



INTERNET MULTIFEED CO.
Internet Initiative Japan Inc.
NTT Communications Corporation

April 19, 2022

Multifeed, IIJ & NTT Com Achieve Asia's First Internet-exchange Interconnection using 400 Gigabit Ethernet

TOKYO, JAPAN, April 19, 2022— INTERNET MULTIFEED CO. (Multifeed), the provider of JPNAP, one of Asia's largest internet exchanges (IX¹), Internet Initiative Japan Inc. (IIJ), a major Internet service provider (ISP) in Japan, and NTT Communications Corporation (NTT Com), the ICT solutions and international communications business within the NTT group, announced today that they have conducted the first successful IX interconnection in Asia² using 400-gigabit Ethernet, which has four times the traffic bandwidth of commonly used 100-gigabit Ethernet. The demonstration has confirmed that 400-gigabit Ethernet is commercially viable in terms of interoperability and performance for IX (see Test Configuration below).

The demonstration's success is expected to accelerate the introduction of 400-gigabit services by not only IX providers but also major ISPs and content-service providers to increase bandwidth and aggregate IX connection ports for improved operability and cost efficiency. In addition, IXs offering increased bandwidth would enable Internet users to benefit from more diverse Internet environments.

In the demonstration, Multifeed, IIJ and NTT Com interconnected 400-gigabit routers and switches made by Arista Networks, Inc, Cisco Systems, G.K., and Juniper Networks. to confirm interoperability at the physical and network levels, including optical switches, routing control, and 400-gigabit traffic flow using 400-gigabit interfaces (400G-FR4 and 400G-LR4) in the IX.

Multifeed provided the test environment and verified the interoperability of the 400-gigabit interface. IIJ and NTT Com verified the interoperability of the 400-gigabit interface from the standpoint of IX service users.

Multifeed will continue to study the introduction of a 400-gigabit service for JPNAP, targeting a commercial launch within the fiscal year ending next March, aiming to further enhance and expand its IX services with advanced technologies and services. IIJ and NTT Com also aim to introduce the technology to cope with increasing traffic and thereby enhance the mobile Internet as a key social infrastructure.

Internet traffic in Japan is steadily growing, including due to increasing digitization and, more recently, more time being spent at home during the pandemic,³ placing greater burdens on IXs connecting ISPs.⁴

JPNAP has been providing a 100-gigabit interface since July 2012 and, IIJ and NTT Com both use 100-gigabit interfaces for Internet connections. With the continuing rise in Internet traffic, however, multiple 100-gigabit interfaces have been increasingly bundled out of necessity, pointing to the need for a wider bandwidth interface. Standardized 400-gigabit Ethernet was introduced in 2017 and products compatible with 400-gigabit interfaces have been available from equipment manufacturers since 2019. Interoperability of these products is crucial for the launch of 400-gigabit IXs capable of connecting diverse operators, which is why practical steps are now being taken to realize actual implementation.

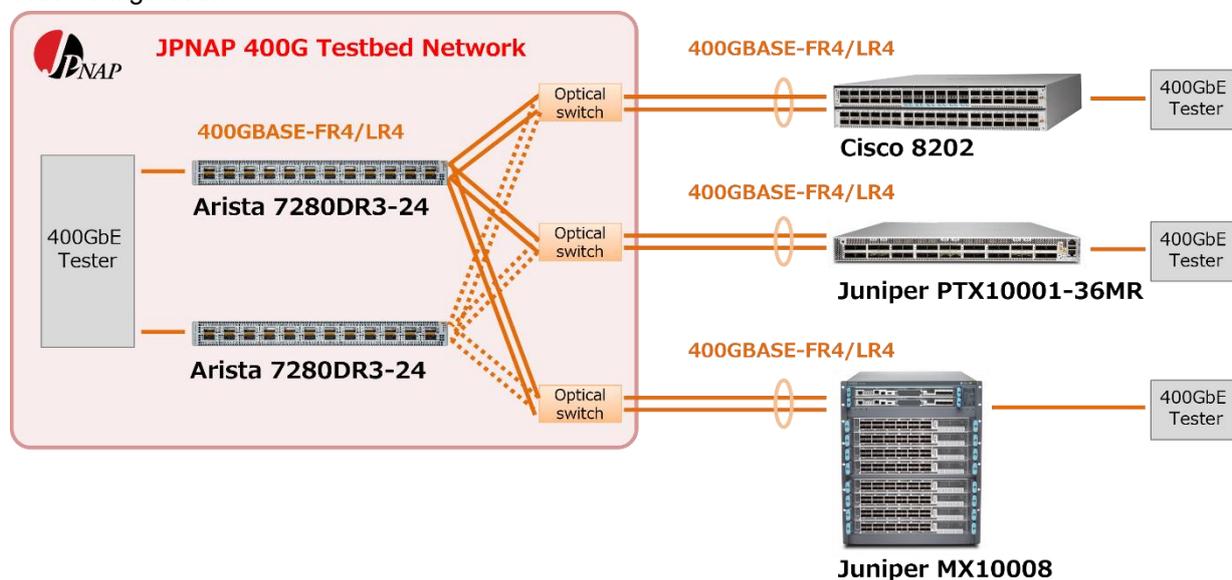
¹ IX: Internet exchanges where ISPs and other Internet carriers connect and exchange traffic.

² As of March 25, 2022, according to INTERNET MULTIFEED CO.

³ NTT Com Internet traffic volume: https://www.ntt.com/about-us/covid-19/traffic_archive_annual.html

⁴ Ministry of Internal Affairs and Communications' estimates of Internet traffic in Japan: https://www.soumu.go.jp/menu_news/s-news/01kiban04_02000202.html (only in Japanese language)

Test Configuration



About INTERNET MULTIFEED CO.

INTERNET MULTIFEED is operating JPNAP, one of the largest Internet exchange in Asia. JPNAP is exchanging over 4.6 Tbps traffic and connected by about 220 customers all over the world in Tokyo, Osaka, Fukuoka and Sendai area. (as of April 2022)

About IJ

Founded in 1992, IJ is one of Japan's leading Internet-access and comprehensive network solutions providers. IJ and its group companies provide total network solutions that mainly cater to high-end corporate customers. IJ's services include high-quality Internet connectivity services, systems integration, cloud computing services, security services and mobile services. Moreover, IJ has built one of the largest Internet backbone networks in Japan that is connected to the United States, the United Kingdom and Asia. IJ was listed on the First Section of the Tokyo Stock Exchange in 2006. For more information about IJ, visit the IJ Web site at <https://www.ij.ad.jp/en/>.

About NTT Communications

NTT Communications solves global technology challenges by helping enterprises utilize managed IT-infrastructure solutions to overcome complexity and risk in their ICT environments. These solutions are backed by our worldwide infrastructure, including industry-leading, global tier-1 public and private networks reaching over 190 countries/regions, and more than 500,000m² of the world's most advanced data center facilities. Now as the core provider of the DOCOMO group's enterprise-business services and solutions, we create value through global-scale support for structural changes in industry and society,

new workstyles, and digital transformation in communities. Together with NTT Ltd., NTT Data, and NTT DOCOMO, we are the NTT Group.

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