NTT East creates Video AI Service to deliver community data insights

Nippon Telegraph and Telephone East Corporation (NTT East) uses its robust information and communications technology (ICT) foundation to support local communities. The service provider began the Regional Edge with Interconnected Wide-Area Network (REIWA) project to deliver edge computing data analysis to regional businesses and organizations. To build the first phase of the project, a Video AI Service, NTT East used Red Hat® OpenShift®, an enterprise container platform. The new service has helped customers in a variety of industries improve their sales, marketing, and operations—and created a foundation for ongoing AI innovation.

Software and services

Red Hat® OpenShift®

Red Hat Consulting

Red Hat Technical Account Management (TAM)

Partner

NVIDIA

Tokyo, Japan ●

Headquarters

Telecommunications

4,900 employees
29 branches

Benefits

▶ Created new Video AI Service to deliver cost-effective, intelligent business insights

▶ Reduced service operating costs by 50-60% with improved management and version control

▶ Improved developer experience with self-service tools and lower barriers to access

"Through the REIWA project, we are able to work closely with local communities and provide valuable services using local data."

—
Daichi Kushima
Manager, DX Development,
Business Development Headquarters Division 4,
NTT East

Pictured from left: Masashi Toyama, Daichi Kushima, and Katsuhiro Orito

"By providing container-based self-service tools, Red Hat OpenShift has made it possible to stably develop and operate innovative video AI services through collaboration with AI developers."

Masashi Toyama
Manager,
Server Infrastructure
Technology Cloud Server
Engineering Department,
Advanced Promotion Division,
Network Business Headquarters,
NTT East

Addressing rural communication challenges with an intelligent edge network

Nippon Telegraph and Telephone East Corporation (NTT East) is focused on using digital technology to help community businesses and organizations address their challenges, such as declining service levels due to labor shortages or stalled sales growth due to lack of marketing capabilities.

"Over our 100 years of operation, NTT East has cultivated Japan's largest telecommunications network, including server platform and a secured, low latency IP-VPN [Internet Protocol Virtual Private Network]," said Daichi Kushima, Manager, Digital Transformation (DX) Development Division 4, New Business Development Headquarters, NTT East. "In addition to services leveraging IT, we also provide one-stop service, including on-site construction and maintenance and other services for local governments and communities to complete digital transformation efforts."

NTT East recently began the Regional Edge with Interconnected Wide-Area Network (REIWA) project, an edge computing initiative that builds on the service provider's technology foundation to establish regional edge computing hubs. These hubs intelligently collect and analyze information, such as point of sale (POS) and consumer purchasing history for retail, product growth status updates for agriculture, and information on disaster evacuation sites and food stockpiles for government.

The first phase of the project, Video AI Service, provides a video analysis service to organizations in a variety of industries with limited budgets. It uses artificial intelligence (AI) to analyze images and video captured by customer cameras, without requiring the costly use of a server. Customers can then use this data to improve their marketing, sales, and operations.

Building a platform for AI innovation with enterprise container technology

NTT East decided to use Red Hat OpenShift as the foundation of its Video AI Service. This responsive enterprise container platform provides automated container orchestration capabilities that simplify deployment, management, and networking at scale. In addition, the service provider deployed the NVIDIA GPU OpenShift operator, jointly developed by Red Hat and NVIDIA. This solution simplifies the use of GPUs to support resource-intensive workloads, including AI, machine learning (ML), and deep learning (DL), a subset of machine learning that can analyze unstructured data.

"AI technology will continue evolving, so the ability to adapt to these changes and refine our infrastructure is essential," said Masashi Toyama, Manager, Server Infrastructure Technology, Cloud Server Technology Department, Advanced Promotion Division, Network Business Headquarters, NTT East. "By providing container-based self-service tools with Red Hat OpenShift, we can develop and operate stable, innovative AI services through collaboration with developers. We can strike a balance between incorporating Kubernetes features, such as monitoring and container registries, while maintaining stable and continuous operations."

To support deployment of this new container infrastructure, NTT East worked closely with a Red Hat Technical Account Manager (TAM) and Red Hat Consulting. "Both video analysis and AI technology are advancing rapidly across many fields," said Mr. Toyama. "The insight of our Red Hat experts helps us incorporate best practices based on global examples and experience."

Bringing cost-effective edge data insights to local communities

Delivered intelligent business insights to customers across industries

With the introduction of NTT East's Video AI Service, local community organizations and businesses can take advantage of the latest AI capabilities to gain proactive business insights. For example, foot-fall measurement AI counts traffic volume to physical stores and provides analysis of visitor attributes, such as gender, age, and durations of stay. Modular, scalable container infrastructure helps speed NTT East's data collection and analysis of millions of videos, with the flexibility to add new capabilities as needed to enhance the service. Customer service support AI enables detection and notification of purchasing, along with shoplifting predictive behavior.

"After evaluating a site, we define requirements and verify hypotheses, proceed with data acquisition and analysis, and provide consulting and operational support based on the results," said Katsuhiro Orito, Manager, DX Production, Division 4, New Business Development Headquarters, NTT East. "Based on customer needs, we provide a one-stop service, from clarification of requirements to design, data collection, analysis, and on-site improvement."

In a store where AI was introduced to measure customer flow, analysis that integrated customer attribute and point of sale (POS) data helped increase sales by 144%. At another business, a drugstore, shoplifting decreased by 30-40% and customer service quality improved, with the help of customer service support AI.

Reduced service operating costs by 50-60%

The Video AI Service runs across dozens of machines, all of which must be maintained to ensure the latest code libraries, container images, and other resources are kept consistent and up-to-date.

Based on the Kubernetes container orchestration technology, Red Hat OpenShift eliminates the need to manually log onto each machine and verify version differences by managing containers and environments through a high-level platform layer. The NVIDIA GPU operator automates management of provisioning software components, accelerating DL and other workloads. All systems are merged in the company's datacenter, where one server can handle nearly 100 cameras for the Video AI Service.

"Even with the need to have skilled staff that have experience with Kubernetes and containers, we still estimate that adopting Red Hat OpenShift will help reduce the operating costs of the Video AI Service by 50-60%," said Mr. Toyama.

Improved developer experience with self-service tools and lower barriers to access

Building innovative AI services targeting AI developers requires tools that support flexible, self-service development. NTT East's development team can take advantage of container-based self-service tools to build, scale, adjust, and share applications.

"We believe cross-disciplinary collaboration is key. We offer services such as low- or no-code development environments that lower the barrier to contributing to AI innovation," said Mr. Orito. "Our teams also collaborate with external organizations, like Red Hat, to gain insight into best practices for containers, AI, and other technologies without necessarily hiring full-time Kubernetes professionals."

Preparing for the next phase of AI capabilities

After a successful launch, NTT East plans to continue enhancing its Video AI Service, including expansion to new regional data storage locations.

"Collaboration with third-party partners across market sectors is key to our business model. For local governments, we believe improving data integrations between industries for cross-sector collaboration can contribute greatly to their digital transformation," said Mr. Orito. "Mobile services will also be key to taking advantage of the massive volumes of data being collected and analyzed."

With support from Red Hat, NTT East will explore and adapt to the latest AI developments—and bring the benefits to its customers.

"AI services are just getting started," said Mr. Kushima. "There will likely be a need for more complex problem-solving as we tackle various social issues in the future. We are keen to continue collaborating with Red Hat in refining our services in response to customer needs, industry changes, and technology trends."

About NTT East

Nippon Telegraph and Telephone East Corporation (NTT East) develops businesses centered on information and communications to address problems faced by local communities in eastern Japan. Utilizing a range of telecommunications technologies, assets, and expertise, it has set goals such as achieving carbon neutrality by 2040 and is collaborating with partners to innovate and create sustainable recycling-oriented communities. https://www.ntt-east.co.jp/en/

About NVIDIA

NVIDIA's popularization of the GPU sparked the PC gaming market. The company's pioneering work in accelerated computing—a supercharged form of computing at the intersection of computer graphics, high performance computing and AI—is reshaping trillion-dollar industries, such as transportation, healthcare, manufacturing, and fueling the growth of many others. nvidia.com

About Red Hat Innovators in the Open

Innovation is the core of open source. Red Hat customers use open source technologies to change not only their own organizations, but also entire industries and markets. Red Hat Innovators in the Open proudly showcases how our customers use enterprise open source solutions to solve their toughest business challenges. Want to share your story? Learn more.

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. A trusted adviser to the Fortune 500, Red Hat provides award-winning support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

f facebook.com/redhatinc
 @RedHat
in linkedin.com/company/red-hat

North America	Europe, Middle East, and Africa	Asia Pacific	Latin America
1 888 REDHAT1	00800 7334 2835	+65 6490 4200	+54 11 4329 7300
www.redhat.com	europe@redhat.com	apac@redhat.com	info-latam@redhat.com

redhat.com
#198661_0323