

Executive Summary

The IIR (Internet Infrastructure Review) is a technical journal that IIJ has been publishing quarterly since 2008. From this issue (Vol. 67), Naoshi Someya takes over the writing of the executive summary from Junichi Shimagami. Below is a summary of this issue's contents.

Chapter 1 is our first periodic observation report for this issue. It provides a detailed analysis of trends in traffic on the broadband and mobile services operated by IIJ. From 2024 into 2025, traffic continued to grow steadily overall, with no major changes observed in usage patterns. While the adoption of AI, the use of which continues to grow, has so far had only a limited impact on traffic, this is something that will bear close watching ahead.

Chapter 2 presents our second periodic observation report. It discusses IIJ's defensive action program, which we fully deployed in 2024. This program represents an evolution of traditional abuse countermeasures, enhancing safety for users and society as a whole by proactively detecting and blocking malicious traffic. Defensive action has substantially reduced incidents of spam and phishing attacks while significantly improving the reliability of IIJ's email services. The report also analyzes adoption rates for sender authentication technologies (SPF, DKIM, DMARC, ARC) and transport encryption (STARTTLS), presenting the latest trends both domestically and internationally.

Our first focused research report, in Chapter 3, discusses IIJ's work and challenges faced in relation to reviewing virtualization platforms in the wake of the VMware issue and migrating to next-generation platforms using Kubernetes. In response to rising VMware license prices, IIJ has rolled out an internally developed Kubernetes distribution, IKE (IIJ Kubernetes Engine), as a VMware alternative, successfully reducing costs, improving operational efficiency, and enhancing quality. While Kubernetes was originally a container orchestrator, its use in environments that employ a mixture of containers and VMs according to the use case positions it as a future-ready option capable of generating service value.

Chapter 4 presents our second focused research report, discussing IIJ's initiatives in preparation for the termination of NTT Docomo's 3G services, scheduled for the end of March 2026. The 3G sunset may impact MVNO operators and users, affecting voice calls, SMS, and data communications. IIJ has been identifying technical and operational challenges from an early stage and advancing support and preparations to enable smooth migration to 4G/5G. In particular, the report explains differences in device behavior due to implementation details and provides practical steps for dealing with this.

The IIR aims to provide readers with fresh insights by sharing real voices from the front lines, where IIJ engineers confront challenges every day and help keep the infrastructure that underpins society running. In this era of rapid change, IIJ will continue to take on new challenges and evolve while staying true to its mission of supporting society through technology.



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Mr. Someya joined IIJ in 1998 and was seconded shortly thereafter to IIJ Technology (which was merged into IIJ in 2010). At IIJ Technology, he was involved in the launch of the systems integration (SI) business and worked on building numerous Internet systems as well as providing consulting services. In 2016, he transferred to IIJ's Service Business Division, where he was responsible for medium-term strategy for the cloud business. In 2019, he became head of the cloud business. As of this fiscal year, he serves as editor-in-chief of the IIR, with his aim being to proactively deliver practical, cross-cutting technical insights from across IIJ to readers.