



Large Engineering, Procurement, and Construction Management Firm Deploys VMware Horizon View for Secure and Reliable 3D Model Global Collaboration

INDUSTRY

Engineering, procurement, and construction management (EPCM)

REGION:

Americas, Asia Pacific

SIZE

Revenue USD \$188 million; 1,200 employees; 29 offices in seven countries

ABOUT THE BUSINESS

Founded in 1948, SSOE's mission is to make clients successful by delivering the highest-value engineering, architectural, and project delivery services, saving clients time, trouble, and money

PRODUCT

- VMware® Horizon View™
- VMware vSphere®

Snapshot

Collaboration with talent around the world is one of SSOE Group's central business models. Horizon View enables employees and authorized contractors—from Toledo and Tennessee to Mumbai, Shanghai, and Singapore—to securely work together on graphically intense, centralized designs and 3D models. The solution brings everyone together virtually, increasing efficiency while protecting client and SSOE intellectual property.

Business Challenges

- Increase collaboration with remote experts while reducing IT management costs
- Meet client and SSOE security requirements for protecting intellectual property
- Increase efficiency by improving 3D graphics performance

Solution

Horizon View virtual desktops are deployed to support global design and 3D model collaboration with engineering, procurement, and construction management (EPCM) talent around the world.

Benefits

- Enables SSOE to leverage the best talent to complete projects for clients—no matter where experts are located
- Increases security of intellectual property
- Delivers a rich, end-user 3D graphics experience
- Centralizes management of desktops

Use Cases

- Remote office access with global collaboration
- Hosted, high-performance computing and 3D graphics

“I absolutely recommend VMware Horizon View to any company that’s using graphically-intensive applications in particular. But even beyond that. If you’ve got a workforce and you’re trying to centralize your computing infrastructure to save money, to increase security, to improve flexibility and the mobile worker’s experience, then I think you absolutely need to be looking at Horizon View.”

Bill Case
Director of Computer Information Systems
SSOE

Situation

SSOE has always been on the technology cutting edge. In the 1960s, it was the first architectural and engineering firm in the Midwest to use in-house computers as part of its design process. Today, SSOE continues to push the envelope in the integration of advanced technologies into the design and construction process.

One of SSOE’s central business models is to leverage a global talent base to deliver the best solution to clients. “We use global collaboration with talent all around the world,” explains Bill Case, director of computer information systems at SSOE. “Whether a person is in Mumbai, India; Shanghai, China; Toledo, Ohio; or Brentwood, Tennessee, it doesn’t matter. If he or she can contribute the best solution to our client and to the project, we want that person on the project.”

Yet supporting collaboration among employees, contractors, and third parties globally—working on centralized design and 3D models—created a real technology challenge for SSOE. End users required reliable and fast access to critical design and engineering applications such as Autodesk Revit, Autodesk AutoCAD, the Autodesk design suite, Bentley Design Suite, and SolidWorks 3D CAD design software.

The firm needed to support big, complex models that were part of projects that could have 70 or 80 models connected together, and the end-user model viewing and manipulating experience had to have responsive performance.

“In an ideal world, you’d get the entire team in the same room,” explains Case. “Because models are very graphically intensive with a lot of data, we had to find a solution that would bring everyone together virtually, if not physically.”

The solution also had to be secure because SSOE and its clients have very stringent requirements for protecting intellectual property. “We have to make sure we know where the data is, who can access it, and what’s happening to it,” Case says.

Before moving to the virtualized environment, SSOE tried other types of solutions, including remote desktops. “That 3D experience for the user was very agonizing,” explains Mark LaBell, Jr., technology leader at SSOE. “It was very slow, very nonresponsive. Users sometimes would have to wait 10–20 seconds, even a minute, just for the screen to refresh, and it was not a very good user experience prior to virtualization technologies.”

SSOE senior systems administrator Brian Seibenick agrees. “We found using other solutions didn’t give us the frame rates needed to give the end users a cohesive and good end-user experience.”

Case adds, “You’ve got to have responsiveness, so that when a designer needs to zoom in on something or rotate something or move around different areas, you can’t have huge delays or lag on the screen. It’s frustrating for them, it’s inefficient, and it leads to all kinds of problems.”

Restricting access while still enhancing end-user productivity was a key consideration when SSOE began investigating desktop virtualization in 2011. SSOE had been successful with vSphere on the server side since 2008, which made Horizon View a natural choice.

“The biggest feedback that we’ve gotten from our users about 3D has been just the smoothness and ease of working with the models. Prior to VDI, when a user would take and try to spin a model, the lag and frame rate wasn’t there to make it a good experience. Now, it acts more like a real-time spin of that model.”

Brian Seibenick
Senior Systems Administrator
SSOE

Solution

As soon as SSOE began using Horizon View, it noticed near-native performance from the applications most critical to end users. “The file speeds were very good. The 3D rendering on the desktop appeared almost as good as desktops, if not as good,” recalls technology lead LaBell.

Horizon View is a complete virtual desktop infrastructure (VDI) solution that simplifies desktop management and provides remote users with what they need, when they need it.

Now SSOE is able to deploy a golden image of a virtual desktop to users in multiple locations. “This has solved the issue of having large models where we need users in multiple geographic locations to work on these models collaboratively, but the models are too large to either go across our LAN or to have users come across the WAN,” explains Seibenick.

Horizon View supports three primary user groups at SSOE: people located in different offices who are helping to work on projects in other offices; telecommuters; and mobile users such as construction managers using iPads to view real-time collaborative models in the field that are being generated back at the office in the data center.

With Horizon View, SSOE not only supports remote users in offices and at home; Horizon View also helps SSOE support work that shifts. The firm can deliver a consistent project experience, for example, to an architect located on the West Coast working with an architect on the East Coast today, then tomorrow add an expert from China to the project.

In the field, LaBell says, Horizon View helps eliminate the need for file transfers that use an FTP site and cloud storage, while enhancing security. “We’re able to keep our clients’ information in our data center here at SSOE, and it’s just passing that off to the device in the field.” Before the VMware solution, end users could not view a 3D model in real time on a laptop or a mobile device while they were onsite.”

SSOE has also been able to use Horizon View to resolve issues in the field, particularly involving partially constructed buildings. “Our construction managers no longer have to carry 2D plans that aren’t updated daily or weekly. They can get real-time information back from our design team in the office because the files are hosted in our data center. It’s a much richer collaborative environment,” adds LaBell.

Using Horizon View for desktop virtualization keeps SSOE data centralized. “We bring in users and all they’re seeing is that screen and they’re getting very thin data over the wire. It never leaves our data center,” Case says. “Even within those configurations, we can see who can get to which machines from different configurations. What data they can get to, and under what circumstances. Can they print? Can they send files? Do they have access to the Internet? All of this information is available to us.”

SSOE deployed Horizon View on graphics processing unit (GPU)-enabled Cisco servers with NVIDIA GRID graphics cards. The software runs on nonpersistent endpoints including Dell and Lenovo workstations and laptops, Apple iPad tablets, and zero-clients from Dell Wyse.

This infrastructure is enhanced by antivirus software from Microsoft and two-factor authentication using RSA Authentication Manager with SecureID tokens. End-user collaboration is further enabled by Deltek Vision ERP, Microsoft Lync for enterprise instant messaging, and Cisco for unified communications.

“VMware Horizon View enables us to keep data centralized and have extremely granular control to match the security requirements for the project with the client.”

Bill Case
Director of Computer Information Systems
SSOE

Benefits

SSOE can leverage all of the architectural, engineering, and construction expertise in the world without compromising the security of SSOE or client intellectual property. Horizon View gives SSOE the ability to let all design and construction partners safely access the design environment to do their work, look at the data they need, and solve a particular challenge, which is a tremendous benefit to clients.

“One of the major things that has changed with desktop virtualization is that the operations team can work together in some ways they couldn’t before,” says Case. “When you had this expert on the West Coast and the rest of the team on the East Coast, the colleague in the West wasn’t going to be part of the team because it wasn’t technically feasible. Now that person can participate. This translates into the client getting a better solution. It translates into SSOE being more efficient, and sharing more knowledge.”

Because Horizon View delivers high-performance 3D graphics, SSOE designers, engineers, and architects can focus on their models, on their clients, on the outcomes, on solving problems, and on saving time, trouble, and money for clients.

As the one ultimately responsible for IT at SSOE, Case believes that “users can come into this environment and have a high level of performance. They can work just like any other designer on the team, any other engineer or architect. We get all the benefit because we keep their focus on the project, on the client, on the solution. IT should be transparent to them. That’s the solution that we found.”

Case recommends the Cisco, NVIDIA, and Horizon View solution to other companies using graphically-intensive applications. “It’s the best of all possible worlds. With Cisco you’re getting the hardware, reliability, performance, and price point. With NVIDIA, the graphics acceleration is simply unmatched in a solution like this. And obviously, VMware Horizon View is producing the capability for me to get a global workforce collaborating in one location, using disparate people from anywhere. Highly secure, cost effective, and very flexible. I’d tell anybody to try it,” he concludes.

About VMware Horizon Suite

VMware® Horizon™ Suite, the platform for workforce mobility, connects end users to their data and applications on any device without compromising IT security and control. The suite includes the following products:

VMware Horizon View

Simplify desktop management, security, and control while delivering an optimum end-user computing experience across all devices and networks.

VMware® Horizon Mirage™

Gain centralized, zero-touch physical and virtual desktop image management with native performance and flexibility for end users.

VMware® Horizon Workspace™

Streamline the end-user experience and reduce costs with a single workspace for applications and data, delivered securely on any device.

VMware® vCenter™ Operations Manager for Horizon View™

Monitor and optimize the health, performance, and efficiency of your entire VDI.

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