



Which cloud helps FUJIFILM cut latency by 95 percent for a superb customer experience?

FUJIFILM

Customer
FUJIFILM Software Co., Ltd.

Partner
ZEN ARCHITECTS Co., Ltd.

Products and Services
Azure
Azure API Management
Azure App Service
Azure Cosmos DB
Azure Functions
Azure Search
Azure Storage
Microsoft Cognitive Services

Industry
Manufacturing

Organization Size
Medium (50 - 999 employees)

Country
Japan

FUJIFILM Software took a major step on its journey to the cloud by transforming its popular IMAGE WORKS image file management and sharing service in Microsoft Azure platform as a service. Beyond higher reliability and lower latency, FUJIFILM now has a system that delivers greater customer satisfaction. And it can add new features and releases faster and more frequently, giving it the agility to thrive in an increasingly competitive market.

When FUJIFILM Software debuted IMAGE WORKS in 2006, the image file management and sharing service quickly became a global standard for the way enterprises use images in their websites, catalogs, and marketing material. In 2016, prestigious users of the service included the G7 Foreign Ministers Conference in Hiroshima and the G7 Ise-Shima Summit.

The decade that brought increasing success for IMAGE WORKS also brought increasing challenges. While its technology had been state-of-the-art 10 years earlier, the legacy technology behind the on-premises, self-hosted solution was unfamiliar to new engineers and hampered efficient development. Customers requested new features at a frequency that was difficult to meet. The volume of image files soared to 1 terabyte (TB) per day, and the amount of corresponding metadata increased to 10 million objects. As these numbers increased, so did system latency. The way that customers could use metadata in workflows was a competitive advantage for IMAGE WORKS, but now that metadata was slowing the system's responsiveness to customers.

"We were pushing intricate fixes and improvements while delivering the service," says Yuya Watakabe, Advanced Solutions Group IMAGE WORKS team at the Services Division of FUJIFILM Software. "But our dependence on older technology required us to use specialized personnel for development and maintenance, and this was a drag on productivity. We had difficulty hiring developers with appropriate skill sets. We couldn't use agile processes, and we had to start every project by asking if the goal could even be achieved with the current platform."

Wanted: More innovation with less effort and lower cost

FUJIFILM Software could have addressed some of these challenges with a datacenter expansion. But that project likely would have taken years, and the same problems would have re-emerged eventually in the new infrastructure. More customers on an expanded version of the same architecture would also have made round-the-clock support increasingly impractical.

Watakabe and his colleagues wanted a solution that accelerated innovation while holding down operational cost and effort, so resources could be devoted not just to new features, but also to customer support. Enterprises undertake their digital transformations precisely to achieve these dual goals of more innovation and less cost. FUJIFILM Software decided to join them by migrating IMAGE WORKS to the cloud.

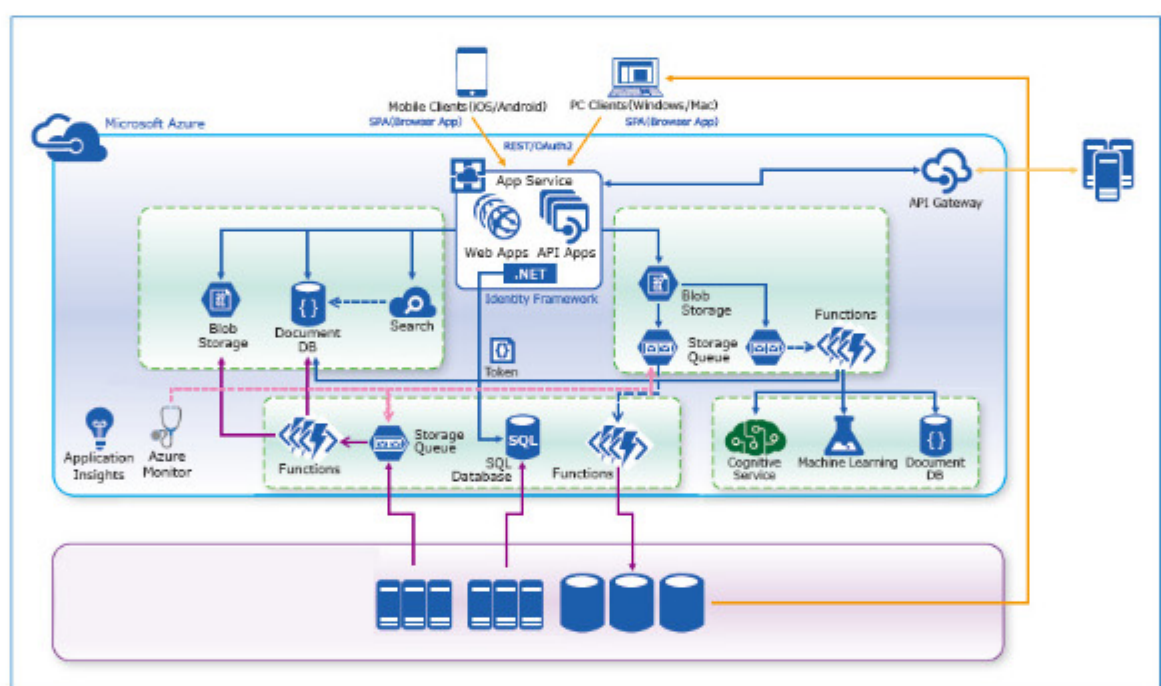
It considered major public-cloud options—especially using the criteria of security, reliability, and data protection—and chose Microsoft Azure. "We have an obligation to rigorously protect our customers' data," says Riki Sato, Team Leader of the Advanced Solutions Group IMAGE WORKS Team at the Services Division of FUJIFILM Software. "We have peace of mind hosting the data on Azure."

To take fullest advantage of Azure capabilities, FUJIFILM decided on a reinvention of its service with Azure platform as a service (PaaS), where it could use the extraordinary range of Azure services for faster development of effective solutions.

Development time cut by 75 percent

FUJIFILM executives had discounted an on-premises expansion because of the potential time and cost. They found the rebuilding of IMAGE WORKS with [Azure PaaS](#) a far more satisfying proposition. Azure technologies combined with the expertise of Microsoft technology provider [ZEN ARCHITECTS](#) enabled FUJIFILM to be up and running with its cloud-based IMAGE WORKS in just six months.

FUJIFILM's use of [Azure App Service](#) and the ability to develop the new IMAGE WORKS in separate service units and then connect them with [Azure Functions](#) helped to speed development. The company also used Azure Functions to implement microservices, which boost stability for service delivery. That's because, with microservices, FUJIFILM avoids suspension of its broader service when a single microservice fails or is taken offline for scheduled maintenance. The company had traditionally used waterfall development, but these Azure features supported FUJIFILM's adoption of agile development for IMAGE WORKS. The move from waterfall to agile cut development time for new functions by 75 percent.



The IMAGE WORKS architecture takes broad advantage of Azure App Service, API Gateway, Azure Functions and other Azure technologies.

With Azure, FUJIFILM also could hire developers and operations staff with skill sets in current technology focused on specific parts of the solution. Previously, it needed to search for staff with broad skills in legacy technology.

"This was the first full-scale implementation of PaaS at FUJIFILM, but we were able to move development along smoothly and cost-effectively, even when unexpected issues arose, by taking advantage of Azure capabilities," says Yuki Chiba, Design Leader of the Advanced Solutions Group IMAGE WORKS Team at FUJIFILM Software.

The fast development cycle wasn't just a technology benefit; it was a business benefit, too. "A long development and build period can lead to missed business opportunities," says Daichi Hayata, Design Leader of the Advanced Solutions Group IMAGE WORKS Team at FUJIFILM Software. "So Azure deserves high praise for helping us get to a fully validated release in six months."

Streamlined DevOps, greater reliability

Soon after development commenced, it also became clear to FUJIFILM that it could use Azure PaaS to reduce operational complexity and increase stability. The simplicity of the platform made it easy for FUJIFILM to standardize maintenance operations. All members of the development and IT teams now are versed in the end-to-end system, making it easy for any team member to fix issues, rather than having to escalate them to specialists.

The same Azure Functions and APIs that speed development also support greater uptime, because troubleshooting or regular maintenance of one service unit within the system can be done without taking other services offline. These capabilities also support the faster and more frequent release of new features and products, giving FUJIFILM another advantage in an increasingly competitive market.

Faster responsiveness, lower latency

FUJIFILM also sought greater user responsiveness and lower latency from the new IMAGE WORKS, and it got that, too, in part through its use of [Azure Cosmos DB](#) for the image file database. End-user response time accelerated by at least a factor of 10. Some interactions accelerated by more than 20 times. For example, the display of a tree view as part of image search processing that involved more than 140 tables and 1,000 rows of SQL queries declined from 45 seconds to 2 seconds. "The more responsive we can make IMAGE WORKS, the more productive our customers can be," says Chiba. "So Azure is also an important factor in raising the quality of our service and the satisfaction of our customers."

Given FUJIFILM's speed to market and initial success with Azure, it's exploring the use of even more services, such as [Azure Cognitive Services](#) for video and still-image analysis, and [Azure API Management](#) to link customer systems directly to the IMAGE WORKS platform.

"We envision a world where customers can use the data they put in IMAGE WORKS in any application they choose," says Sato. "That will make the data more useful to customers, more central to their businesses, and increase their ROI from that data. Microsoft and Azure are helping to make this vision a reality."

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—Yuki Chiba: Design Leader of the Advanced Solutions Group, IMAGE WORKS Team
FUJIFILM Software