

# Case study

## NTT DOCOMO, INC.

NTT DOCOMO, INC. calls upon Fujitsu to build and operate new cloud infrastructure  
The Japan-based mobile giant launched its Mobile Secure Desktop, as a new virtualized desktop service based on Fujitsu technology.



### Overview

NTT DOCOMO, INC., headquartered in Chiyoda-ku, Tokyo, is one of the world's leading mobile communications companies (President and CEO: Ryuji Yamada). In recent years, with the emergence of next-generation telecommunications technology, higher-speed and higher-bandwidth network connections have been approaching maturity. In February 2011, leveraging such technology advancements, the Japanese mobile giant, launched its new cloud-based DaaS (Desktop as a Service) offerings under the name Mobile Secure Desktop. It is primarily aimed at mobile worker productivity and convenience. This cutting-edge desktop service was achieved through close collaboration between NTT DOCOMO and its trusted ICT partner, Fujitsu. Recognizing Fujitsu's full SI capabilities and rich experience in client virtualization, NTT DOCOMO approached Fujitsu for help in deploying and operating the cloud infrastructure that would enable the service. NTT DOCOMO received overwhelming response from the market immediately following the Mobile Secure Desktop launch. The very scalable and flexible cloud foundation built at NTT DOCOMO now allows the company to quickly accommodate any increase in service user numbers. This has the company excited about supporting countless mobile workers across the nation.

Published on April 28, 2011

### The customer

Country: Japan  
Industry: Mobile communications carrier  
Employees: 11,053 (22,297: Consolidated)  
(As of March 31, 2010)  
Website: <http://www.nttdocomo.co.jp/>



### The challenge

- Deploy a secure and scalable cloud infrastructure.
- NTT DOCOMO was looking for an ICT partner who could provide comprehensive one-stop support from infrastructure deployment to operations. The company also needed their new cloud environment up and running as quickly as possible.
- A need for uncompromised capability to deliver excellent usability and end-user experience even over low-bandwidth connections.

### The benefit

- A highly-scalable and secure cloud environment was constructed, using Fujitsu PRIMERGY blade servers, Fujitsu ETERNUS storage systems and virtualization technology.
- Fujitsu's strength and SI capability helped NTT DOCOMO complete the cloud infrastructure deployment within a mere 8 months. Fujitsu also provides full support to ensure seamless operation of the Mobile Secure Desktop service. That included the creation of a viable software licensing regime in the cloud.
- Adoption of the Citrix virtualization solution with features to enable differential data transfer between Desktop Service environments and user terminals, ensured communication efficiency. Fujitsu also provided design support for desktop service screen development.

#### Products and services (hardware)

- PRIMERGY BX922 blade servers
- ETERRNUS DX90 disk storage system
- ETERNUS NR1000 F3140 network disk storage

#### Products and services (software)

- Citrix XenDesktop desktop virtualization solution (XenApp and Provisioning Services are the main components.)

#### Customer's background

##### NTT DOCOMO unveiled its new DaaS offerings to the market in February 2011

NTT DOCOMO, INC., the largest mobile communications operator in Japan, has been an influential force in the evolution of mobile technologies and standards in Japan, and in providing leading-edge mobile services to its customers. Examples of the most advanced communications technologies introduced by NTT DOCOMO include the company's trademarked i-mode, FOMA and Xi (read 'Crossy'), and Japan's first LTE (Long-Term Evolution)-based network services. In 2010, inspired by its corporate philosophy "We will create a new communication culture," NTT DOCOMO implemented a new corporate vision "Pursuing Smart Innovation: HEART (2020 Vision)". This marked the company's intention of achieving further growth and delivering new value to its customers and society. In upholding that strong message, NTT DOCOMO is very active in fostering a range of activities to realize smart innovations.

As part of the company's efforts to facilitate work related innovations, NTT DOCOMO wished to start a new service that would support mobile workers and bring significant improvements in their productivity and convenience. "Traditionally, bandwidth issues had remained the fundamental challenges in implementing cloud computing to a mobile computing environment," explained Mr. Hiromiki Moriyama, Director, Solution Business Department, Corporate Marketing Division at NTT DOCOMO, INC. "However, in recent years, we've been able to see significant advancements in network bandwidth, quality and speed. For example, NTT DOCOMO's latest Xi service has made it possible to provide ultra-high-speed and stable internet connections. Those changes in the external environment presented the opportunity to us, and in May 2009, we decided to embark on a project which would provide a commercially available Mobile Secure Desktop. This would be aimed at delivering innovative cloud-hosted desktop computing to mobile workers," continued Moriyama.

When NTT DOCOMO began working on the project, it wanted to develop the new service in a forward-looking manner. The intention was not only to accommodate existing customer needs, but also generate solutions for the future. "For further growth of our cloud-based service business, building a highly-secure, scalable and flexible cloud environment was one of our paramount goals to. That would allow us to quickly respond to change and diversity, and maintain our competitiveness in the global marketplace. At NTT DOCOMO we put effort into the design and development of the new service and in parallel we commenced infrastructure deployment planning," said Moriyama.

##### NTT DOCOMO's New Service Aimed at Mobile Workers Mobile Secure Desktop achieves significant productivity improvements and enhanced data security

NTT DOCOMO's Mobile Secure Desktop is a cloud-hosted virtual desktop service. It is designed to enable mobile workers to work more effectively and efficiently at any location in the world. They do this by

accessing a centrally-managed desktop environment from their PCs, zero-client devices and tablets. Wherever they connect mobile workers use the same desktop environment and have work continuity without concerns about data security issues. Users are also freed from the threat of information leaks, as all important user data resides in a secure environment within the NTT DOCOMO datacenter, and not on the local devices. Mobile Secure Desktop also significantly reduces desktop administration effort and associated costs.

Ms. Chisa Yoshidomi, a staff member in the Solution Business Department, Corporate Marketing Division at NTT DOCOMO talked about the background and objectives of the company's launch of the Mobile Secure Desktop service. "From the viewpoint of increased mobility, one of our urgent tasks was to address the common challenges that many businesses are facing in today's society – enabling people to do their jobs more efficiently and productively. In particular allowing them to work on their PCs at any time from any location, inside and outside the office, without concern about data security problems. Since the introduction of the Protection of Personal Information Act [Personal Information Protection Law (Japan) enabled in 2003], organizations have been under increasing pressure to meet strict security compliance standards. Today, it's estimated that as many as 70 percent of Japanese businesses have some sort of prohibition on employees taking their PCs away from the office. However, in examining real-world situations, that kind of excessive security policy is causing significant inconvenience to many employees and actually limiting their productivity. I believe NTT DOCOMO can help resolve such situations. With our new virtualized desktop service, we are aiming to address two heterogeneous goals. These are delivering improved productivity and tightening information security for our customers." Before going to a vendor for help with infrastructure deployment, NTT DOCOMO spent over a year on thorough internal considerations, discussions, and evaluation of the concepts of the new service. "Maintaining the users' point-of-view was we thought the most important factor when developing and evaluating the service. At NTT DOCOMO we created a test environment and evaluated the concepts of Mobile Secure Desktop with experimental user groups. In assuming that the service would be used in a mobile computing environment, one of our biggest challenges was to ensure an excellent browsing experience and stress-free communication even for users with low-bandwidth connections. To solve such challenges, we tried the Citrix client virtualization software and decided that the adoption of Citrix would be a great solution. The Citrix software provides a feature that enables differential data capturing and transmission between the Desktop Service environment and user terminals. This greatly improves communication efficiency as the least amount of data is transferred," said Mr. Yasunori Kondo, a staff member in charge of business strategy, Solution Business Department, Corporate Marketing Division at NTT DOCOMO, INC.

## End-to-End Support from Fujitsu Enables the Mobile Secure Desktop Service

### Comprehensive capabilities are the key in selecting an ICT partner to jointly drive the project

NTT DOCOMO completed the definition of their Mobile Secure Desktop infrastructure after undertaking thorough testing and evaluation, including the monitoring of test results and market trends. They then started to look for an ICT partner they could work with. "We compared the capabilities of ICT vendors from many angles. To achieve a successful roll out of the new service NTT DOCOMO really needed a trusted partner with full strengths in SI and support capabilities. One that would not only help us deploy the core cloud foundation for our new service but also operate the new cloud environment. Taking many factors into consideration - for example, their existing line of products, strengths in solution deployments, and very importantly, rich experience and expertise in Citrix implementations, NTT DOCOMO concluded that Fujitsu would be the partner we could rely on," says Mr. Takashi Toda, a staff member in the Solution Business Department, Corporate Marketing Division at NTT DOCOMO. "We also really appreciated Fujitsu's effort and ability in meeting our needs by completing the infrastructure deployment tasks in such a short lead time - as we didn't have much time before rolling out the service," continued Toda.

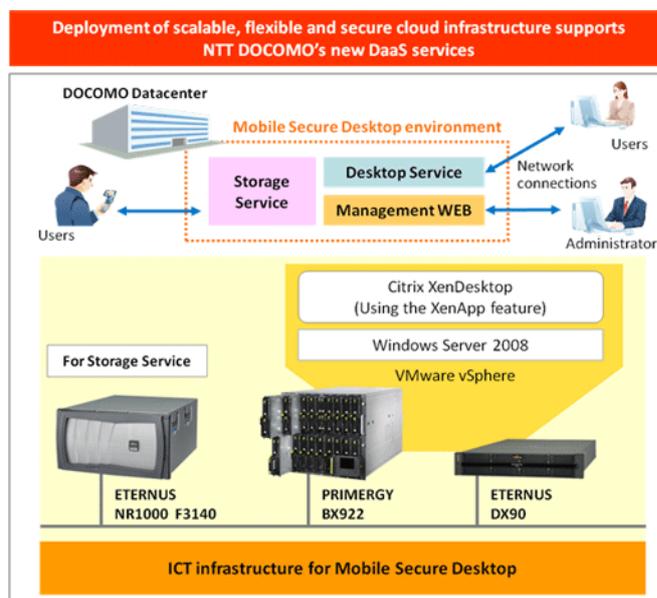
Mobile Secure Desktop directly delivers a familiar Windows-based desktop environment to users - as a service. This enables them to start working on their virtualized desktop anytime and anywhere they wish. They simply log on using their own log-on account and password. In the Mobile Secure Desktop environment, OS installation effort is also no longer required for each individual local device.

In providing such services, it was essential for NTT DOCOMO to have sophisticated software license management, and there is still room to improve the existing software licensing models. "In the age of clouds and on-demand computing, there's been a lack of standardization of approaches to software licensing. This is because not all software vendors provide cloud-ready licensing models. That's the real situation today. NTT DOCOMO and Fujitsu, as a distributor, are now collaborating to resolve the technology barriers related to software licensing in the cloud," said Mr. Teiju Konno, a staff member in charge of business strategy in the Solution Business Department, Corporate Marketing Division at NTT DOCOMO.

With the new DaaS offerings, NTT DOCOMO wished to support every day business activities and mobile worker communication. As a result, ensuring usability was another priority development area of the Mobile Secure Desktop. "In the process of developing Storage Service, which is NTT DOCOMO's proprietary on-line application for Mobile Secure Desktop, we relied on Fujitsu to design and develop the service screens and a set of management tools. We gave Fujitsu lots of requirements, some of which I believe were very challenging to meet. But Fujitsu really came up with the goods for us, in a very responsive manner. Thanks to comprehensive support from Fujitsu, we were able to get the job done within the given short time period and without compromising usability of the service," recalled Mr. Yuichi Tanoguchi, a staff member in the Solution Business Department, Corporate Marketing Division at NTT DOCOMO, INC.

In July 2010, the Mobile Secure Desktop project entered its actual cloud deployment phase. With all the effort put in by NTT DOCOMO in conjunction with Fujitsu, the cloud infrastructure was successfully built

within a mere 8 months. NTT DOCOMO chose to adopt Citrix XenDesktop virtualization software to create the virtualized desktop environment. For the underlying hardware, the company selected Fujitsu's hardware products, which are well recognized as meeting customer demands for higher reliability. These included: Fujitsu PRIMERGY BX922 blade servers, Fujitsu ETERNUS DX90 storage systems and the ETERNUS NR1000 F3140 network disk array. NTT DOCOMO also understood the high density consolidation capabilities of Fujitsu PRIMERGY, its complete set of server management tools and the advanced features in the ETERNUS storage, including data deduplication. With this great combination of versatile virtualization technology and high reliability hardware the resulting cloud foundation, built in the NTT DOCOMO datacenter, achieved greatly scalable and a secure environment for multi-tenancy.



[System Configuration at NTT DOCOMO]

### Business Benefits and Future Scenarios

#### Supporting expanded use of cloud computing in society

In February 2011, Mobile Secure Desktop was made available commercially, and immediately following the service launch, NTT DOCOMO received overwhelming responses from the market. The company assumes that the exclusive advantages provided by Mobile Secure Desktop are drawing user attention. One user benefit is the minimum level of initial investment. The service can be implemented by purchase of a single user account that comes with standard desktop features such as Microsoft Office Suite, email and anti-virus software. Mobile Secure Desktop users are also provided with access to the Storage Service that allows them to upload/download files and manage their address books. If a user device is lost or stolen, the associated user account can be remotely locked out to prevent unauthorized access to the device. These features are all included in the service, enabling the users to achieve significant ROI.

"The response to Mobile Secure Desktop has been immense. Of course, the service is now used by many mobile workers who need to work outside of the office or at multiple sites. In addition to such orthodox usage, we are striving to expand the use of the service for wider purposes. For example, some of our customers have expressed great interest in implementing Mobile Secure Desktop for trial purposes, to

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test the concepts of clouds before they actually move into a full cloud environment. We are also excited to see the expansion of our service into non-traditional fields such as SOHOs, schools and in-home medical care. Previous introduction of such advanced technology was a challenge due to small user volumes and budget constraints," said Mr. Yasushi Mori, Manager, Solution Business Department, Corporate Marketing Division at NTT DOCOMO, INC.

Looking forward, Moriyama is very excited with the many possibilities that Mobile Secure Desktop will bring. "I strongly believe this solution is a great example of the power of mobile cloud computing, which will be a driving force in supporting technological evolution in Japan. We will soon move into a new age where desktop PCs are consumed as a service, not as a physical asset to purchase. At NTT DOCOMO, we are thrilled to accelerate our effort to expand the Mobile Secure Desktop business and continue to make our services better and better. To realize our vision and aims, we greatly look forward to continued work with Fujitsu."

NTT DOCOMO, INC. is striving to cultivate unlimited possibilities in mobile communications and provide future-generation services to its customers. As a trusted ICT partner of NTT DOCOMO, Fujitsu is one-hundred percent committed to providing end-to-end support to facilitate the innovations of NTT DOCOMO and help the company take on new challenges.



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2011-04-28-JP-EN

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