

Enabling Remote Services with ClearCube Centralized Client Computing

The spread of the Internet and increasing availability of high speed connections around the world has enabled a new generation of applications previously unavailable to remote users. The ability to use computing resources located anywhere in the world facilitates higher asset utilization and makes new business processes and models possible.

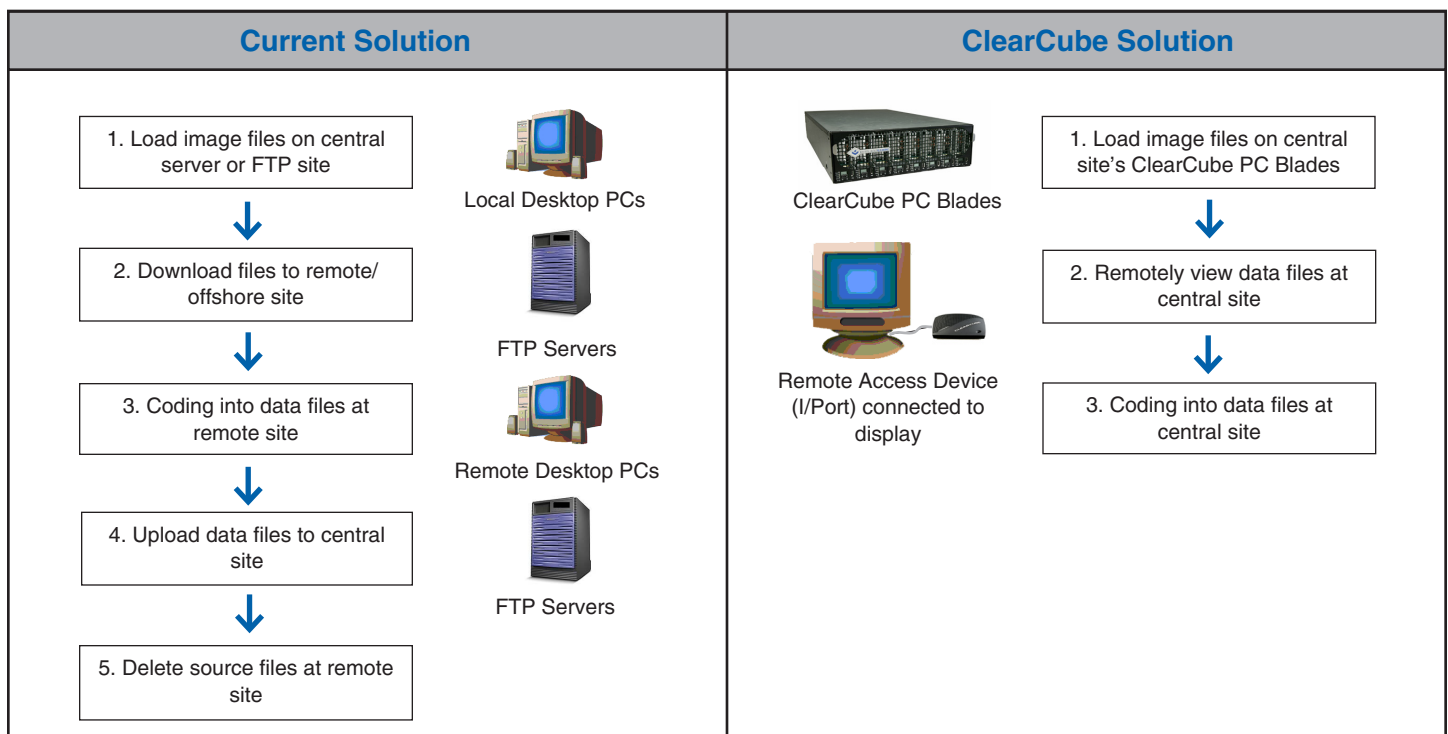
The centralization of an organization's PC resources with ClearCube PC Blades can enable these benefits. ClearCube PC Blades that are located in one geographic area can be made available to users in any location via an Internet connection and a variety of access devices. Access devices range from small form-factor ClearCube I/Ports to full-size box PCs. The access device connects to a remote PC Blade using the RDP protocol for video and peripheral redirection.

This system allows remote users to access large amounts of data and computing-intensive applications at a central location without having to download or install them locally. Beneficiaries of this approach are companies using outsourced business processes such as medical transcribing/coding and billing, legal and financial services.

Example Application: Medical Coding and Billing Services

The fast growing medical coding services business traditionally requires the remote site to download large image files (often in TIFF format) containing clinical data. After the coding/transcribing process is complete, the output data files are uploaded and the source image files are deleted from the PCs at the remote site. Downloading the image files requires very high bandwidth, long-distance network connections, and the size of the files can often result in significant time wasted waiting for an image to download. Furthermore, the applications and PCs at the remote site must be managed and kept current by the company's IT department.

A ClearCube remote solution avoids these problems since the images are rendered locally on the central site and then simply displayed at the remote site via RDP. No large image files have to be transferred because the end user is simply viewing the output, which requires significantly lower bandwidth and eliminates long download times. More importantly, the clinical data is stored and managed entirely at the central site, which avoids security issues arising from private medical data being sent to a remote or offshore site. The figure below shows how this new approach is significantly more efficient.



Benefits of a ClearCube Enabled Solution

The following benefits apply not only to the medical coding example described above, but also to other remote applications such as legal transcription services, software development and financial analysis.

- **Lower Network Bandwidth Required Between Remote Sites**

The ClearCube solution renders graphics locally at the central site and transmits the display over RDP to remote users. This system requires lower network bandwidth between the remote and central sites than a traditional solution that requires downloading and uploading the source and data files.

- **Enhanced Security of Data**

Since remote users can only view the data located at the remote site, they cannot transfer data to a local CD/DVD/USB drive or other mass storage device. Avoiding data duplication at remote sites improves data security. Physically centralizing ClearCube PC Blades in a limited-access data center provides additional security for both hardware and data.

- **Low Cost of Setting Up Remote Sites**

The ClearCube solution uses small, simple I/Ports at remote sites as an alternative to full desktop PCs. The minimal maintenance costs of I/Ports and the lower network bandwidth requirements of the system allow organizations to setup remote sites at lower costs. If desired, organizations can use the existing PCs located at remote sites as a remote access client (running RDP). In this setup, no applications need to be installed on the PC, making management of the remote site far easier and less costly.

- **Avoids Unnecessary Duplication and Management of Data at Multiple Sites**

Instead of downloading data from FTP or web servers to the remote site, data only resides at the central location. The ClearCube solution avoids the duplication and management of data at multiple sites.

ClearCube Components

ClearCube offers a full suite of hardware and management software to enable an effective remote services deployment.

- **I/Port** – small industry standard connection device that links the monitor, keyboard and mouse in each work area back to its centralized PC Blade over an IP connection. The I/Port is placed in the remote office and can be managed from the central office using the ClearCube Management Suite.

- **PC Blade** – dense computers that slide into chassis that are rack-mounted in a data center. PC Blades contain industry standard Intel® Pentium 4 or dual Xeon processors, memory, hard drives and video cards. The chassis that houses the Blades contains intelligent switching technology that allows administrators to switch users to a spare Blade in seconds. The PC Blade is placed in the central data center and can connect to an I/Port from anywhere in the world.

- **ClearCube Management Suite Software** – a suite of tools that enables administrators to remotely manage the complete PC Blade installation without having to make trips to user work areas.

