

MUFG Bank, Ltd.
NTT DATA Group Corporation
Nippon Telegraph and Telephone WEST Corporation

MUFG Bank, NTT DATA and NTT WEST announce successful All-Photonics Network demonstration in data center interconnection

Tokyo, March 7th, 2025 -- MUFG Bank, Ltd. (MUFG), NTT DATA, and Nippon Telegraph and Telephone WEST (NTT WEST), members of IOWN Global Forum (IOWN GF), are pleased to announce the successful test of ultra-low latency and high bandwidth data center interconnection by using IOWN All-Photonics Network (APN). This pioneering use case within the IOWN GF demonstrated the live migration of an IT system between multiple data centers located 50 to 100 km apart, achieving less than one second of downtime. Additionally, it showcased the long-distance synchronous replication of database management systems between locations up to 2,500 km apart.

The financial services sector faces a unique range of challenges that can be addressed through digital transformation, including performance limitations, regulatory compliance, and the critical need for reliable and resilient service delivery.

Geographically dispersed data centers are one way to solve these challenges and ensure highly reliable and disaster-resistant financial systems. However, mechanisms are required to effectively utilize technical resources across multiple locations and transfer data quickly while minimizing system downtime. Additionally, to facilitate swift infrastructure recovery in response to disasters, rapid system backups and data transfers in remote locations are necessary. MUFG and NTT DATA have collaborated to ensure IOWN APN can meet these requirements of next-generation financial systems

The companies published a white paper through the IOWN GF in July 2024 [1], identifying how IOWN technology can address the financial sector's challenges for digital transformation. A technical document, released in February 2025 [2], outlined the implementation model for the technology and serves as a handbook for the proof-of-concept (PoC).

In order to validate the technology's efficacy, MUFG, NTT DATA, and NTT WEST have jointly conducted two assessments based on the white paper and technical document.

The first assessment, conducted by NTT DATA and NTT WEST, 'Live Data Migration between Data Centers' was a live migration of a virtualized simulated financial system across multiple data centers within a 70 km radius. During the assessment, critical parameters such as data transfer time and system downtime were measured, and the results were evaluated from the perspectives of applications, databases, virtualized platforms, and networks. The results were promising, proving the effectiveness of IOWN APN with service downtime kept at under one second.

The second assessment, conducted by all three parties, 'Long Distance Synchronous Data Replication' evaluated database synchronization performance using a long-distance optical communication network, simulating distances ranging from 250 to 2,500 km. The assessment focused primarily on database synchronization, revealing substantial reductions in synchronization delays and fluctuations. The results proved IOWN APN's capability to achieve synchronous database replication over long distances, a feat that was previously deemed challenging.

Hidehiko Tanaka, Head of Technology and Innovation, NTT DATA has said, "The financial industry is undergoing a rapid technological evolution, driven by the tremendous demand for next-generation financial services, and spurred by the rapid surge of technical innovation globally. Our collaboration with MUFG and NTT WEST aims to enable this transformation and make next-generation financial services a reality through the use of IOWN technology."

The three companies will continue to explore the potential of IOWN technology to shape the next generation of financial systems. Through the IOWN GF, they will share solutions and insights, driving the development of diverse use cases with partner companies and accelerating the widespread adoption of IOWN technology worldwide.

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[1]: "Services Infrastructure for Financial Industry Use Case": <https://iowngf.org/content-type/use-cases/>
[2]: "Reference Implementation Model and Proof-of-Concept Reference of Services Infrastructure for Financial Industry Use Case": <https://iowngf.org/content-type/technology-docs/>

About MUFG Bank

MUFG Bank, Ltd. is Japan's premier bank, with a global network spanning around 40 countries. Outside of Japan, the bank offers an extensive scope of commercial and investment banking products and services to businesses, governments and individuals worldwide. MUFG Bank's parent, Mitsubishi UFJ Financial Group, Inc. (MUFG) is one of the world's leading financial groups. Headquartered in Tokyo and with over 360 years of history, MUFG has a global network with approximately 2,000 locations in more than 40 countries. The Group has about 140,000 employees and offers services including commercial banking, trust banking, securities, credit cards, consumer finance, asset management, and leasing. The Group aims to "be the world's most trusted financial group" through close collaboration among our operating companies and flexibly respond to all of the financial needs of our customers, serving society, and fostering shared and sustainable growth for a better world. MUFG's shares trade on the Tokyo, Nagoya, and New York stock exchanges. For more information, visit <https://www.mufg.jp/english>.

About NTT DATA

NTT DATA is a \$30+ billion trusted global innovator of business and technology services. We serve 75% of the Fortune Global 100 and are committed to helping clients innovate, optimize and transform for long-term success. As a Global Top Employer, we have diverse experts in more than 50 countries and a robust partner ecosystem of established and start-up companies. Our services include business and technology consulting, data and artificial intelligence, industry solutions, as well as the development, implementation and management of applications, infrastructure and connectivity. We are also one of the leading providers of digital and AI infrastructure in the world. NTT DATA is part of NTT Group, which invests over \$3.6 billion each year in R&D to help organizations and society move confidently and sustainably into the digital future. Visit us at nttdata.com

About NTT WEST

NTT West is a Value Creation Partner dedicated to co-creating a prosperous future society through safety, security, and trust and cutting-edge technology.

Leveraging our technology, expertise and assets in the information and communication business space, we create new value.

As a testament to our commitment, we boast over 10 million¹ fixed-line broadband service subscribers in western Japan.

We empower digital transformation to address diverse societal and industrial challenges, working alongside regions and customers.

Through open innovation facilities, we foster co-creation with partners across industries.

Ultimately, by utilizing NTT Group's advanced technologies, such as IOWN and generative AI, we drive innovation and create new opportunity.

¹ Including Hikari collaboration model.

About IOWN Global Forum

The IOWN Global Forum was established in 2020 as a private sector organization to develop IOWN technologies and use cases. As of the end of 2023, it is comprised of over 140 organizations. The objective of the IOWN Global Forum is to accelerate innovation and adoption of a new communication infrastructure to meet our future data and computing requirements through the development of new technologies, frameworks, specifications, and reference designs in areas such as photonics R&D, distributed computing, use cases and best practices. For more information, visit [IOWN Global Forum – Innovative Optical and Wireless Network](#).