CASE STUDY | CITY OF WAUKESHA

ENHANCING SERVICES THROUGH BYOD POWERED BY NVIDIA GRID™

NVIDIA GRID plays a key role in helping the City of Waukesha enhance public services while lowering costs.

NVIDIA

By bringing full graphics performance to city employees in the office or field, NVIDIA GRID technology is helping the City of Waukesha offer improved public services.

AT A GLANCE

CUSTOMER PROFILE

Company: City of Waukesha

Industry: Municipal government

Location: Waukesha, Wisconsin

Size: 30 users (22 engineer, 8 power)

SUMMARY

- Municipal government with severely constrained budget
- Implemented NVIDIA GRID K1
- Significantly faster performance, happy users, and simplified management
- Expanding GRID to additional AutoCAD Civil 3D, Esri, and Adobe Creative Suite users

SOFTWARE

Hypervisor: Citrix XenServer

Desktop and Application Remoting: Citrix XenDesktop and XenApp

Key Applications: Autodesk AutoCAD Civil 3D 2013, Esri ArcGIS 10.2, Adobe Creative Suite CS5

HARDWARE

NVIDIA GRID Boards: K1

Servers: Two redundant Dell PowerEdge R720

Clients: Lenovo All-in-One workstations, plus various BYOD desktop and mobile devices.

The City of Waukesha, Wisconsin, and its 70,920 residents inhabit 25 square miles on either side of the Fox River, approximately 16 miles west of Milwaukee. Waukesha is known as the birthplace of legendary musician and guitar maker Les Paul.

As of 2014, the municipal IT department consists of eleven full-time employees who maintain over 300 applications and thousands of devices. This department also manages the municipal fiber network, VoIP phone support, and interconnectivity with various local, county, and state bodies.

CHALLENGE

In 2013, the IT department began replacing the city's aging inventory of 600 workstations. About 30 employees use Autodesk AutoCAD Civil 3D 2013 and/or Esri ArcGIS 10.2, which require high-end graphics performance.

The ongoing commoditization of IT services and mounting pressure to move toward full BYOD models posed another significant challenge. Users increasingly expected anytime, anywhere access on any device. Allowing city end users to install work applications on their personal devices meant having non-technical people managing their own installations and often causing inconsistencies between different devices. In Waukesha's case, having 600 individual workstations forced the IT department to support 600 different environments. Many AutoCAD and Esri users also installed plug-ins to satisfy their personal preferences, which compounded management woes.

"Budget constraints and the consumerization of IT services have been our largest challenges by far," explained Bret Mantey, IT Director for the City of Waukesha. "Balancing the productivity gains of allowing some users to bring their own devices against the need to maintain centralized command and control, all while ensuring a standardized and stable environment for everyone, seemed doomed to failure. NVIDIA GRID has now allowed us to start our 'ANY' initiative. That is, ANY-time access, ANY-where, with ANY-thing the end user wants to use."

REASONS FOR GRID

1. No other technology delivers full GPU power in a virtualized environment.
2. Help desk calls dropped by 80% and will continue going down as the deployment expands.
3. NVIDIA GRID K1 performs 50% faster than individual workstations.
4. Desktop, laptop, and mobile users can access full AutoCAD and Esri on their devices.
5. BYOD support empowers employees to improve productivity and improve city services.

NVIDIA GRID has now allowed us to start our 'Any' initiative. That is, ANY-time access, ANY-where, with ANY-thing the end user wants to use.

Bret Mantey
IT Director
City of Waukesha

SOLUTION

X-Centric Solutions is a local professional services organization that has provided Waukesha with IT support for over 10 years. Designing, deploying, and supporting Citrix technology implementations is one of their key areas of expertise. Waukesha turned to X-Centric for help replacing their higher-end PCs, and X-Centric suggested implementing NVIDIA GRID K1 technology as a viable alternative to individual high-end workstations.

"When NVIDIA announced GRID, we proactively reached out to the City of Waukesha to suggest a GRID implementation that would lower costs while improving service and simplifying management," said Justin Knash, Vice President of Professional Services at X-Centric. "The combination of performance, full BYOD support, data centralization, ease of management, and cost effectiveness versus traditional workstations made recommending NVIDIA GRID K1 a no-brainer."

"There is no other product on the market like NVIDIA GRID," agreed Greg Vanness, IT Infrastructure Manager for the City of Waukesha. "We already provide virtualized applications to our users, but that alone couldn't solve our high-end needs. We did our homework, talked with NVIDIA, and made the decision to purchase NVIDIA GRID K1 within two weeks. The implementation went without a hitch, and we are conducting user acceptance testing before expanding GRID to include other higher-end graphic users outside of our AutoCAD and GIS users."

The initial deployment used two redundant Dell PowerEdge R720 servers equipped with 32-core CPUs running at 2.6GHz, 192GB RAM, and two NVIDIA GRID K1 boards per server to support up to 32 users with failover protection. Citrix XenServer, XenDesktop, and XenApp provide the hypervisor and remote desktops. The first phase replaced 10 of the high-end workstations previously used by the Engineering department with a Virtual Desktop Infrastructure (VDI) powered by NVIDIA GRID K1.

Bringing the GRID down for maintenance or adjustments late at night or on weekends causes our phones to start lighting up. This reveals the true depth of the passion and dedication that our employees bring to serving the residents of Waukesha, because they are actively thinking about work and deciding to take actions that improve life for everyone during their off hours.

Greg Vanness
IT Infrastructure Manager
City of Waukesha

AutoCAD Civil 3D now runs 50% faster on low-cost workstations accessing the NVIDIA GRID K1 VDI deployment than it did on the individual workstations.

The Fire and Police departments will soon have the ability to take this technology into the field and compile an incident history containing GPS-tagged photographs uploaded to the GIS system from the scene. The Parks & Recreation department will soon be able to perform tasks, such as tree inventories and asset management, in the field using GIS over a tablet. These users will receive GRID-enabled virtual desktops after initial user acceptance testing concludes.

RESULTS

The results of implementing NVIDIA GRID K1 technology have been nothing short of phenomenal. Lenovo All-in-One PCs costing $700 each have replaced workstations costing four times as much while yielding 50% faster performance. Allowing users full VDI access from any personal device they choose to use will further reduce costs. Centralized management gives all users the same interface and experience, which has helped reduce help desk calls by 80%, a percentage that will grow as the NVIDIA GRID K1 deployment expands to cover Adobe® Creative Suite® and other users.

“This now allows IT as a whole to shift to a more proactive role within the organization. In the case of positions such as Help Desk, the transition has already begun. Virtualization has simplified all of our lives,” continued Mantey. “We’ve gone from 600 unique environments down to 12 well-managed ones. Implementing NVIDIA GRID K1 reduced 30-plus unique AutoCAD installations down to two that the IT department keeps consistent and standardized. Best of all, our users love it. Their natural reluctance to change vanished once they saw what GRID could do for them.”

“This now allows our field personnel the ability to access AutoCAD files and upload GPS-tagged photos and other information directly to Esri from the field. NVIDIA GRID is the technology of the future that is already delivering on its promises,” said Chris Pofahl, Project Manager for the initiative.

Full desktops with AutoCAD and Esri are already being deployed on low-cost tablets. This power and flexibility can extend to any smart device to deliver full workstation speed and functionality whenever and wherever needed. NVIDIA GRID K1 technology has empowered the IT department at the City of Waukesha to provide improved functionality to its

employees while remaining within tight budget constraints and operating with reduced staff and higher demands. Employees receiving this technology have responded back positively and now rely on the technology 24 hours per day, 7 days per week.

"Bringing the GRID down for maintenance or adjustments late at night or on weekends causes our phones to start lighting up," added Vanness. "This reveals the true depth of the passion and dedication that our employees bring to serving the residents of Waukesha, because they are actively thinking about work and deciding to take actions that improve life for everyone during their off hours."

"The bottom line is that NVIDIA GRID K1 delivered applications and services that would be impossible otherwise," agreed Pofahl.

"Thanks to our experience with the City of Waukesha, we will be making NVIDIA GRID technology a part of our offerings to our customers," concluded Nasir Khan, President & CEO, X-Centric.

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Chris Pofahl
IT Project Manager
City of Waukesha

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