

**NOTICE:**  
Riverbed® Product Names  
Have Changed  
Steelhead is now  
SteelHead™

## IN BRIEF

### Industry

- » Manufacturing (Automotive)

### Challenges

- » Reducing the cost of operations
- » Improving data security
- » Making the level of service more uniform

### Solution

- » Riverbed Steelhead Appliance

### Benefits

- » TCO savings of 1,000,000 yen per month
- » Access performance comparable to that of a LAN, through a 90% reduction in WAN traffic
- » Improved data security through centralized management
- » Improved availability

クルマづくりの原点へ。



MITSUBISHI MOTORS



## Mitsubishi Motors Corporation, Ltd.

### 3TB File Server Consolidation Project completed with the Riverbed Steelhead® Appliance

Realizing a cost savings of over 12,000,000 yen per year through WAN optimization, with improved data security and improved availability

Mitsubishi Motors Corporation, Ltd. ("Mitsubishi Motors") was aiming to further increase its competitive strength by consolidating its information systems at key locations within Japan. As part of this effort, in 2005 they consolidated a total of 50 Windows NT-based file servers (5000 users) at three locations whose hardware maintenance contracts had expired, replacing them with a single EMC Celerra NS series. By introducing the Riverbed Steelhead appliance, they were able to provide end users with performance comparable to that of LAN access and reduce WAN traffic by over 90%. They also strengthened data security, centralized management, enabled a large reduction in TCO, and improved availability.

#### Issue: Consolidation of Windows NT-Based File Servers Distributed At Three Locations Into One Location Without Loss of Performance

At Mitsubishi Motor's main locations within Japan, namely, the Mizushima factory, the Power Train factory, the passenger car engineering center, and headquarters, a total of about 1000 servers of various types are in operation. Most of them had been introduced and were operated by individual departments, and therefore there was a lot of room for TCO savings. Their consolidation had become a company-wide issue, including items such as unification of management standards and service levels.

The issue was company-wide consolidation, including TCO reduction, unification of management fundamentals and service levels.

Just at that time, during 2005, in three locations in the Kansai region, there were about 50 Windows NT-based file servers whose hardware maintenance contract periods had expired, and the Mitsubishi Motors IT planning department decided to consolidate the servers when they were replaced.

"In our company, the operations management of servers is outsourced, and the maintenance contract fee depends on the number of servers. So in order to lower the cost, it was necessary to reduce the number of servers by consolidating them. It was also an urgent matter to consolidate the servers in order to enable centralized management. Doing so, we could unify access rights management, which was handled differently in each department, as well as the backup management standards, and thereby strengthen data security," said IT planning department expert Yasuhiro Nishikawa.

#### Solution: The Riverbed Steelhead Appliance

As it took steps towards server consolidation, the Mitsubishi Motors IT planning department initially worried that inter-regional consolidation using CIFS over a WAN



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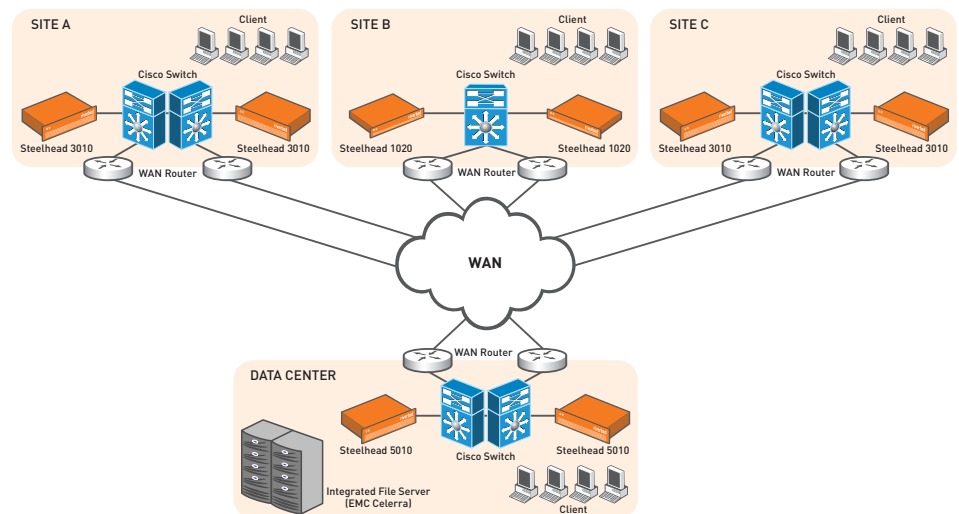
would not provide satisfactory user performance, so they formulated a plan that included both consolidation between key locations, and separate consolidation at each location. However, after they saw the Riverbed Steelhead appliance at the 2005 Data Storage Expo, they decided to combine the servers at the three key locations in the Kansai region into one. Mr. Nishikawa of the IT planning department explains what happened at that time as follows: "At first we didn't have high hopes for the results that WAN optimization could produce. However, we borrowed a test machine to try out the Riverbed Steelhead appliance, and when we tried out applications under conditions similar to those of actual usage environments, the performance was superb, and we came away with a whole new perception of it. At that point we decided to unify the servers across key locations."

However, while consolidating servers across regions with WAN optimization, the Mitsubishi Motors IT planning department still had to provide a service level that met the stringent requirements of end users.

Mr. Nishikawa speaks openly of the difficulties prior to introduction: "WAN-optimized equipment was an unknown technology in our company, so at informational meetings for users, the questions concentrated on the issue of whether performance could really be guaranteed." In order to answer such criticisms, the IT planning department performed repeated simulations addressing that issue, and what would happen if they performed consolidation using the Riverbed Steelhead appliance. They carefully verified that it would be possible to consolidate using the existing bandwidth. Again, when the actual layout of the Riverbed Steelhead appliance and the server design were decided, the IT planning department, before the fact, conducted a detailed investigation of the number of sessions and the amount of data to be transferred.

**We decided to use the Riverbed Steelhead appliance, which enabled consolidated servers with superb performance.**

#### Mitsubishi Motors Deployment Architecture



This task was given to Mr. Hideo Okada, the chief of the third engineering department in the technology headquarters of MCOR Co., Ltd, who recalls the difficulties of that time as follows: "We investigated the amounts of data on all the file servers at the time, the traffic, and the amount of data transmission, to decide on the specification. This study would decide whether to consolidate servers across locations, so we were very nervous."

Before using the Riverbed Steelhead appliance, Mitsubishi Motors also did comparisons against competing products. Along with performance, factors that led to the choice of Riverbed included the wealth of compatible protocols and applications, cost performance and a strong support structure. Junichi Tomita of the IT planning department, who was responsible for the planning, described an episode in which "a product competing with Riverbed was unable to open some application files that are essential to our company."

**With the TCO conversion, operating costs have reduced by 1,000,000 yen or more per month. Also, performance comparable to that of LAN access was achieved due to a 90% reduction in WAN traffic.**

In this way, after various investigations, the final specification put together by Mitsubishi Motors was to consolidate about 50 Windows NT-based file servers (3.5 TB) at three key locations in the Kansai region into a single EMC Celerra NS series NAS, and use the existing wide-area network (10 to 60 Mbps) to establish a CIFS connection between the key locations via the Riverbed Steelhead appliance. Mitsubishi Motors uses two SH5010 machines, four SH3010 machines, and two SH1020 machines.

Transition work on file servers at each location began in May 2006, and by November 2006, all the data at said locations was stored in the EMC Celerra NS series.

Since that time, minor adjustments have been made, such as in the settings for administrative rights that are not suited to use the increased speed provided by the Steelhead appliance, individual processing of certain high volume files, and the transition to daily business operation has been implemented without problem.

#### **Effect: Major Reduction in TCO, Enhanced Data Security, and Improved Availability**

At Mitsubishi Motors, now using the Riverbed Steelhead appliance to consolidate servers across regions, they have been able to achieve their initial goals, namely, a great reduction in application cost, improved data security through centralized management, and a great improvement in availability.

"With the TCO conversion, we are saving over 1,000,000 yen per month, and in addition, centralized management has strengthened data security. Service levels, which previously varied at each location, have also improved," said Mr. Nishikawa.

Also, by using an active standby redundant structure in which two Steelhead appliances are continuously in operation, reliability has greatly improved. Together with the next-generation consolidated storage environment, high availability has been realized.

"In the environment prior to consolidation, there were applications that, separately from the file servers, used CIFS, so WAN access had become heavy, and we were asked whether that situation could be improved. Now, with consolidation that uses the Steelhead appliance, we've seen a dramatic increase in speed. We haven't researched each user individually, but it appears that user satisfaction in general is extremely high," noted Mr. Nishikawa.



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## Future Prospects: Further Server Consolidation Involving Overseas Locations and the Addition of Applications

With the successful completion of this consolidation project using the Riverbed Steelhead appliance, the Mitsubishi Motors IT planning department has great confidence in server consolidation across regions. Mr. Tomita, who worked on this project, gave a positive analysis: "There are several minor issues, but overall, the choice of server consolidation with the Riverbed Steelhead appliance was a good one. We plan to continue with this method in carrying out future server consolidation."

The Mitsubishi Motors IT planning department has introduced the Riverbed Steelhead appliance into the environment for server consolidation at headquarters, which had been started before the server consolidation across the three key locations in the Kansai region. In addition, it is now looking into using the same method for further consolidation, such as for CAD applications and mail servers that are currently running separately within each location, and file servers at key overseas locations.

The Riverbed Steelhead appliance is set to play an ever-increasing role in providing a more efficient IT strategy for Mitsubishi Motors.

## About Riverbed

Riverbed delivers performance for the globally connected enterprise. With Riverbed, enterprises can successfully and intelligently implement strategic initiatives such as virtualization, consolidation, cloud computing, and disaster recovery without fear of compromising performance. By giving enterprises the platform they need to understand, optimize and consolidate their IT, Riverbed helps enterprises to build a fast, fluid and dynamic IT architecture that aligns with the business needs of the organization. Additional information about Riverbed (NASDAQ: RVBD) is available at [www.riverbed.com](http://www.riverbed.com).



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