

Government Agency Accelerates and Optimizes WAN for Speedy Application Delivery to Field Offices

Mine Safety and Health Administration centralizes and accelerates critical applications while lowers bandwidth expenses with Cisco WAAS.

EXECUTIVE SUMMARY
<p>MINE SAFETY AND HEALTH ADMINISTRATION</p> <ul style="list-style-type: none"> • Industry: Government • Location: Arlington, VA • Number of Employees: 2,300
<p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Limited bandwidth at field offices • Sluggish performance over WAN • High cost of operating servers in field offices to enable LAN-like performance
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • Optimize WAN to accelerate application delivery while minimizing bandwidth expenses and centralizing IT
<p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • Consolidated IT at the local office level while reducing bandwidth expenses • Response time reduced by up to 96 percent for critical applications accessed over the WAN. • Highly available network infrastructure that gives remote users a LAN-like performance

Business Challenge

The Mine Safety and Health Administration (MSHA), a division of the Department of Labor (DOL), oversees more than 14,000 mines in the United States with a staff of 2,300, and is tasked with helping mine investigators and mine rescuers efficiently perform their duties. The organization has 17 district and main offices, and 79 field offices. Every mine has detailed inspection records that must be constantly and accurately updated, work done in part with the input of about 1,300 inspectors who file quarterly or bi-annual inspection reports on each mine.

MSHA's main data center is located in Arlington, VA with two other data centers located in Denver, CO and Beckley, West Virginia. The field offices utilize Microsoft Office suite for both open-cut and underground mines. MSHA also utilizes Solar Winds, a WAN monitoring application for managing networks, and a homegrown system called MSHA

Standardized Information System (MSIS) that runs on Oracle and Sun Solaris used to track thousands of inspections, investigations and violations.

“Our investment in Cisco WAAS improves the performance of our network while saving the time of our field inspectors who now have more time to do their main jobs monitoring the mines. The fact that Cisco could help us build a new infrastructure with limited bandwidth and greatly improve speed and productivity was impressive.”

—George Fesak, Director of program Evaluation and Information Resources, United States Department of Labor

MSHA performs a significant amount of data collection and mining, and needs to enable field employees to monitor mines and respond quickly in the event of an accident. Recent mine disasters triggered MSHA to take a closer look at their aging IT infrastructure. According to George Fesak, director of program evaluation and information resources, the sluggish WAN hampered data access from remote locations, creating lag times as employees in field offices sent jobs to printers or accessed documents on shared drives over the Wide Area Network (WAN).

“The biggest issue for us was the overall sluggish performance over the WAN,” says Fesak. “Receiving complaints from users about the length of time it would take to open up documents, even small 100K Word files, was becoming a regular occurrence. Printing was performed at the local level but because files were centralized, the performance was horrible and it would sometimes take up to 20 minutes for standard print jobs to complete, and at times computers would simply freeze, forcing the user to re-boot. We realized we needed a solution to keep up with the advanced applications we were using.”

Fesak and his team quickly came to the conclusion that MSHA needed to upgrade their WAN to address the performance issue and upgrade their storage infrastructure.

Network Solution

PEIR began evaluating a short list of vendors who provided application bandwidth performance, as well as storage solutions. They identified vendor partners, Cisco and EMC, and began a test pilot with the combined solution with the bottom line goal of improving network and application performance at field offices. Fesak and the team decided to run a test pilot for Cisco Wide Area Application Services (WAAS) software for use in 2800 and 3800 series Integrated Service Routers (ISRs) in Morgantown and Bridgeport, West Virginia.

“We immediately saw a vastly improved performance and were impressed with Cisco WAAS for its ability to accelerate applications through advanced protocol optimizations such as read ahead, prediction and suppression,” says Fesak. “Cisco WAAS also utilizes sophisticated caching techniques that minimize latency and unnecessary data crossing with the WAN that the team was especially pleased with. We were sold at that point and decided to move forward with a full WAAS deployment.”

Syed Hafeez Deputy Director of PEIR added “Investing in IT was only part of the answer in speeding services to users nationwide. MSHA IT also had to be creative in how to overcome deployment hurdles.”

MSHA deployed 99 Cisco WAAS network modules for their primary data center, as well as main, district and field offices. Hafeez says Cisco WAAS has helped him and his team to address MSHA IT goals of improving WAN performance while consolidating IT at the district and main office level and avoiding the cost of increasing bandwidth.

“WAAS provides us with optimal performance for applications delivered from our data centers to the local offices,” says Fesak. “We were able to centralize key functions and manage them in a much more efficient way.”

According to Fesak, the high availability of the infrastructure that Cisco WAAS has enabled in the remote field offices has significantly lowered response time, making it appear that the remote offices have local servers and local storage. Cisco WAAS is an ideal choice for work environments that extended great distances. With MSHA having 79 field offices alone, it is vital that they are able to provide network that makes the field offices feel as if they are on a LAN. Cisco WAAS allows IT

departments to centralize applications and storage in the data center while maintaining LAN-like application performance, and provides locally hosted IT services while reducing the branch-office device footprint.

“We saw a decrease of up to 96 percent in response time,” says Fesak. “The performance of our ITS system and Microsoft applications that we use daily had greatly improved.”

According to Fesak, the users in the local offices noticed the significant improvements especially the response time.

“Within a few weeks of beginning the test pilot, I began receiving calls from the Bridgeport office asking what we were doing in IT,” says Fesak. “Most of the comments were focused on how quickly files were coming up and one person even commented that the performance seemed like they were working directly from a hard drive. What cinched it for us were users telling us to move forward with the implementation after the evaluation, joking that they would take us to upper management if we tried to take away the WAAS.”

Fesak says Cisco WAAS was easy to install and employees in the local offices were able to install the devices with minimal support from the IT team.

“We were all amazed at how simple it was to install the WAAS devices,” Says Fesak. “Most of the installations at the local offices were performed by those in the offices with minimal support from the IT group. My team and I configured the devices and shipped them out to the offices. The local recipients were able to plug them in and with a little phone support from the team, they were up and running.”

Business Results

According to Fesak, the sharp reduction in retrieval times on shared drives utilized by the local offices was one of the major results from upgrading to WAAS. Bandwidth and the cost of managing it is not cheap,” says Hafeez. “Our investment in Cisco WAAS improves the performance of our network while saving the time of our field inspectors who now have more time to do their main jobs of monitoring the mines. The fact that Cisco could help us build a new infrastructure with limited bandwidth and greatly improve speed and productivity was impressive.”

Centralized applications, consolidating servers and storage into MSHA’s three data centers, while offering LAN-like performance for users at the field office level are the biggest results from the upgrade, according to Fesak.

“Increasing the efficiency of field employees who are oftentimes dealing with life and death information is at the heart of what we are trying to achieve,” says Fesak. “Cisco helped take a system that was almost unusable and transformed it into a highly available network infrastructure that made users feel like they were working off their hard drive.”

Hafeez added that, “We are fortunate to have had the funding approved. It is critical to have management that is able to see the need and the benefits for these types of investments.”

One of the intangible benefits Fesak and the team have experienced since the upgrade is fewer complaint calls from the local offices.

“Our IT hotline is definitely not receiving the same level of complaint calls that we used to receive since we rolled out WAAS,” says Fesak. “Now the calls we’re receiving from the local offices are the occasional call to ask what we did that sped up the WAN. Common feedback we’ve received

includes how much faster the WAN is and how quickly documents open up without being held in limbo on the network.”

Next Steps

As Fesak and his team look into the future of the MSHA IT infrastructure, they are exploring the idea of configuring Cisco WAAS to expand functionality to stretch their IT dollars.

“We implemented WAAS as print servers in several field offices and eliminated the NAS devices.” says Hafeez. “As some of our solutions approach end of life, we are looking into ways we can maximize our Cisco investment while addressing critical functions in our data center. Cisco WAAS is an ideal vehicle to help us maximize our current and future investment while being fiscally responsible.”

PRODUCT LIST

Cisco Application Networking Services:

- Cisco Wide Area Application Services (WAAS)
- Cisco 2800 Series Integrated Service Routers
- Cisco 3800 Series Integrated Service Routers

For More Information

To find out more about Cisco WAAS, please visit <http://www.cisco.com/go/waas>.



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