

Mizuho Information & Research Institute, Inc. automates private cloud server setup with Red Hat



みずほ情報総研

Software

 Red Hat® Ansible®
Automation Platform

Partner

 ITOCHU Techno-
Solutions Corporation

Mizuho Information & Research Institute, Inc. (MHIR) is the in-house IT strategy and consulting business company for The Mizuho Group, one of Japan's three major megabanks. To develop applications in response to the fast-paced financial market, Mizuho created a private cloud infrastructure to consolidate its large, complex system footprint. MHIR used Red Hat Ansible Automation Platform to automate hardware setup processes for Mizuho Cloud (IA). As a result, MHIR has reduced related work hours by 78% and improved infrastructure stability with standardized, automated processes.


Headquarters
Information and communications technology (ICT)
4,246 employees

8 office locations

Benefits

- Reduced infrastructure hardware setup time from six weeks to as fast as three days
- Improved infrastructure stability and code quality with standardized automation
- Enhanced new automation approach with expert enterprise support

“While open source software is a reasonable option in terms of cost and innovation, there is value in the fact that Red Hat Ansible Automation Platform is the de facto standard Ansible product, backed by Red Hat’s enterprise support.”

Hiroyoshi Saito

 Deputy General Manager, IT Infrastructure
Systems Division 2, IT Infrastructure Systems Sector,
Mizuho Information & Research Institute, Inc.

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“To meet the high service-level requirements of our banking systems, stability and responsive specialist support are essential. Red Hat’s technical expertise contributed greatly to the success of this automation project.”

Hiroyoshi Saito

Deputy General Manager, IT Infrastructure Systems Division 2,
IT Infrastructure Systems Sector,
Mizuho Information &
Research Institute, Inc

Speeding infrastructure creation time to meet rapid financial market changes

The Mizuho Financial Group is one of Japan’s three major megabanks, offering comprehensive financial and strategic services. Its internal IT company, Mizuho Information & Research Institute, Inc. (MHIR), manages the group’s IT strategy and consulting business.

Around ten years ago, MHIR began an initiative to consolidate and virtualize the group’s physical servers. MHIR has helped the group establish a private cloud service infrastructure, Mizuho Cloud, to consolidate close to 120 systems, most used to assess banking markets and related information. These systems are comprised of close to 1,000 physical servers, 3,500 virtual servers, and petabyte-scale storage.

However, responding faster to financial market changes by developing and deploying new services meant Mizuho needed to reduce setup time for new development environments. MHIR had begun some automation by shell for virtual provisioning, but complexity and increasingly larger patches to support new software versions created delays. Hardware provisioning required close to six weeks of manual, on-site work by multiple engineers.

“With Mizuho Cloud, we’re aiming for release of services at public-cloud-like speeds,” said Hiroyoshi Saito, Deputy General Manager, IT Infrastructure Systems Division 2, IT Infrastructure Systems Sector, MHIR. “But to achieve that efficiency and respond to increasingly rapid market changes we urgently needed to automate our setup processes for virtual and physical development environments.”

Standardizing and automating provisioning with Red Hat Ansible Automation Platform

To automate its IT infrastructure configuration management, MHIR turned to Red Hat. After a successful proof of concept (POC) for operating system (OS) setup for Mizuho Cloud, the IT company decided to use Red Hat Ansible Automation Platform to automate all hardware resource provisioning. MHIR also chose Ansible Automation Platform due to its agentless, integrated nature and robust operational control capabilities.

Red Hat Ansible Automation Platform provides Software-as-a-Service (SaaS) capabilities for automation at scale, with effective content management and security, robust automation deployment analytics, and components that can shorten time to value. The platform is based on Ansible, an agentless IT automation technology that helps teams manage complex, multitier deployments and automate repetitive tasks.

“The superior usability of Red Hat Ansible Automation Platform in terms of user-friendly interfaces for execution control, flow control, and other management capabilities was a key selling point,” said Tomohiro Yamaguchi, former Section Manager, IT Infrastructure Systems Division 2, IT Infrastructure Systems Sector, and now Manager, Business Planning Division, Project Design Sector, MHIR.

The IT company worked closely with local partner ITOCHU Techno-Solutions Corporation (CTC) for design and development assistance for the new automation solution. After deployment, MHIR engaged Red Hat’s technical support teams to help maintain and optimize its Ansible Automation Platform processes and playbooks. MHIR has now standardized automation of all provisioning processes for Mizuho Cloud on Red Hat Ansible Automation Platform.



“An agentless solution [like Red Hat Ansible Automation Platform] would help us prevent an impact to the performance and stability of our critical banking operation systems.”

Tomohiro Yamaguchi
Former Section Manager, IT Infrastructure Systems Division 2, IT Infrastructure Systems Sector – now Manager, Business Planning Division, Project Design Sector, Mizuho Information & Research Institute, Inc.

Supporting application delivery with streamlined, supported infrastructure approach

Reduced provisioning times from weeks to days

By automating configuration and setup processes, MHIR has significantly shortened both hardware and virtualized resource provisioning times.

Before, hardware setup required lengthy on-site work and associated preparation, including datacenter entry procedures, engineer scheduling—for server, storage, and network staff—and other clerical tasks. Now, by automating a majority of the administrative tasks, hardware setup can be completed in as few as three days, rather than close to six weeks.

MHIR has also seen improvements in the number of work hours needed to build new virtual servers for Mizuho Cloud. Previously MHIR’s developers had to manually enter a command each time a resource was used, and version control using shell script required increasingly large updates that required more staff time. Using Ansible Automation Platform to automatically apply a set of frequently used commands has helped MHIR reduce the time needed to build virtual servers by 78%—from 77 work hours per 10 virtual servers to just 17 work hours.

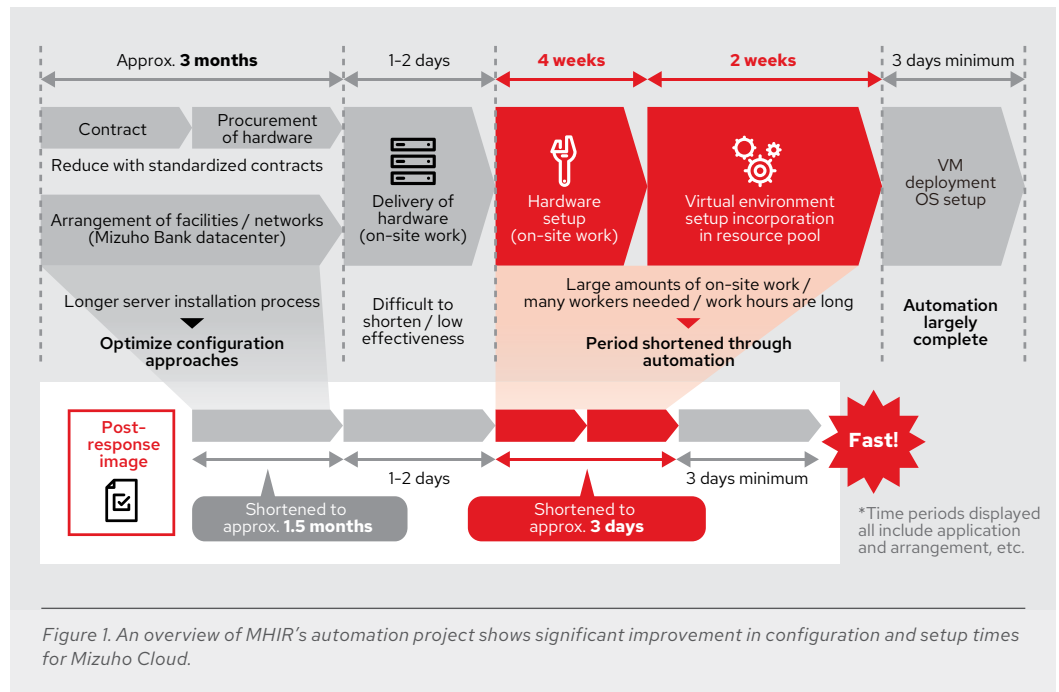


Figure 1. An overview of MHIR’s automation project shows significant improvement in configuration and setup times for Mizuho Cloud.

Improved infrastructure stability with standardization

Standardizing its server setup process with Red Hat Ansible Automation Platform has helped MHIR improve the stability and reliability of Mizuho's IT infrastructure.

Previously, manual command input by different engineers created risk of errors or variations in code – even with routine testing to ensure quality. Ansible Automation Platform's simple, human-readable YAML language, in the form of playbooks, lets teams across an organization share, vet, and manage automation content—even those without programming knowledge.

Additionally, using Ansible Automation Platform eliminates the need to install agents— services or processes running in the background—on servers or other devices. Instead, direct, remote file access eliminates the need to manage hundreds or up to thousands of these agents. "An agentless solution helps us prevent an impact to the performance and stability of our critical banking operation systems," said Mr. Yamaguchi.

By creating an automated, standard series of setup processes and tasks using Ansible Playbooks, MHIR has significantly improved the speed and quality of infrastructure deployments across different teams and locations.

Optimized new automation approach with expert support and guidance

Working with Red Hat's tested, supported Ansible solution has helped MHIR confidently take a new approach to its IT infrastructure.

"While open source software is a reasonable option in terms of cost and innovation, there is value in the fact that Red Hat Ansible Automation Platform is the de facto standard Ansible product, backed by Red Hat's enterprise support," said Mr. Yamaguchi. "To meet the high service-level requirements of our banking systems, stability and responsive specialist support are essential. Red Hat's technical expertise contributed greatly to the success of this automation project."

Support from CTC during initial implementation also helped MHIR adapt to its new automation-based infrastructure approach.

"Automating our hardware setup processes created a few challenges, such as converting physical operations like power supply controls into code and clarifying a few specifications," said Mr. Yamaguchi. "We overcame these challenges with CTC's extensive technical experience and capabilities."

Expanding automation efforts to new IT systems

With consolidation of its market assessment systems on Mizuho Cloud mostly complete, MHIR is now working to consolidate other systems, including its trust and banking systems, with a goal to eventually expand this automation-focused approach throughout the Mizuho Group.

MHIR is also looking at potentially adding new capabilities to its Red Hat Ansible Automation Platform framework, such as automating the full OS setup process and the system operation control process.

"With the successful automation of Mizuho's hardware and virtual environments using Ansible Automation Platform, we are near to completing our evolution to using Infrastructure-as-a-Service," said Mr. Saito. "In the next stage of our automation efforts, we are considering introducing containers and other innovative technology to evolve to Platform-as-a-Service operations."

About Mizuho Information & Research Institute, Inc. (MHIR)

As a think tank and IT company for the Mizuho Financial Group, MHIR seeks to generate new value and achieve the creation of a better society through the fusion of highly specialized consulting with innovative new IT. It not only supports the formulation of the group's IT strategies and leads the building and operation of its systems but also manages end-to-end solutions for customers in a variety of fields, from private-sector enterprises to government agencies.

About Red Hat



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