

Renesas and OpenText

Optimize Network Experience

OpenText Exceed™ VA TurboX centralizes network for geographically dispersed engineers

Renesas Electronics Corporation, the world's number one supplier of microcontrollers, is a premiere supplier of advanced semiconductor solutions, including microcontrollers, System-on-Chip (SoC) solutions, and a broad range of analog and power devices, as well as Liquid Crystal Display (LCD) modules. With design engineers working in virtual teams across the continent, it was imperative that they be able to access the information they need, so Renesas began using small-scale servers. This solution worked well, but as the organization continued to grow so did the number of servers, and within a year, Renesas saw a need for improved control of their content.

The team at Renesas realized that the progressive decentralization of servers used for its semiconductor design activities had led to inefficiencies in the design process and increased operational management workload.

More capacity needed

The use of small-scale servers at satellite bases and cooperating companies gave rise to a variety of problems: foremost among them was insufficient capacity of the servers and heavy network bandwidth usage. The volume of design data was continuing to grow in inverse proportion to the steady miniaturization taking place in semiconductors. Moreover, since design work involves the use of the X protocol (X Window) for communicating between a Windows® Client PC and an Electronic Design Automation (EDA) tool using the UNIX® and Linux® operating system, the network traffic volume inevitably increases. The network was further taxed with more generic usages, such as the sending and receiving of email for its thousands of engineers.

Difficulty was experienced in the bi-directional exchange of data between the engineers' PCs and the server, and the efficiency of the design process suffered due to the poor response time. While the company's own Local Area Network (LAN) provided a

INDUSTRY

- Manufacturing

CUSTOMER

- Renesas Electronics

BUSINESS CHALLENGES

- Awkward technical barriers imposed by geographical distance
- Weak server infrastructure due to numerous small-scale servers
- High network traffic volume
- Low number of users able to work on the network

BUSINESS SOLUTION

- OpenText Exceed onDemand® (now called Exceed™ VA Turbo X)

BUSINESS BENEFITS

- Lower Total Cost of Ownership (TCO)
- Reduced traffic volume and more efficiency
- Working methods greatly improved due to centralized server
- Improved speed and quality of design work
- The crash and resume functionality safeguards work during sudden power outage

“In the final analysis, it was the reduction in traffic volume made possible by data compression that appealed to us. I would say that it has reduced our data volume to about one tenth the level we had before. Whereas previously we could have a maximum of only 10 people using the network, we can now have up to 100 people working on it, and that is an enormous advantage for us.”

KOU TANAKA,
ENGINEER, PRODUCT TECHNOLOGY DIVISION, RENESAS ELECTRONICS AMERICA INC

better option, some of the divisions used a slow network connection of less than 1Mbps, and the uploading of data to the server center was a significant burden for the engineers, both physically and mentally. Operational management of the servers was also difficult. Personnel were chosen from among the engineers to manage the system in parallel with their design duties, but the considerable amount of work this entailed meant that they were unable to concentrate on their primary function.

OpenText solution increases design efficiency

To address these problems, Renesas commenced a trial introduction of OpenText Exceed onDemand (now called Exceed™ VA TurboX), a next-generation, thin-client PC X Server, and proceeded to concentrate its server resources on a company-wide scale. Servers at satellite design bases were all removed and consolidated at three core centers: Musashino in Tokyo, Kita-itami in Hyogo, and Takasaki in Gunma. Design work could now be carried out by selecting an appropriate base for the product concerned and forming a virtual team of engineers from across the country to work on its development. Engineers were now able to make joint use of the application server and file server located at their chosen base.

Through use of its original Thin X Protocol (TXP) for communications, Exceed onDemand has reduced traffic volume to about 1/100 that of a conventional PC X server. Exceed onDemand has the capability to reduce the operational workload through the realization of a thin-client model, including making it possible to distribute client modules via a web browser.

Today, not only has the company's online traffic volume been significantly reduced through the compression technology provided by Exceed onDemand, its engineers' productivity has been greatly improved. This has allowed Renesas to focus on advancing operations with a fully ubiquitous network, one that provides competitive products for a broad array of electronic equipment across a wide range of sectors. This strategy has resulted in making Renesas the world's top multipoint control unit manufacturer in the semiconductor industry.


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Lower total cost of ownership

Tanaka says another huge benefit of consolidating the servers is the reduction in total cost of ownership. “Of particular value is the fact that the manpower expended on operational management of servers at the satellite design bases has been cut to nothing. This means not only that personnel at the bases can now concentrate entirely on their design work but also that the workload of the personnel responsible for maintenance of the three server centers has been drastically reduced,” says Tanaka.

Another major reason behind the selection of this OpenText Connectivity Solutions product was “Crash and Resume”. This function saves data on the Exceed onDemand server when an X session is disconnected for any reason and users can resume the session and continue working where they left off any time they want.

“This is a tremendously convenient function,” explains Yukihi Ohta, an administration group manager in the Product Technology Division at Renesas. “At certain bases, power cuts are common in summer because of frequent thunderstorms, so with crash and resume, we can be prepared for such events. It is also very convenient if you want to turn your computer off for security reasons at the end of the day, but you still want the server to continue with calculations. Also, you sometimes need to go to another base to tie things up with the other engineers at the final stage of a design or go out to visit customers.”



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Shojiro Umezaki, an engineer in the Design Department of the Industry Infrastructure Services Office within the Industry Information Services Division of Hitachi Information Systems, is based at the server center and has directed the implementation of this project and credits OpenText Connectivity Solutions reseller Macnica Networks with providing rapid and flexible support in response to all their requests. “That’s really been helpful,” says Umezaki. Macnica Networks is a leading distributor and integrator of computer and communications equipment in Japan, and has been an authorized reseller of OpenText Connectivity Solutions for almost 20 years. Macnica was commissioned by OpenText to localize, manufacture, and distribute selective products in the Japanese market, including Exceed®, Exceed onDemand, NFS Solo™, and NFS Client™.

As for future developments, Renesas is proceeding with the introduction of Exceed onDemand to provide the same design environment to all of its divisions’ thousands of engineers. Ohta explains, “To further improve the speed and quality of design work, which is at the very core of our operations, it is essential to provide a truly comfortable design environment for our engineers, and I see that as being our mission. From the point of view of design efficiency, the ideal is to be able to access EDA tools from anywhere using a single infrastructure.”

A future with OpenText Connectivity solutions

Based on the success they have had with their OpenText solution, Renesas intends to undertake parallel development on a divisional basis to realize the grand vision of having the thousands of engineers within the company using an integrated design environment based on Exceed onDemand within one or two years.