

## IN BRIEF

### Industry

- » Semiconductor

### Challenges

- » Slow application performance over the WAN reduced productivity in remote offices
- » Remote office employees were not using applications hosted at headquarters, which limited their ability to collaborate
- » Existing WAN links for overseas offices were at capacity and in need of upgrades

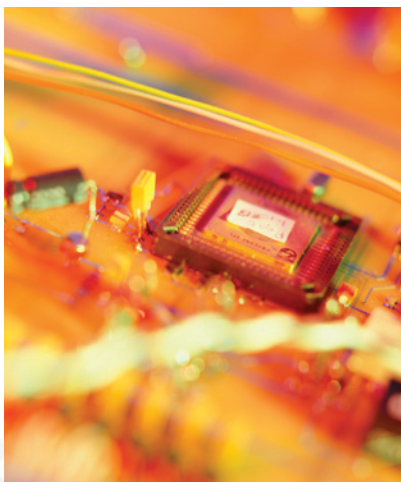
### Solution

- » 16 Steelhead appliances deployed in branch offices around the world

### Benefits

- » Bandwidth capacity increase of 4.3x, and \$100,000 - \$200,000 a year in bandwidth savings
- » Payback period of less than 12 months
- » Faster response times for key enterprise applications (Oracle PLM, SAP NetWeaver)
- » Enhanced productivity and collaboration for employees in remote offices

**MINDSPEED**  
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# Mindspeed Technologies

## Riverbed® Steelhead® Products Improve Productivity and Reduce Costs for Semiconductor Company

Mindspeed Technologies, Inc. (NASDAQ: MSPD) designs, develops and sells semiconductor networking solutions for communications applications such as VoIP and broadband optical transmission in enterprise, access, metropolitan and wide area networks. The company is headquartered in Newport Beach, CA, and has 500 employees and had about \$160 million in revenue in fiscal year 2008. Mindspeed has over 20 geographically diverse remote office locations, including offices in the Ukraine, India and China.

Mindspeed's three key product families include high-performance analog transmission and switching solutions, multiservice access products designed to support voice and data services across wireline and wireless networks and WAN communications solutions, including T/E carrier, network processing and traffic management devices.

### Challenge: Slow Network Performance Limited Collaboration and Productivity

Mindspeed was becoming an increasingly global organization with more engineering resources overseas. "Newport Beach is our primary location, but we've recently opened design centers in the Ukraine, India and China," said the CIO of Mindspeed. At the same time, the company was

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running several enterprise applications that employees in these remote locations needed to access, including SAP NetWeaver, Oracle PLM, Lotus Notes and a custom application called the Code Verification Suite (CVS).

However, slow performance of these applications over the WAN was limiting employees' abilities to collaborate.

"Essentially, employees in our remote locations didn't use the applications at headquarters because they were too slow," said Mindspeed's CIO. "It took 60 seconds for

these remote users to open a file from headquarters, so instead they would e-mail each other files, which would get out of sync." Because employees were keeping local copies of information, the company also needed to deploy local backup infrastructure, which was costly to manage.

Another challenge was bandwidth utilization and costs for Mindspeed's global offices. "The most problematic sites were those that were almost completely full on bandwidth," said the CIO of Mindspeed. "To solve this, we could either add bandwidth to those locations or we could find ways to reduce the traffic between the sites. For example, we were paying a per month fee for one of our 20 remote sites, a link to Shenzhen in China, which rapidly became completely full, leaving us with the option to pay an additional per month fee or find a way to reduce traffic over the WAN.

The option of adding bandwidth quickly became very expensive."

**"Riverbed has been fantastic for us. It's had a great ROI, generated a great user experience and increased the credibility of our IT department."**

### Solution: Steelhead Appliances Installed in 16 Locations

To address these issues, Mindspeed evaluated several WAN optimization solutions. The key criteria were that it needed to speed application performance, to reduce bandwidth utilization, and to be easy to deploy.

"We looked at a few technologies out there, but many seemed to be inflexible and not fully developed," said Mindspeed's CIO. "With Riverbed, we were able to do a trial with two sites very quickly. When the trial period was over, our engineering team was adamant that we make the solution permanent, so we agreed to keep it."

**"We set up the appliances in a couple of hours. It was very easy and painless."**

Mindspeed deployed 16 Steelhead appliances, including one 3010 model at headquarters, several 1020's at heavy engineering locations and a few 100's in smaller offices. The company also deployed the CMC 8000 Central Management Console.

The installation of the Steelhead appliances went smoothly. "It couldn't have been better," said the CIO of Mindspeed. "We set up the appliances in a couple of hours. It was very easy and painless."

### Benefits: ROI in Fewer than 12 Months and Improved Employee Collaboration

Employees immediately noticed an improvement once the Steelhead appliances were installed. The Steelhead appliances reduced data travelling across the WAN by 76% overall, providing a bandwidth capacity increase of 4.3x. Specifically, Mindspeed achieved the following data reductions: 79% for SQL, 75% for CIFS, 70% for Lotus Notes, 36% for HTTP and 85% for CVS. Key applications were significantly faster: the response time for the Oracle PLM system was up to nine times faster, while SAP Netweaver was approximately three times faster.

These results enabled Mindspeed to save an estimated \$100,000 - \$200,000 a year on bandwidth upgrades, generating a payback period of under 12 months on bandwidth savings alone. The improved performance also enabled Mindspeed to consolidate its IT infrastructure. "We're looking to remove Lotus Notes servers in the regions and bring them back to headquarters because the performance is consistent across the WAN now," said the CIO. "We're also planning to remove backup machines in remote locations and consolidate them in headquarters to do backup across the WAN."

Steelhead appliances also changed the way employees work at Mindspeed. Overseas employees began using the CVS, which they hadn't been using before because it was too slow. Engineering teams began to collaborate on files in real time, rather than working independently. "Essentially, employees began changing the way they work because of the increased capabilities of the WAN," said the CIO. Due to the improved performance of SAP NetWeaver, executives and remote employees also had easier access to key information contained in SAP Business Warehouse.

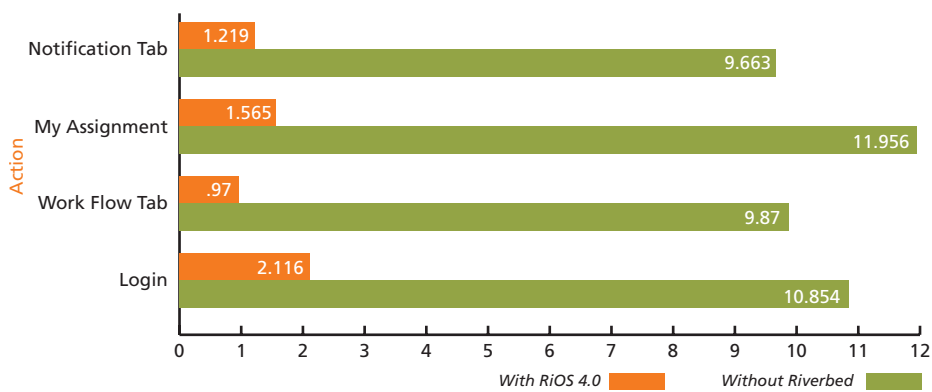
Employees in remote locations were also happier. "Before we put in the Steelhead appliances, remote users felt like systems were slow and unworkable," said Mindspeed's CIO. "After the Steelhead appliances were installed, they had the same experience that we have on the LAN at headquarters."

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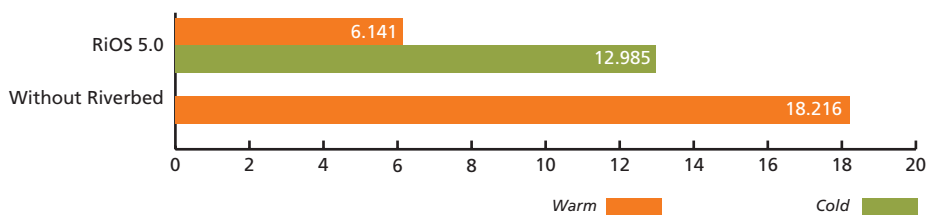
The reduction in bandwidth utilization also allowed Mindspeed to deploy new applications. Because sales, marketing and executive teams around the world could now work with the same data, the company was able to implement new SAP NetWeaver integrated forecasting and planning tools. "We were reluctant to implement the forecasting tools prior to installing the Steelhead appliances because we believed that the application would be too slow," said the CIO, "but once we had the appliances in place, we were no longer concerned with it."

Mindspeed summed up its experience with Riverbed Steelhead appliances: "Riverbed has been fantastic for us. It's had a great ROI, generated a great user experience and increased the credibility of our IT department." In the future, Mindspeed plans implement more Steelhead appliances and Steelhead Mobile software.

#### Oracle PLM Test Results - Time to Complete (in seconds)



#### SAP Netweaver Responsiveness - Time to Complete (in seconds)



### SUMMARY

The increasingly global workforce at Mindspeed Technologies, Inc. was having difficulty accessing key applications over the WAN, which was limiting productivity and collaboration.

After evaluating competing products, Mindspeed chose the Riverbed solution to improve application performance over the WAN and reduce bandwidth costs.

With Steelhead appliances, Mindspeed accelerated application performance over the WAN, while avoiding significant bandwidth upgrades and improving productivity and collaboration for remote employees.



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About Riverbed

Riverbed Technology is the IT infrastructure performance company. The Riverbed family of wide area network (WAN) optimization solutions liberates businesses from common IT constraints by increasing application performance, enabling consolidation, and providing enterprise-wide network and application visibility – all while eliminating the need to increase bandwidth, storage or servers. Thousands of companies with distributed operations use Riverbed to make their IT infrastructure faster, less expensive and more responsive. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com



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