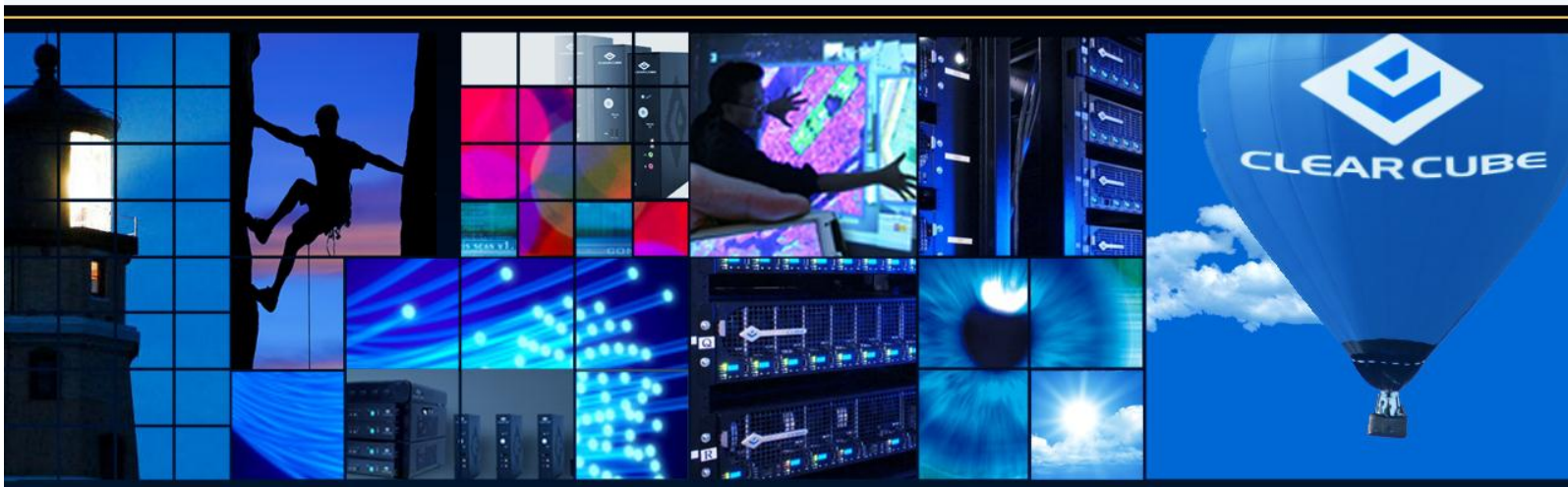


Why ClearCube Technology for CAD/CAM/GIS customers?

Q1_2013



CLEARCUBE®

moving desktops to the datacenter

Why ClearCube for CAD/CAM/GIS customers?

Recent technology enhancements by ClearCube address key issues for CAD/CAM /Geospatial users that want full graphics capabilities at their displays from engineering workstations located in their remote datacenters.

We call this CDI -- Centralized Desktop Infrastructure.

CDI addresses CAD/CAM/GIS designers' wish lists for:

1. Remote processing with fast local display performance
2. Solving the last mile network problem
3. Better user environment
4. Unparalleled data security
5. Instant Moves/Adds/Changes
6. Business continuity



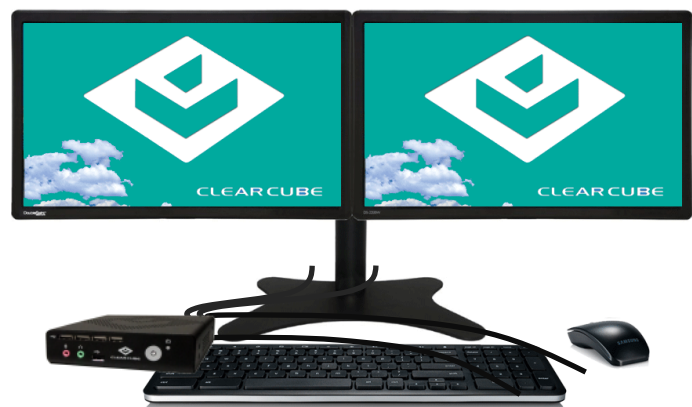
M1022W 1U with NVIDIA Quadro 6000

Remote Processing With Fast Local Display Performance

CAD/CAM designers and GIS analysts want instantaneous 3D modeling with no processing delays. CDI delivers 60 frames per second (300 megapixels per second) to 2560x1600 displays from rack mount Blade PCs/Workstations with no compromises in performance over distance.

Blade PCs have all the same feeds and performance speeds as standard PCs, because they are standard PCs but with form factor changes that provide high rack density, better manageability and integrated PCoIP host adapters for high speed connection to zero client devices. A6106D Blade PCs support single slot GPUs such as NVIDIA 2000 and 4000 Series.

For numerical analysis and algorithmic applications, M1022W dual 8-core Xeon workstations support dual slot GPUs such as the highest performing NVIDIA Quadro 6000 and K5000 adapters along with integrated PCoIP host compression adapters. Even though all the CPU/GPU processing is host-rendered, engineers/designers/analysts will think their workstation processing engines are still under their desks because the performance will be the same, but they'll wonder where the noise, heat, and cable clutter went. Off to the datacenter where it belongs.



Dual 2560 x 1900 display configuration

An added benefit is application compatibility. If the application runs on a standard PC, it will operate on our A6106D Blade PC or M1022W workstation. The PCoIP protocol, which just sends pixel changes and re-directed USB signals from the host-rendered source, is certified with numerous workstation ISVs including Dassault Systemes (CATIA, Solidworks), Autodesk (3ds Max, Softimage), Siemens-UGS (NX, Solid Edge), Schlumberger (Petrel, GeoFrame), ESRI, etc.

Solving the last mile network problem

CAD collaboration often involves transferring huge files to the end point PCs for processing. With distributed PCs, the 1Gb Ethernet network is the choke point for large file transfers. One costly remedy is to replace 1GbE cabling with 10Gb Ethernet infrastructure out to the desktops to speed file transfer. A better alternative is to leave the existing 1Gb Ethernet in place, and expand network bandwidth for the very short distance between the M1022W workstations and the 10Gb Ethernet switch in the datacenter. This can only be accomplished if the workstations are in the datacenter near the switch, allowing huge file transfers to travel only short distances. This workstation/network switch proximity can be accomplished using M1022W workstations with 10Gb Ethernet adapters, saving you massive infrastructure cabling costs. Because M1022W workstations have embedded PCoIP host compression adapters, only pixel changes occur between the M1022W and the zero client to which it is connected. The bandwidth requirement from the datacenter host computer to the engineering desktop is minimal.

Better user environment

What exists in the work area must lead to high productivity; therefore, high resolution display screens are necessary but failure-prone PCs are not.

By removing the PCs from the work area and replacing them with zero clients, you are removing space-consuming, noisy, heat-producing electronics. All that resides at the desktop is a tiny footprint, silent, low power zero client that has no moving parts with minimal electronics (6W) to support peripheral connections. Engineers gain more space, have fewer distractions, and benefit from an uninterrupted work environment – which translates to happier, more productive workers, and fewer stressed-out network administrators.



Single 30" 2560 x 1900 display option

Data security

Engineering companies want to ensure that their intellectual property is secure. They want no data to reside at the desktop on hard drives, and they want to eliminate the possibility of sensitive data extraction from the network through any kind of mass storage devices such as USB thumb drives or CDs. You cannot provide this capability with standard PCs where data resides on local hard drives for GPU rendering. With CDI, you can remove all data from the desktop area.

Zero clients are stateless devices with no operating system, no memory, and no storage. All data resides in the secure datacenter on A6106A Blade PCs or M1022W workstations. No data travels across the IP connection -- only pixel change updates are sent to the displays. Additionally, with CDI, USB enablement/disablement at the zero client desktops is policy-based, which prevents data extraction from the network. Sensitive information is secure and cannot be removed, plus malicious code such as viruses, worms and unlicensed software cannot be added to the network

Instant Moves/Adds/Changes

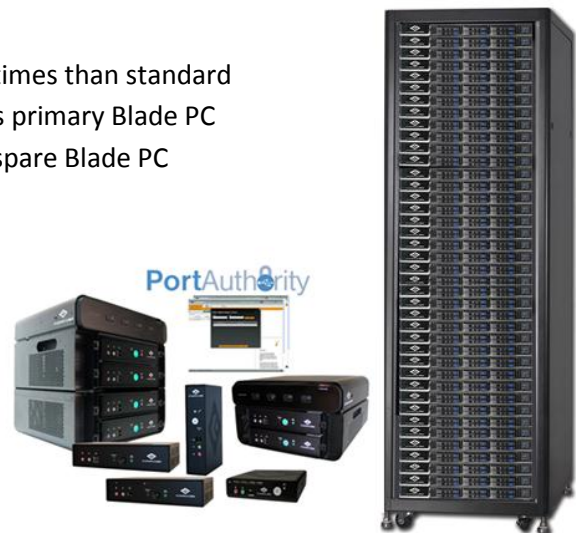
For collaboration purposes, engineering companies want to provide their designers with the flexibility to roam freely from desktop location to desktop location and give their designers the ability to log into their host computers from anywhere on their network. You cannot provide this capability with standard PCs. With CDI, you can.

This means engineers can have their CAD files follow them to work from any location on the network through a zero client brokered connection via PCoIP to the desired host resource – either a Blade PC or M1022W engineering workstation. Engineers can change their physical locations to collaborate fluidly and work jointly without having to add/move/or change anything. They just login from any zero clients to their host resources on their network from where ever they are located. The administration hassle of moving equipment and connections goes completely away.

Business continuity

CAD/CAM engineers and geospatial analysts need to be happy and busy creating new designs and processing enormous amounts of data. The disruption of work is costly and unacceptable. If a standard PC fails, restoration of service is time-consuming and labor-consuming, with negative ramifications for engineers on scheduled deliveries to their teams.

Centrally located and managed Blade PCs have higher uptimes than standard PCs, and restoration of service is much quicker. If a user's primary Blade PC experiences downtime, the user can be moved over to a spare Blade PC dynamically and without much administrator intervention to immediately restore service and business continuity. Sentral Console provides a summary snapshot of how the environment is performing. If a user loses his session due to network of device failure, multiple administrators are notified via visual and email alerts. Management of centralized resources is easier than trying to manage distributed PCs on a network. It's easier to access equipment in racks, easier to troubleshoot issues, and easier to add software and services. The results are reduced operating costs.



ClearCube family of Zero Client with 42 M1022W high performance engineering workstations in one 42U rack

Why ClearCube for Financial Services customers?



Chart-topping mission-critical performance, reliability, and powerful graphics capabilities in 1U are the cornerstones of the M1022W design.

Summary

CDI remote workstation solutions using PCoIP change the CAD/CAM and geospatial workstation paradigm by enabling all workstations – and data – to remain in the data center, while CAD designers and geospatial analysts work remotely using sophisticated graphics applications.

Recent ClearCube product enhancements embodied in the CDI architecture make the solutions even more compelling for CAD/CAM and geospatial customers.

To delve deeper into CDI's benefits for you, please contact a ClearCube sales representative today.

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