

# The Value of Zero



## ClearCube -- The First with Firsts

ClearCube Technology was the first manufacturer to incorporate PC-over-IP (PCoIP) into Zero Clients. As a result, ClearCube has the industry's largest knowledge base and the most experience with PCoIP technology which translates into expertise to ensure that your VMware View or Sentral brokered Zero Client deployment is flawlessly implemented. In addition, ClearCube's pre-sales support and post-sales support engineering teams have extensive PCoIP training as well as VMware certifications. Because ClearCube's sole focus is on virtual and centralized computing solutions, when you call us for help you will speak to a PCoIP expert with access to the industry's most comprehensive knowledge base. Not only does ClearCube's unparalleled PCoIP expertise lead the industry but the following reasons will help you understand why government agencies and commercial enterprises rely on ClearCube zero clients more than any other.

## Zero Better than Thin

Zero Clients and thin clients are often mistakenly interchanged in the purchasing consideration process. However, they are quite different. Zero Clients have distinct advantages over thin clients. Thin clients render their display outputs at the desktops; therefore, thin clients have local operating systems, video adapters, memory, and the need to update each desktop with patches, fixes, and driver updates. Zero Clients, in contrast, use host-side rendering. Once the image is rendered on the host, the PCoIP protocol broadcasts just the encrypted pixels (not the data) across the network to the Zero Client which makes it possible to have stateless, decode-only client devices with zero operating systems, zero local storage, and zero end point maintenance. Host rendering also improves latency insensitivity. With PCoIP protocol, the one-way delivery of just pixels to the zero clients provides complete independence from network latency and bandwidth limitations and enables a rich user experience – even on high latency wide area networks.

The benefits of zero clients over thin clients include:

- higher security
- lower administration
- lower energy consumption



*With ClearCube Zero Clients almost limitless options abound including fiber or copper connectivity, dual or quad display, integrated SmartCard Reader, and more...*

## Security

The stateless architecture of PCoIP Zero Clients, and the absence of data at the desktop enables ClearCube Zero Clients to provide the easiest to manage, most secure and highest performance user experience for office workers and power users. The PCoIP protocol used to connect ClearCube Zero Clients to its host resources is AES 256 bit encrypted, with Suite B Ciphers. In addition, ClearCube Zero Clients have policy-based USB/mass storage enablement/disablement management through ClearCube's PortAuthority software that runs on the host platforms. PortAuthority gives network administrators granular, flexible control of how they lock or unlock USB and mass storage devices on a usage, time, size, location and owner basis. In addition, PCoIP has extensive authentication and single sign-on (SSO) capabilities for use with smart cards, proximity cards and other SSO devices. Many ClearCube Zero Client models have built-in SIPRnet/CAC readers.

## Administration

Because no operating system is at the end point, with ClearCube Zero Clients there is no need to push operating system patches, fixes and driver updates to the end user desktops. Also, as stateless devices, Zero Clients are immune to virus invasion so there is no need to administer anti-virus updates to the end points.

## Power Reduction

Thin clients have processors, memory, and video adapters that require power that can range from 30-150 Watts at each desktop. Because Zero Clients have none of those items, power consumption will range from 6-15 Watts, with the small variance dependent on the number of displays and USB devices connected at the desktops. Power costs for Zero Clients, therefore, can range from 1/5th to 1/10th that of thin clients.

## ClearCube's Industry Leading Warranty

ClearCube manufactures its zero clients in the United States and stands behind its products with an Advanced Replacement Warranty. ClearCube will ship you an advanced replacement unit in the event of a product failure during the warranty term. No other Zero Client manufacturer offers this type of warranty. Other zero client marketers require you to return a faulty unit and once they have assessed it and determined that it is faulty, then they will ship you a replacement unit. All of that takes time and creates a loss of service for you. Not so with ClearCube Zero Clients.

## ClearCube Solves the Windows Licensing Conundrum

Working in conjunction with Microsoft, ClearCube has developed a Windows 7 licensing solution that provides customers with a Microsoft Windows 7 Diskless COA license with Software Assurance for a one-time fee. This provides significant savings to customers over the alternative subscription-based model and helps accelerate the return on investment while extending the financial benefits of VDI. Considering the average life cycle of zero clients at between five and seven years, ClearCube's COA licensing returns a payback after 2.5 to 3 years, with huge savings that are easily calculable based on the quantity and timeframe for use.

## Specialty Zero Clients

ClearCube's ClientCube is the first endpoint that consolidates multiple networks into one device at the desktop, while maintaining physical network separation to centralized computing resources in the datacenter. SmartVDI host platforms and Blade PC workstations can now be isolated and secured in the datacenter without compromising the user experience or network security at the desktop. Co-developed by ClearCube and Belkin, this sleek all-in-one unit integrates ClearCube's secure stateless zero client devices with Belkin's NIAP-approved secure KVM (keyboard-video-mouse) switch to create a multiple level security network like no other.

ClientCube's KVM features uni-directional data flow that prevents upstream USB intrusion; high-retention force USB connectors to eliminate unexpected cable disconnections; illuminated and color-coded port indicators; and common access card (CAC) port locking that maintains user login to selected host networks.

ClientCube is factory integrated at ClearCube's secured facility and ships to you in tamperproof packaging. Options include from 2, 3 or 4 ClearCube zero client devices (including ClearCube's full range of zero client products featuring fiber, copper, dual, quad, SIPR/CAC, and other innovations) that are KVM switched to 1 or 2 high resolution displays, allowing multiple classified and unclassified routes to terminate at a single set of peripherals at the warfighter operator's desk. For the security officers, ClientCube provides line-of-sight isolation from the datacenter to the desktop.

## ClearCube's Complete PCoIP Solutions

ClearCube's innovation with the PCoIP remote computing protocol does not stop with zero clients. ClearCube has developed an entire suite of PCoIP products to complement your zero client environments. These products include ClearCube SmartVDI compute/storage platforms, Blade PCs and Zero Client Engineering Workstations that seamlessly connect to the very same zero clients to provide appropriate performance levels for all users in the enterprise, including the most demanding power users. The combination of VMware View virtual machines on SmartVDI platforms and ClearCube Blade PCs provide you with a complete solution for all your end-users. Please see ClearCube's Centralized and Virtualized Desktop Infrastructure (CVDI) Solutions and White Paper descriptions on ClearCube's website for more information.

## ClearCube's Zero Client Services

The majority of Zero Client vendors have just recently entered the market with a "me too" offerings, and most of them are just rebranding someone else's generic box. With ClearCube, you get a huge variety of purpose-driven endpoints designed and manufactured in Texas, and fully supported by the pioneer and leader in Centralized Desktop Computing. ClearCube Technology has the most experienced PCoIP engineering support staff in the world. We understand the performance variables with differing network topologies and how to optimize the environment to deliver maximum performance. ClearCube's professional services team can help you get the most performance out of your available bandwidth.



ClearCube Multi-security Level ClientCube supports 4 Zero Clients

## ClearCube's Zero Client Firsts

ClearCube Technology has been first to market with numerous Zero Client solutions, including:

- Zero Client with Integrated CAC / SmartCard Reader
- Quad Monitor Zero Client with PCoIP Technology
- Zero Client with Fiber Optic Connectors
- Zero Client with a DB9 Serial Connector
- Zero Clients Integrated with a Secure KVM in a Single Enclosure
- Zero Client with 7 integrated USB ports