



DEPLOYMENT AND MANAGEMENT OF REMOTE SITES IN 7 DAYS OR LESS



INDUSTRY CONSTRUCTION

HEADQUARTERS COLORADO SPRINGS, COLORADO

CHALLENGES

- Expensive and spotty, low-bandwidth MPLS circuits not meeting demand
- Remote project sites needed to be setup rapidly, often within seven days or less
- Shift to cloud applications, VoIP and video collaboration required increasing amounts of bandwidth and QoS
- No central visibility and management within a “single pane of glass”

RESULTS

- Savings of \$75,000 in annual data and voice circuit costs
- Optimized best-case transport at locations with little to no connectivity options
- Streamlined remote location deployment and reduced lead time requirements
- Optimized the exchange of large files to any location within the network or cloud

With a small team and often only a week to get a project site online, GE Johnson turned to VMware SD-WAN™ by VeloCloud® for quick deployments and secure connectivity.

Problem Situation

GE Johnson Construction Company is a large, general contractor based in Colorado. Its network consists of ten office locations, two equipment facilities and 40 project sites, located in multiple states including: Arizona, California, Colorado, Kansas, Montana, Nevada, New Mexico, Oklahoma, Texas and Wyoming.

GE Johnson supports its numerous projects from central offices, but requires on-site construction management for each of its projects. GE Johnson’s IT team must deploy internet connectivity and connection back to corporate offices from each project site in order to deliver data, voice and video collaboration services. The legacy network consisted of a mix of MPLS connecting all the corporate offices, and a reliance on Internet circuits at remote project sites. The enterprise ERP system is vendor hosted, residing in a data center located in Atlanta.

After the initiation of a new project, the IT team had very little time to provide construction sites with connectivity. There are limited connection options available at each remote location. Additionally, GE Johnson was using a legacy, digital PBX phone system. To better connect its entire company and provide enhanced communications it decided to move to a hosted VoIP system. The shift to VoIP and video collaboration put additional stress on the existing infrastructure and required QoS and more bandwidth than currently available.

The legacy network infrastructure posed significant obstacles in delivering network connectivity to the remote sites quickly, efficiently, and with enough bandwidth to support all services required. GE Johnson’s IT team was spending much of their time traveling to each job location for site assessment and to install a varying mix of equipment to provide connectivity. It also had limited visibility of its MPLS network and was unable to view or manage traffic at any of the remote locations. It decided to make a transition away from its legacy infrastructure to better support its business requirements and remote office and project site deployment needs.

“With VMware SD-WAN we were able to utilize a plug-and-play model that significantly simplifies the deployment of our remote project sites.”

TODD DUGHMAN
ITS DIRECTOR, GE JOHNSON

“The ability to leverage any transport option available at project sites and gain visibility into those remote locations using VMware SD-WAN is a game changer for us.”

TODD DUGHMAN
ITS DIRECTOR, GE JOHNSON

In searching for a substitute, GE Johnson established specific criteria for a new solution:

- Central management of its entire network from central offices to each remote site
- Pre-configured equipment at central offices prior to deployment at remote sites
- Utilization of any available connectivity option at remote sites
- Increased bandwidth and redundancy across the network

Solution Selection and Implementation: VMware SD-WAN

GE Johnson selected VMware SD-WAN to transform its network infrastructure. Rather than use a channel partner, GE Johnson opted to deploy the solution and manage the entire process and network in-house. The deciding factor was the simplicity of the solution and the ease of deployment that it offered.

GE Johnson was immediately able to leverage the entire VMware SD-WAN solution, including the VMware SD-WAN Gateways and VMware SD-WAN Edges at each endpoint. Additionally, it began utilizing the VMware SD-WAN Orchestrator for a single pane of glass view, of the entire network.

To deploy the entire solution with a small IT staff, GE Johnson decided on a phased migration away from its existing MPLS infrastructure to SD-WAN. Because many MPLS circuits were still under contract, they ultimately were converted to internet only and then, connected to SD-WAN. Today, corporate offices use a mix of multiple circuits such as fiber, DSL, cable and microwave. This strategy enables redundancy, and creates carrier and path diversity.

Fully Functional Site in Less than Seven Days

When GE Johnson's IT team received directions to provision a new project site it would need to act quickly, because the requested go live was often seven days or less. With the legacy infrastructure, it was very difficult because there was often little information available concerning possible connectivity options in the remote locations. In addition, there were factors outside the teams' control that would affect deployment times including the lead-time for a carrier to deliver a circuit to the site.

Using VMware SD-WAN, GE Johnson was able to provision remote construction sites very quickly. After placing an order with a carrier to install a circuit at a project site trailer it could spin up a 4G LTE instance at the site that would be connected directly to a pre-configured VMware SD-WAN Edge, enabling zero touch provisioning that would get the site up on the network and visible within minutes. Once available, the dedicated circuit plugged into the VMware SD-WAN Edge, with the 4G LTE instance reconfigured as a backup link. Other options at job sites included a mix of wireless, microwave, DSL, cable and satellite. This allows GE Johnson to take advantage of best-cost and best performance options.

Centralized Visibility and Management

The VMware SD-WAN Orchestrator provides GE Johnson's IT team visibility across the entire network from its central offices to each project site and subsidiary. For the first time, it can see each location and its network status, route traffic appropriately, identify issues and remediate them before they become significant issues, and allow for remote turn-up of project sites.

Use Best-Case Available Transport

Given that available connections were not always known or could be planned significantly in advance due to short deployment lead time, GE Johnson is now able to leverage VMware SD-WAN to optimize whatever transport mechanism is available. For instance, GE Johnson is able to procure multiple circuits and bond them, eliminating the need for dependence on a single circuit, increasing network availability and uptime. While GE Johnson primarily relies on broadband and 4G links for project locations, it has also been able to leverage satellite as a transport link, managed through VMware SD-WAN.

Optimized Traffic for Large File Delivery

GE Johnson offers full construction services that include not only physical construction, but also the design and implementation of architectural and building infrastructure using Building Information Modeling (BIM). The digitally rendered plans result in very large files, sent to various internal and external resources. The amount of bandwidth required to send these large files is significant and with VMware SD-WAN, GE Johnson no longer runs into the bandwidth limitations that MPLS imposed.

Leveraging Cloud Services

As is the case with evolving organizations today, GE Johnson began leveraging cloud-based services across the organization to simplify administration and facilitate corporate-wide communications. This included an implementation of Office365 (O365), VoIP, Skype for Business and Lifesize video collaboration solutions. Leveraging VMware SD-WAN, GE Johnson enabled its employees to collaborate using video and Web conferencing with increased bandwidth and Dynamic Multipath Optimization (DMPO) that allowed for high-value traffic (such as video and VoIP), to be prioritized above others.

Network Cost Savings

VMware SD-WAN has created significant cost savings for GE Johnson. With the elimination of MPLS, two voice PRIs and a move to a hosted VoIP PBX solution, GE Johnson has been able to save \$75,000 annually. This cost saving is an aggregate of the SD-WAN software-as-a-service (SaaS) delivery, an increase in the number of low-cost circuits that SD-WAN optimizes for redundancy and higher levels of bandwidth, and the new hosted VoIP phone system.