throughput

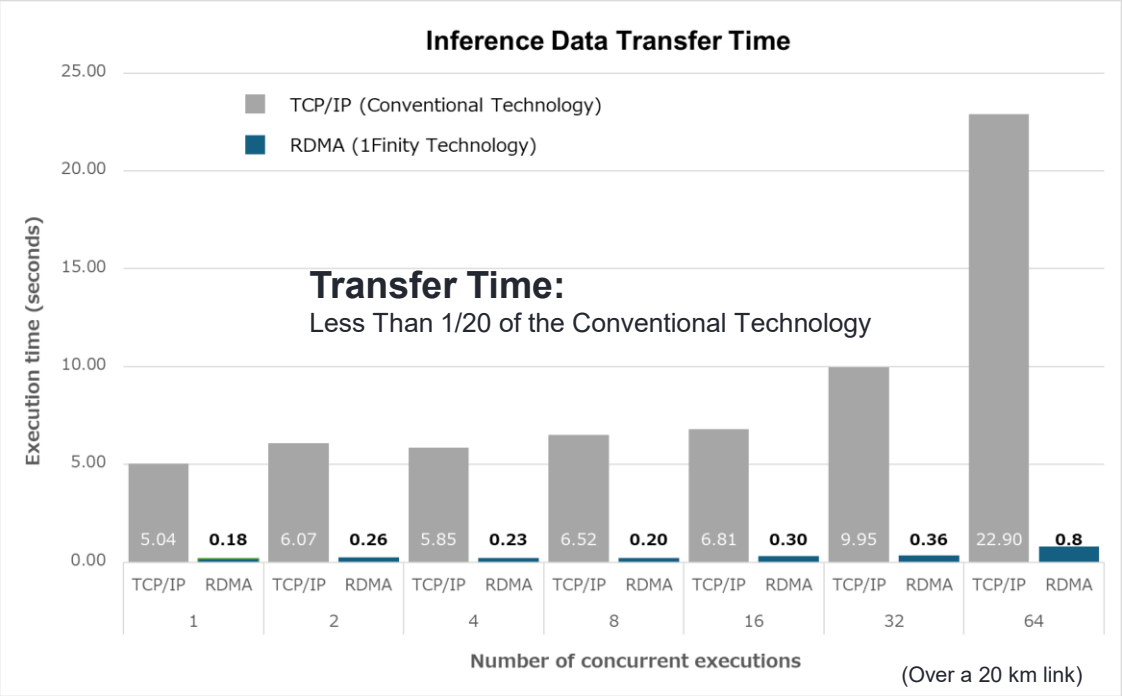
*xRDMA: Extended Remote Direct Memory Access
1Finity's proprietary technology for high-speed, low-latency data transfer between remote data centers.

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Key Features of 1Finity NIC : 2-2

xRDMA Significantly Reduces Data Transfer Time

- ✓ 1Finity NIC incorporates xRDMA, a proprietary transmission technology that mitigates the throughput degradation conventional RDMA experiences over longer distances.



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Direct Optical Server-to-Server Connectivity Across Distributed Data Centers

Directly Connecting AI Servers with 1Finity NIC Enables Efficient Use of Distributed AI Infrastructure

On-site / Edge Locations

Minimal Infrastructure Requirements

Data replication keeps data stored locally, enhancing security.

Onboard camera footage, telemetry data



Example: Racing



Server

1Finity NIC

Data transmission via ultra-high-speed RDB

Value Proposition

Simple and secure configuration

Conventional network configuration



requires standard NICs, switches, routers, etc.

Compare

All Photonics Network

Value Proposition

Ultra-low latency, low jitter, high throughput

Enables inter-data center communication (Scale-Across) using 1Finity's proprietary xRDMA technology

Data Center Side

Efficient Use of Available GPU Capacity Across Distributed Data Centers

Distributed DC #1



1Finity NIC

Server rack

Distributed DC #n



1Finity NIC

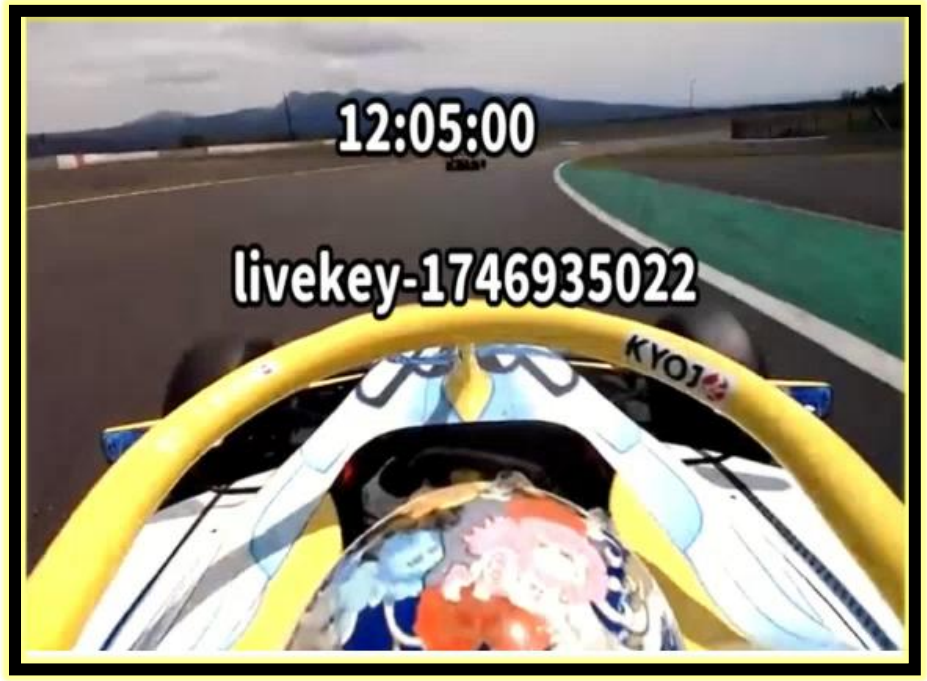
Coordinates geographically distributed data centers as needed

*Tsurugi is a product of Nautilus Technologies, Inc.

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Use Case: Motorsport

A lightweight CPU server at the venue collects onboard video and telemetry data, while GPU servers in a distributed data center approximately 100 km away perform AI inference. This enables real-time race strategy decisions and the delivery of engaging content.



Onboard camera footage

Ultra-low latency
(Using 1Finity NIC)

Ultra-low latency
Approx. 1/20

Low Jitter
Approx. 1/1000

Latency present
(1Finity NIC not used)

AI Inference
(Predicting Race Conditions)



Ultra-low latency enables timely access to predictions that inform race strategy.



Latency delays information delivery and hinders race strategy decisions.

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Market Growth

Markets Relevant to the 1Finity NIC Are Expanding

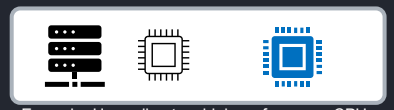
① Changes in the AI Market (Training → Inference)

2026		2032 *1
$0.8 trillion	▶	$2.3 trillion

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- **From Training to Inference**
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② Evolution toward Scale-Across

Scale-Up
Expansion within a Single System



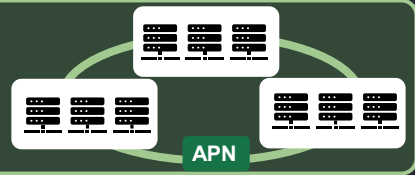
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Example: Adding servers

Scale-Across
Cross-data-center collaboration



Operate distributed data centers as a single, large-scale AI computing infrastructure.

③ Impact on the Optical Networking Market

Metro/Backbone WDM Market *2
CAGR **10%**
(2025–2031 Forecast)

NIC Market for Scale-Across Applications *3
CAGR **140%**
(2024–2030 Forecast)

Key Requirements of Optical Networks

- High Capacity
- Low Latency
- Low power consumption
- High Reliability

Note *1 : Source, : Bloomberg Intelligence, IDC, eMarketer
https://www.bloomberg.com/company/press/generative-ai-market-poised-to-reach-2-3-trillion-by-2032-as-agentic-systems-proliferate-and-infrastructure-demand-surges-according-to-bloomberg-intelligence/

Note *2 : Source, : Omdia [Optical Network Forecast: 2025–31, Apr. 2026
Note *3 : Source:Dell'Oro Photonic Smart NIC Solution, Feb. 2026

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Upcoming Major Feature Enhancements

Planned Feature Enhancements and Rollout

We will continue to provide even greater value through feature enhancements that meet our customers' needs.

Enhanced Security — FY27

Strengthen security features for highly confidential AI workloads.

AI Cluster Connectivity — FY27

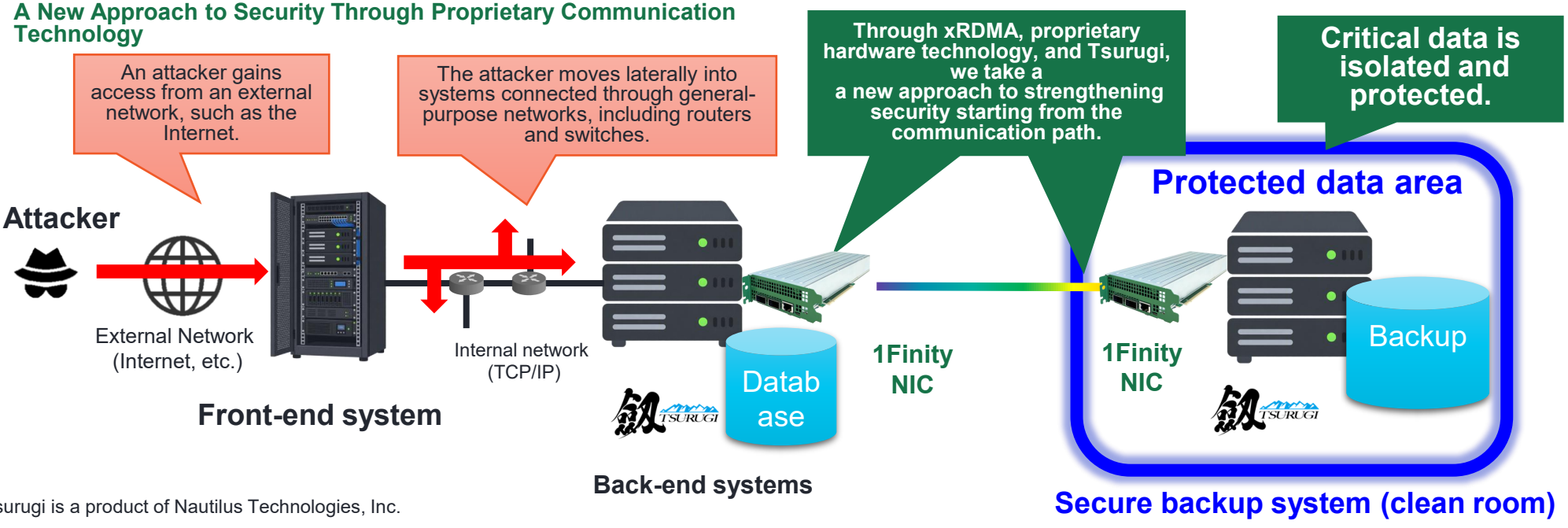
Seamlessly connect large-scale AI clusters and distributed data center

Support for 2x800 Gbps Ports (1.6 Tbps Total) — FY28

Support large-scale AI workloads with higher-bandwidth, low-latency connectivity.

… and more

➢ **A New Approach to Security Through Proprietary Communication Technology**



* Tsurugi is a product of Nautilus Technologies, Inc.

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Business Rollout Timeline

From Early Adoption to Global Rollout: Delivering Higher-Performance, More Reliable, and More Secure AI Infrastructure

November 2026

Begin Accepting Pre-Orders and Roll Out Availability in Phases

Co-creation

April 2027

Global Shipments Scheduled to Begin

Full-Scale Entry into the Scale-Across Market

From Early Adoption to Global Rollout

Through co-creation, **we aim to establish use cases and open up a new global market for distributed AI infrastructure.**

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Thank You

Keep in touch



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