Virtual Desktop Infrastructure (VDI) environments are dynamic setups that facilitate simplified and centralized management, improved security, increased productivity, high availability and uptime. A major plus point of virtualization is that it greatly limits the role of dedicated administrators in keeping systems up and running smoothly. Even then, a thorough deployment always integrates solid IT infrastructure support for the best possible user experience. This is why ClearCube® designed the SmartVDI Converged Infrastructure Platform to cater to an extensive range of different user needs and organization scenarios for greater versatility and easy manageability.

**Centralized and Virtualized Computing For Organizations**

Companies that operate in a distributed PC environment would understand the complexity associated with tackling challenges such as energy costs, security risks, desk-diving and duplicate software licensing. All these must be managed simultaneously without compromising on performance and this is exactly one of the reasons why businesses consider shifting to lightweight desktop environments. Realistically, in today's digital era, time is money and effective resource management towards IT is at the core of many successful business operations. Our SmartVDI™ solutions cater to this requirement by effortlessly transitioning organizations from using PCs to highly available virtual desktops that deliver great end user experience. SmartVDI desktops have the capacity to handle complex configurations with the same personalization features as desktop computers. The benefits of SmartVDI for different use cases are clear.

**SmartVDI™ Example Configurations For User Groups**

Three SmartVDI systems are needed to establish a high availability configuration using VMware vSAN™ software layer. As no administrator wants to risk the loss of services in production level deployments, almost all SmartVDI configurations start with these systems and scale upward.
**SmartVDI™ Converged Infrastructure Platform - Basic**

The SmartVDI host platform is configured, tested and supported as a pre-integrated standards-based VMware VDI solution. It uses VMware core components such as Horizon® 7 with View and vSAN for clustered storage.

**SmartVDI™ Converged Infrastructure Platform with Tesla M10 and GRID software vSGA**

Virtual Shared Graphics Acceleration (vSGA) is designed so that multiple virtual machines running in SmartVDI memory leverage physical GPUs installed locally in the system to provide hardware-accelerated 3D graphics.

SmartVDI systems are configured with Tesla M10 accelerator and NVIDIA GRID software for knowledge workers using applications such as Google Earth, internet video streams, etc. GPUs on the Tesla M10 accelerator are shared (vSGA) by the users hosted on each SmartVDI system. As many as 64 users are supported on one SmartVDI system with 256GB RAM and two Tesla M10 accelerators. However, as three units are required for high availability, the VDI load is spread across all the systems with sizing to accommodate the loss of one system and the migration of those users to the remaining systems.
**SmartVDI™ Converged Infrastructure Platform with Tesla M10 and GRID software vDGA**

Virtual Dedicated Graphics Acceleration (vDGA) maps one virtual machine running in SmartVDI memory to a single physical GPU on the M10 accelerator to provide hardware-accelerated workstation graphics where a discrete GPU is needed.

Power users have more demanding CPU, memory and GPU requirements than knowledge users so shared GPU configurations are replaced within SmartVDI by dedicated GPU per user configurations. The GPUs each have 8GB of RAM and support the latest graphics libraries including NVIDIA CUDA for those higher end applications. Each M10 accelerator has four GPUs and supports four users with 640 processing cores per user. Therefore, up to eight users are supported per SmartVDI system.

**SmartVDI™ Converged Infrastructure Platform with Tesla M60 and GRID software vDGA**

Designers and developers of 3D graphics content with complex datasets may be best served using SmartVDI with M60 accelerator. Each M60 accelerator has two GPUs so a total of four users can be virtualized per SmartVDI system. This provides dedicated graphics with 8GB of RAM and 2048 processing cores for the virtualized power user.

**SmartVDI™ Converged Infrastructure Platform with GRID adapters vGPU**

NVIDIA GRID vGPU enables multiple VMs to have direct and simultaneous access to a single physical GPU using the same NVIDIA graphics drivers that are deployed on non-virtualized operating systems. This gives VMs unparalleled graphics performance and application compatibility, together with cost effectiveness and scalability brought about by sharing a GPU among multiple workloads.

Our SmartVDI w/ GRID has evolved with each new GPU capability’s realization. SmartVDI with GRID delivers the capability for multiple virtual desktops sharing a single physical GPU and multiple GPUs on a single physical PCIe card. This provides 100% application compatibility of pass-through graphics with lower cost of multiple desktops sharing a single graphics card to facilitate a richer end user experience.

With SmartVDI, VMware, NVIDIA GRID vGPU technology, the graphics commands of each virtual machine are passed directly to the GPU without translation by the hypervisor. This allows the GPU hardware to deliver the ultimate in shared virtualized graphics performance.
SmartVDI, Blade PCs & Engineering Workstations Assure Satisfied Power Users

SmartVDI is complemented by our PCoIP-enabled Blade PCs with dedicated NVIDIA® Quadro® series GPUs (P2000, P4000, P5000, M6000) for graphics-oriented use cases that do not fit well in pure VDI environments. Like SmartVDI, Blade PCs use Zero Client endpoints at the desktops and in most cases, can be managed by the same VDI tools. Blade PCs address certain user profiles, a smaller number user community, specialized applications written for Linux and a variety of other instances more cost-effectively. A blend of Blade PCs and SmartVDI systems provide the ideal options for GPU-oriented users.

Please consult with ClearCube Technology’s sales team for the best configuration options based on organizational requirements. We help calculate the optimum number of users supported by SmartVDI™ based on company-specific variables.

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