

CASE STUDY | BLDD

ACCELERATING DESIGN WITH VIRTUAL WORKSPACES

Transitioning from a legacy VDI to NVIDIA GRID K2 improved collaboration and project quality while reducing costs for BLDD.



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AT A GLANCE

CUSTOMER PROFILE

Company: BLDD

Industry: AEC

Region: Midwestern USA

Size: 86 Employees

SUMMARY

BLDD is an AEC firm with 86 employees spread across five offices in the Midwest. They migrated their existing VDI to NVIDIA GRID K2 to offload graphics processing to the GPU and boost overall performance. Employee productivity has increased, and the firm has been able to reduce travel and IT costs compared to their previous solution while also delivering higher-quality projects to their clients.

SOFTWARE

Key applications: Dassault CATIA

Desktop & Application Remoting: Citrix XenDesktop, Parallels Desktop

Hypervisor: Citrix XenServer

HARDWARE

GRID boards: NVIDIA GRID with K3100M GPUs

Servers: HP Blade

Clients: Various desktop, mobile, and thin clients

Founded in 1929, architectural practice BLDD has grown from a two-person operation based in Decatur, Illinois to a staff of 86 people based in five offices across the upper Midwest. The firm has a strong focus on creating community and municipal spaces, including schools, colleges and medical facilities. Its design ethos is based around achieving a thorough understanding of its clients' needs and creating solutions that engage deeply with their users' everyday lives.

BLDD offers a complete range of services, from architectural and structural design to master planning, material selection and signage. Much of their business is in education (i.e. designing and retrofitting schools and colleges), and they also work on medical facilities, such as hospitals and clinics. The firm is very green-conscious and is heavily involved in retrofitting schools to make them more energy efficient.

CHALLENGE

BLDD was an early adopter of Autodesk Revit as its Building Information Modeling (BIM) tool to support planning and design decisions. Other 3D tools used by the firm include Autodesk Navisworks, Bentley RAM, Trimble SketchUp, and AutoCAD. Each of these applications places heavy demand on available GPU resources. The firm relies on a high degree of collaboration among the staff across all office locations; for example, a project manager may be based in one location while key contributors work from another location. Coordination between BLDD employees and third parties, such as contractors and specialists, is also critical.

"A typical project can have anywhere from two or three to as many as eight people assigned to it," said Dan Reynolds, Senior Systems Administrator at BLDD. "This requires constant data sharing to make sure that everyone is using the correct version. This plus the need to maintain security means that we store this data in our datacenter instead of having users check files in and out and then download them to a local client.

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SOLUTION

In response, BLDD set out to find a VDI solution that would deliver seamless access and collaboration to Revit users from any location with full interactivity for moving 3D objects, redrawing the screen, panning and zooming with instant response. The new VDI would have to be offload graphics work from the CPU to the GPU to keep other systems, such as the OS, running smoothly.

"We went to VMWorld 2013 to see if anybody could help us," Reynolds continued. "That just happened to be the first year that NVIDIA was at VMWorld, which was very fortuitous for us. From there, a lot of things just came together, and we were soon testing NVIDIA GRID K2 in earnest."

BLDD decided to implement Cisco servers because of their built-in support for NVIDIA GRID. They initially selected a single Cisco UCS C240M3 server hosting two NVIDIA GRID K2 cards but soon moved to two Cisco servers running a single NVIDIA GRID K2 card per server. The firm continued to use VMware ESXi 5.5 and Horizon View 5.2. This combination allows BLDD to either pool or dedicate GPU resources as needed to comfortably support 30+ users per server.

"Implementing NVIDIA GRID K2 gave our Revit users a much more responsive, interactive experience when using the application on their virtual desktops," said Reynolds. "The problem of lag in the operating



5 REASONS FOR GRID

- 1 Offloads graphics processing from the CPU to the GPU
- 2 Pooling GPU resources increases user density per server
- 3 Improved productivity through collaboration from any BLDD or client location
- 4 Travel and IT costs have been reduced because users can access GRID remotely
- 5 Enhanced version control means fewer problem throughout project lifecycle

system has been relieved because the GPU is offloading work from the CPU and optimizing and balancing the system's performance. Users are able to share large, complex 3D models of 250MB or more in real time. We used to experience problems where imperfect coordination during the design phase led to issues further along in the project. Today, every staff member has full access to the most up-to-date versions of the information they need with less need to travel between offices in order to collaborate effectively. The icing on the cake is that our employees can access the VDI with full performance from client locations. Our clients love it."

RESULTS

NVIDIA GRID K2 technology has given BLDD the freedom to use Revit to its full potential at any time from any location. Staff are more productive and able to enjoy more flexible working models.

Overall, NVIDIA GRID K2 technology has delivered true competitive differentiation to BLDD through reduced travel and hardware costs, and by serving as a force multiplier to maximize resource and expertise utilization.

Staff can collaborate more easily and intuitively to deliver the best possible results for clients while reducing issues with information and asset coordination. These advantages allow BLDD to act like a bigger firm by providing a top-quality offering without an unsustainable outlay on hardware and tech support. Meanwhile, tweaks to the system remain ongoing in order to solve minor issues and boost performance even further.

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“Success like this doesn’t stay quiet for long,” concluded Reynolds. “Word got out about our amazing VDI solution and I am pleased to say that other firms are reaching out to us to ask how we achieved these impressive results. GRID has solved our problems, expanded our capabilities, and positioned us as local thought leaders in the area of desktop virtualization. We hit the trifecta on this one!”

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