TOYOTA TECHNICAL DEVELOPMENT CORPORATION ENCOMPASSES THREE BUSINESS SEGMENTS, Measurement & Instrumentation Control, Intellectual Property, and Business Management. The Measurement & Instrumentation Control Business Field is responsible for the planning, development, operation, and management of the measurement and instrumentation control solutions used by Toyota Motor Corporation and the Toyota Group in their global automotive development, manufacturing, sales, and services. These solutions are essential for a wide range of processes in the car manufacturing industry and the group is responsible for providing these highly specialized solutions which often involve corporate trade secrets to the entire Toyota Motor Corporation and Toyota Group.

The Measurement & Instrumentation Control Business Field is inspired by its corporate vision of “Leading all of Toyota – Further, Faster and Deeper into the Future.” TTDC is driven by determined staff members briskly moving in support of their director's policy of “SAIKI-KANPATSU (demonstrate the power you have to the maximum)”. The IT department works on planning and management, as it relates to information systems and infrastructure, and provides a basic framework which supports, but does not interfere with, daily design and development work.

THE CHALLENGE

The Toyota Technical Development Corporation had to use an IT Business Continuity Planning (BCP) in order to properly protect important data and ensure business continuity in the case of any disruptive event. As a result, TTDC decided on adopting a virtual desktop system (VDI), and faced the issues of migrating from the existing system, and securing stress-free operation at a cost effective price.

“After a major earthquake hit Japan on March 11, 2011, our Field began looking into business continuity strategies and started working with an IT BCP. Even if our data is fully protected, it’s meaningless if we cannot service our customers, so we chose the VDI as an environment that would ensure business continuity. At the time of the introduction of the VDI, performance issues were of major significance,” said Akira Ishita. Atsushi Kato added that, “Storage systems that would meet performance needs required very large initial investment and maintenance costs, so we felt that adopting the VDI would be extremely difficult. To enhance performance, many of these products require greater memory capacity, and when I was just feeling doubtful about going with the VDI, I encountered the DDN product. I had heard rumors that it was fast and very scalable, but I didn’t really believe it until I had verified it with my very own eyes (laughing)!"

Yasuhito Kurebayashi remarked that to resolve the issues surrounding the introduction of the VDI, they could see that it was first of all necessary to migrate the storage system currently in operation, and then expand its memory capacity and scalability as necessitated by the increased I/O speed. “The system needed to meet these two requirements and warrant the high initial outlays, and we eventually decided to deploy the DDN product.” Akira Ishita explained that, “Previously we were using another vendor's system. This system did contribute to file server integration and aggregated application server virtualization, but, as previously mentioned, it had some difficulty meeting the VDI prerequisites. At this point it was decided that we should switch over to scalable storage, to be supplemented as needed, and adopt the DDN product that met our prerequisites for performance, scalability, and pricing.”

WHY THEY CHOSSED DDN

• It met the requirement for migrating functions from the existing system.
• It fulfilled the demand for I/O performance and scalability.
• In addition to meeting the above prerequisites, installation and post-installation cost effectiveness were outstanding and maintenance costs were reasonable.
In discussing the merits gained by adopting the DDN solution, Akira Ishita explained that “First of all, we were impressed with DDN’s adaptive flexibility after installation. We were able to work together with the US head office to get the new functions we wanted.” He went on to say, “The performance displayed by DDN was astonishing, with the storage performing so quickly, the network speed could not keep up and there were network bursts many times. We were measuring VDI performance using tools from Liquidware and each virtualization machine registered the promised 140 IOPS. We are thinking the VDI performance is a result of the storage itself and believe we have made a very good purchase indeed. This may sound a slight exaggeration but we think that after adopting the DDN product our storage costs have decreased by 50% and our performance has risen by 200%.”

“in the future, support for not just VDI, but for IoT, Big Data, and deep learning will also become essential. We would very much like to enter into technical cooperation with DDN, excelling as it does in massive, high speed solutions.” added Yasuhiro Kurebayashi.