ODOT DEPLOYS SECURE VIRTUAL DESKTOP INFRASTRUCTURE TO FAST-TRACK ROAD MAINTENANCE AND REPAIR

Ohio Department of TRANSPORTATION

INDUSTRY
STATE AND LOCAL GOVERNMENT

LOCATION
COLUMBUS, OHIO

KEY CHALLENGES

- Provide external construction contractors rapid and remote access to agency information systems.
- Speed up contractor processes to avoid delays in transportation projects, such as from unplanned repairs.
- Help small IT team securely and efficiently manage thousands of devices for internal and external users.

SOLUTION
ODOT integrated the VMware NSX network virtualization platform and the VMware Horizon virtual desktop platform to create a VDI that supports multitenancy, automated provisioning, and secure data access for 4,500 concurrent external contractors.

BUSINESS BENEFITS

- Reduced contractor onboarding and modification processes from weeks to days or hours
- Strengthened security between virtual desktops to create micro-segmentation, eliminating unwanted traffic
- Saved on IT support, with a planned reduction in mail and VPN costs
- Enabled opportunities for partnerships with other agencies

Ohio Department of Transportation (ODOT) deployed a virtual desktop infrastructure (VDI) featuring VMware NSX® network virtualization and VMware Horizon®, which allows external contractors to securely access the agency's internal business systems. Using VMware Professional Services to design and implement the solution, ODOT reduced the wait time for new workers to gain system access and now can more efficiently manage thousands of devices. ODOT expects the solution to reduce operational costs and create new opportunities for partnerships with other agencies.

ODOT, an administrative department of the Ohio state government, develops and maintains nearly all state and federal highways and roads in Ohio. The organization's mission is to provide safe transportation to citizens of the Buckeye state. Some 5,000 employees build and maintain highways and roadways, remove snow, and ensure the structural integrity of bridges.

The Challenge

Despite dwindling resources and shrinking budgets, public sector organizations must provide high-quality, on-time services to constituents, while meeting government mandates to automate processes and increase operational transparency.

Responsible for more than 49,000 miles of highways and roadways, ODOT managed 1,500 construction and repair projects in 2015, with a cost of nearly $3 billion. To staff these projects, ODOT's construction management division hires numerous contractors and vendors each year. Many of these personnel are not employees, yet they need access to ODOT's internal business systems.

Registering non-ODOT personnel and creating and modifying project documents in the construction management application, called AASHTOWare Project SiteManager™, often took as long as 30 to 45 days. In the meantime, contractors waited, delaying progress on essential transportation projects. The agency wanted to streamline and automate the onboarding and payment processes for new workers. ODOT also needed to create a secure way for nonagency workers to access AASHTOWare Project SiteManager™ without compromising system security.

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KEVIN HARTMAN
MANAGER OF ENDPOINT COMPUTING
OHIO DEPARTMENT OF TRANSPORTATION

VMWARE FOOTPRINT
- VMware Professional Services
- VMware Technical Account Manager (TAM)
- VMware Horizon Enterprise and Advanced Editions
- VMware NSX

APPLICATIONS VIRTUALIZED
- AASHTOWare Project SiteManager construction management software

With the help of VMware Professional Services, ODOT's endpoint computing team evaluated several different technology solutions. Partnering with internal network and security groups, the team saw it could augment its VMware Horizon VDI with policy-based user access supported by VMware NSX network virtualization. "IT teams are often siloed, but we engaged quickly with our network and security teams to understand requirements and create a solution," says Charles Ash, deputy chief information officer, infrastructure of ODOT. "This project would not have been successful without our early partnership."

The Solution

ODOT had experience using the VMware Horizon solution to deliver virtual desktops and applications. When VMware introduced the NSX network virtualization platform, the agency realized that the two solutions could be integrated to create a VDI that supports both security and automation for ease of use and increased efficiency.

The ODOT team worked with VMware Professional Services to engineer a solution that included 40 hosts, 4,000 desktops, licenses for 4,500 concurrent external users of VMware Horizon Advanced Edition, licenses for 600 concurrent internal users of VMware Horizon Enterprise Edition, and 58 CPUs for the VMware NSX for vSphere® solution.

Together, the VMware Horizon solution and NSX virtualization provide authorized contractors with secure remote access to the ODOT system, even for contractors using their own devices. The NSX platform directs traffic throughout the agency IT systems, segmenting external contractors to AASHTOWare Project SiteManager and protecting the security of other computing systems and networks. Global groups or the Active Directory define access rights.

Contractors can now access internal systems as early as the day after submitting a request. External users can use the system to electronically approve construction modifications, request payment for services, and send contracts for signature.

"Finding a secure user solution that could be implemented at a reasonable cost, and to the satisfaction of our security team, was a tremendous accomplishment," says Kevin Hartman, manager of endpoint computing at ODOT. "VMware Professional Services guided the implementation of VMware NSX and Horizon, allowing our team to deploy networking in a whole new way."

Business Benefits

The new solution helped ODOT save time for contractors and improve processing efficiency. The agency saw additional value in ensuring security between desktops using NSX virtualization to create segmentation, eliminating unwanted traffic among virtual desktops and between adjacent critical workloads. ODOT automated work processes, significantly reducing the time for contract modifications, approvals, and change requests from four to six weeks to just days or hours.

Automated provisioning and services through the VMware Horizon solution helps ODOT manage more technology resources with limited finances. "Unlike updating physical workstations, we can modify a single image and that will update every virtual workstation," says Wally Renner, a member of the endpoint computing team. "Our four-person team can efficiently manage more than 15,000 devices."

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The micro-segmentation capabilities of the NSX solution nearly eliminate the need for ODOT's existing virtual private network (VPN), which it will retire over the next few years. This change will decrease spend and reduce operational costs. The agency also expects to realize savings from a reduction in paper mailings to contractors.

The VDI solution also creates opportunities for additional partnerships with other government agencies and constituents. "We can use the technology to make other internal ODOT applications available to our partners in the same manner as AASHTOWare Project SiteManager™," says Shawn Stritz of the endpoint computing team. "We've offered assistance to other state agencies that want to consolidate their virtual workstation environments."

As business users learn about these benefits, the demand for micro-segmentation and multitenancy in other applications—and ODOT's statewide reputation as a technology leader—grows. "With AASHTOWare Project SiteManager as a catalyst, other agencies are bringing us new projects and asking if we can do the same thing for their applications," says Hartman.

Looking Ahead

During the first phase of this new deployment, the agency successfully granted contractors access to the system and met its project goals. In the next phase, ODOT plans to expand access to another 1,000 external users. By expanding the use of the VDI to new users and applications, ODOT will put itself on the fast track toward meeting its business goals, by effectively maintaining and repairing Ohio's roads while keeping drivers safe.

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