



How one hospital met its digital health demands—aggressively

University of Fukui Hospital renovates its medical system with IBM Cloud

by Brittany King
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Security has always been one of the more significant concerns for healthcare information technology. Powerful advancements have been made as of late to tighten up the protection of critical data, including the incorporation of dynamic cloud environments.

University of Fukui Hospital in Japan has spent years improving upon the security and stability of its patient data. What began in 2006 as a project to overhaul the virtualization of servers has grown into a multiphase project.



With the help of IBM, the hospital embarked on a journey to digitize its IT infrastructure. The medical facility's second phase included introducing electric patient records with the IBM Clinical Information System (CIS) and integrating the department business systems into the virtual infrastructure.

Yoshinori Yamashita, an associate professor for the Department of Medical Informatics at the hospital, explains: "The purpose for digitalization is not managing the machines. It is most important to provide the environment to use the data. It's how to collect and integrate medical information and use

them when needed. There are many staffs at university hospitals and therefore, they can hire information specialists. However, those general hospitals with limited staffs are not able to hire information specialists, and medical information services will match the future medical care.”

Yamashita adds that since University of Fukui Hospital owned all physical servers and storage within its machine room, there were issues with space, costs, the burden of operational management, data backup and countermeasures in times of disaster. Additionally, each medical professional used a desktop private cloud to access client terminals through the hospital’s physical server system. But with the latest phase rollout, the university hospital needed additional help from IBM to expand its on-premises IT facilities for the next generation of the “Integrated Hospital Information System.”

“It is safe to have data in hand, however, putting out the data means not only that we have a backup outside, but we can access all the systems outside, and they are all secured. In that sense, it is very beneficial to have the data outside.”

Yoshinori Yamashita, Associate Professor, Department of Medical Informatics, University of Fukui Hospital

Scaling cloud to fit hospital needs

After successfully working on earlier phases with the University of Fukui Hospital, IBM proposed that the facility initiate the fourth phase—improved information security by way of a hybrid cloud environment.

Using a combination of offerings, including [IBM Cloud® Bare Metal Servers](#), [IBM Cloud Object Storage](#), [IBM® Power® Systems Virtual Server](#), [IBM Spectrum® Protect](#) and other applications, the hospital rolled out a security-rich system designed for high availability. The updated environment runs 24-hours a day, 365 days a year, provides disaster countermeasures



and transitions the electronic patient records (CIS) to IBM Cloud.

“It is possible for us to utilize the data if we store them in the public

cloud. This time, we use IBM Cloud, but we can also use tools in various environments, using the services on cloud,” says Yamashita. “Putting out the data also has advantages as

the BCP—Business Continuity Plan—countermeasure. It is safe to have data in hand, however, putting out the data means not only that we have a backup outside, but we can access to all the systems outside, and they are all secured. In that sense, it is very beneficial to have the data outside.”

With the move to a hybrid cloud environment, the hospital’s vast amount of medical data is accurately placed within the right system in the right system environment using Bare Metal Servers and Power Systems Virtual Server. It allows for the use of additional cutting-edge technologies, such as high-level cloud security, scalable and durable storage services, and stability of the hospital’s existing on-premises environments.

“With this implementation, the hospital has become able to manage and operate the data in an optimal manner without having to expand the on-premises data capacity too much.”

Yoshinori Yamashita, Associate Professor, Department of Medical Informatics, University of Fukui Hospital

Information anytime, anywhere

Through deploying the IBM Cloud and hybrid cloud components, University of Fukui Hospital successfully migrated most of the data that was previously managed and operated by the hospital's staff to a public cloud. The facility can manage and optimally operate the data without overextending the on-premises data capacity, no longer needing a machine-room environment.

The number of on-premise servers was reduced by 70%, which reduced the load on the system operation staff. Users can now access necessary information "anytime, anywhere." This move has led to a reduction of staff



workloads and costs and solved issues such as backup support in times of disaster.

As for what the future looks like, University of Fukui expects to

streamline operations and improve the safety of patient records by using various cloud capabilities, including IoT and information and communications technology (ICT).



About University of Fukui Hospital

Founded in 1983 in Eiheiji, Japan, [University of Fukui Hospital](#) (external link) promotes research and development and the practice of the latest medical care. With a total of 600 beds and 1,600 employees, the community-based hospital makes efforts in hospital-clinic cooperation, which includes receiving patients who have been referred there by local hospitals and clinics.

Solution components

- IBM Cloud® Bare Metal Servers
- IBM Cloud Object Storage
- IBM Spectrum® Protect
- IBM® Power® Systems Virtual Server

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