Using Zero Clients to Maximize Benefits of Desktop Virtualization and DaaS Initiatives

One of the most important decision points in deploying a virtual desktop infrastructure (VDI) or Desktop as a Service (DaaS) initiative is in choosing the right client platform for each user. IT organizations are increasingly turning to VDI and DaaS to reduce costs, improve security, simplify deployments, enhance productivity and achieve centralized control over a rapidly evolving desktop environment. In conjunction, as IT organizations address bring-your-own device (BYOD) requirements, enterprise workers still expect a highly responsive desktop experience to connect to corporate resources from their primary office locations.

While cost savings can be significant, deploying a VDI or DaaS initiative is not just about ROI: IT organizations are deploying these technologies to assert greater control over their desktop environments, to ease deployment and configuration challenges, simplify scalability, enhance security and increase uptime and applications availability. In addition, IT departments are looking at VDI and DaaS initiatives to increase the productivity of employees and provide them with a tailored experience. In fact, when thinking about a VDI or DaaS deployment, one of the paramount evaluation criterions must be ensuring a rich and rewarding user experience.

IT decision makers have a wide range of alternatives for client solutions, from fully loaded PCs to thin clients, to zero clients. Choosing the right client platform will have long-term ramifications affecting the success of the deployment. The decision around the client platform becomes even more important over time because savings can multiply.

VDI and DaaS initiatives are often rolled out as pilot projects or solutions for specific departments or use cases. As these pilot projects succeed, IT gains knowledge and confidence to roll out VDI or DaaS on a broader, enterprise-wide basis.

Many progressive companies have realized that utilizing zero clients wherever possible delivers the most significant longterm cost savings, while also providing the most effective platform for addressing operational challenges around deployment, configuration, support, migrations, security and scalability.

Using zero clients also means cost savings will multiply as initiatives expand, and IT will be able to onboard new users far more efficiently and effectively. What's more, organizations will benefit greatly from the longer lifecycle of the equipment they install, again seeing cost savings that grow over the life span of the deployment.

Organizations that are utilizing virtual desktop, virtual workstation or DaaS solutions that leverage PCoIP technology can optimize their desktop environments by deploying PCoIP Zero Clients. Zero clients utilizing the PCoIP protocol give customers the widest choice of vendor solutions, while delivering the most secure and highest quality user experience.

In this white paper, we analyze the benefits of using zero clients in VDI and DaaS environments and discuss the specific advantages of using PCoIP Zero Clients. We also look at several real-world examples of companies that have successfully deployed PCoIP Zero Clients to make a significant difference in their operations.
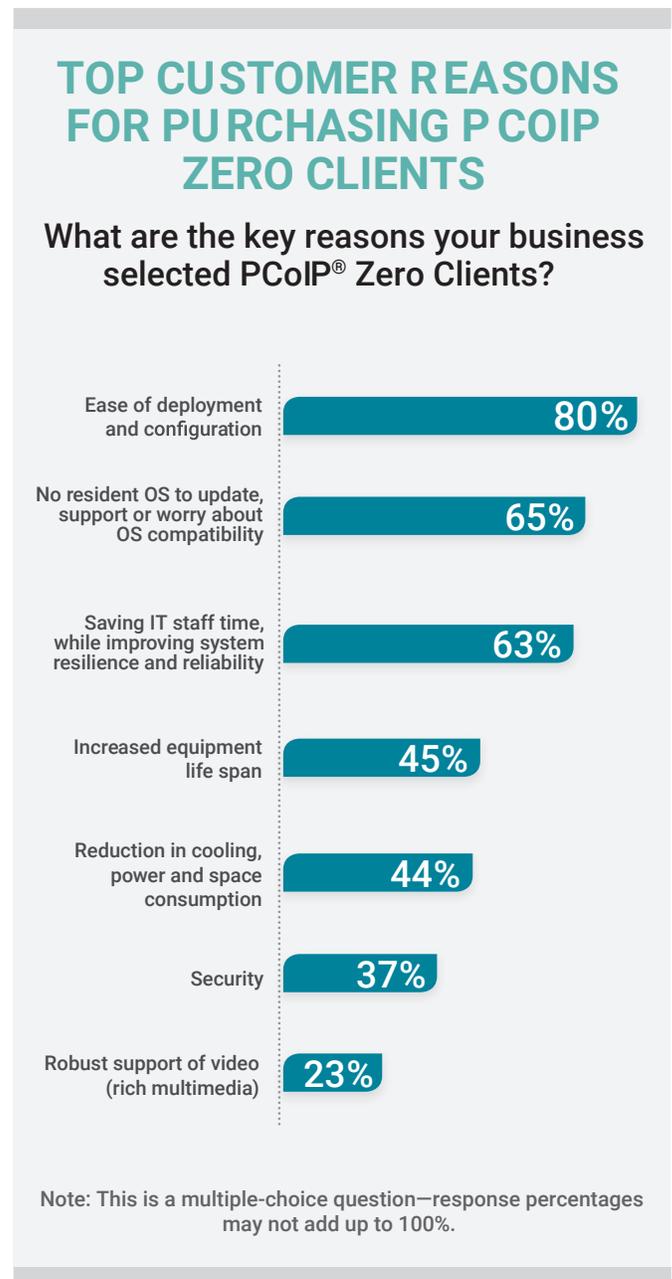
teradici®

Why Zero Clients

Zero clients offer particular advantages in hardware and deployment costs when compared to other solutions. PCoIP Zero Clients are the simplest and most secure clients for office workers and power users. These hardware-based clients use a highly integrated, purpose-build Teradici Tera processor in place of many components of a traditional x86 client, such as a general-purpose CPU, local data storage and application operating systems. They basically provide an interface for a display, keyboard and mouse. All of the software and data resides on a server, which means zero clients don't need software drivers or antivirus or antimalware software. Updates are handled in the back-end server, so there are no patches for IT to address, and no updates or migrations for operating systems or applications.

Zero clients are plug and play and can be up and running in minutes. They require less power to run and are more reliable, more secure and easier to manage than other solutions. In addition, zero clients will typically have a longer life span than other equipment, delivering incremental savings year after year.

Here, in brief, are the top 11 reasons why organizations deploying VDI and DaaS initiatives typically utilize zero clients:

1. Ease of deployment and configuration.
2. Improved security.
3. No resident OS to update and support, and no issues to worry about regarding OS compatibility.
4. No single point of failure with a hard drive or fan.
5. Lower cooling and power costs, and reduced space consumption.
6. Longer equipment life span.
7. Savings in IT staff time in supporting, migrating, upgrading and patching users.
8. Improved system resilience and reliability.
9. Ability to deliver a rich multimedia experience to users.
10. Ability to give every user the same rich virtual desktop experience.
11. Support of desktop computing through clusters or a cloud-powered back end.

The following research results from TechValidate, based on responses from more than 1,160 customers of Teradici PCoIP Zero Clients, illustrate the key factors driving organizations to select zero clients:

TOP CUSTOMER REASONS FOR PURCHASING PCOIP ZERO CLIENTS

What are the key reasons your business selected PCoIP® Zero Clients?

Reason	Percentage
Ease of deployment and configuration	80%
No resident OS to update, support or worry about OS compatibility	65%
Saving IT staff time, while improving system resilience and reliability	63%
Increased equipment life span	45%
Reduction in cooling, power and space consumption	44%
Security	37%
Robust support of video (rich multimedia)	23%

Note: This is a multiple-choice question—response percentages may not add up to 100%.

Source: Survey of 1,161 users of Teradici PCoIP Zero Client

teradici®

The Benefits of PCoIP Zero Clients

The most widely used zero clients are PCoIP Zero Clients. PCoIP technology developed by Teradici compresses, encrypts and transports the desktop image hosted on a central server or workstation to remote PCoIP endpoints on the user's desk. The endpoint devices decompress, decrypt and display the image so that only pixels are transmitted, not data. And, from the user's perspective, there is no difference between working on a local computer loaded with software and working on a zero client receiving the image of the applications software running via PCoIP.

There are a number of virtual desktop, virtual workstation and DaaS solutions that leverage PCoIP technology, including VMware Horizon and Amazon WorkSpaces. PCoIP Zero Clients offer a highly secure and easy to manage way to connect enterprise users to all of these solutions.

The use of PCoIP by the leading virtual desktop and DaaS providers means that PCoIP Zero Clients have the broadest coverage in the market, giving customers many more options for pricing, features and support. More than three million PCoIP Zero Clients have already been sold and are available from more than a dozen different industry-leading hardware vendors in a range of different form factors, including integrated all-in-one monitors, laptops and standalone desktop devices.

PCoIP is widely utilized and broadly supported because, in addition to delivering ease of management, lower costs and a highly secure environment, it also delivers a rich, uncompromised virtual desktop experience for users.

Here are customer quotes on the PCoIP Zero Client experience:

Great Performance and User Experience

" If you have a computer it has to be able to provide a rich media experience. The intelligence of PCoIP to adapt to network changes and load demands on the fly make it a superior choice.

" To meet our customers' expectations, we cannot afford down time with our PCs failing due to the power supply or hard drive crashing.

Ease of Management and Improved IT Efficiency

" Deploying a zero client is much faster when all you have to do is unbox it, plug it in, have it auto-acquire its settings based on the policy you assign, and then go plug it in and let users start logging into it. The units are cheaper than desktops, require less power and are easier to use.

" The ability to provide a consistent and reliable desktop throughout our organization is our ultimate goal. To be able to get to the same desktop, with the same settings and the same experience anywhere in our facility, is a huge win.

Improved Security and Protection of Corporate Data

" No built-in operating system to update/patch or contend with compatibility issues.

" With PCoIP Zero Clients [we can] quickly implement secure environments in branch offices without having to deal with full-scale PCs. They also make it much simpler to replace equipment and onboard new users: Just plug and play.

teradici®

PCoIP Zero Client Success Stories

The customer base for the three million PCoIP Zero Clients deployed is quite impressive, representing companies of all sizes in all industries all around the world—including many Fortune 500 companies, leading cloud and service providers, financial institutions, healthcare providers, local and federal government agencies, and educational institutions, among others.

Here are three real-world success stories where PCoIP Zero Clients have made a significant difference in an organization's operations and its ability to address the needs of users and IT managers.

Bell – Commercial & Military Aircraft

> " *The experience with PCoIP is indistinguishable from being in front of a local workstation. Image loading feels instantaneous and 3D models don't go fuzzy when you spin them. Compared to other protocols we've tried, the PCoIP protocol lets us see the finer details and easily zoom in—for example, to look for wear."*

BILL SMITH
IT ARCHITECT AT BELL

Bell has nearly 60 analysts that work with demanding applications like ANSYS Workbench, MATLAB, and MSC Nastran. As models grew to over 1 TB, Bell could no longer lease under-the-desk workstations with sufficient CPU and GPU power. The company decided instead to deploy powerful rack workstations in the data center, which analysts would access from their desks.

Stress simulations require exacting image fidelity and ultra-high performance. Bell's 3D models are very intricate—think simulating the movement of multiple meshed gears inside a transmission. "To measure wear, analysts need exceptionally high-quality graphics," Smith says. "They can't tolerate lag or 'lossy' images that slowly sharpen over time." In addition to exceptional image fidelity, Bell needed a solution that met stringent U.S. Department of Defense security requirements and supported the USB 3DConnexion SpaceMouse that analysts use to navigate through their models.

Bell found its solution in Teradici PCoIP technology. All stress engineers use PCoIP Zero Clients to access workstations containing PCoIP Remote Workstation Cards in the data center. The PCoIP Remote Workstation Cards support high-resolution, full-frame rate 3D graphics and USB peripherals like the SpaceMouse. Analysts who want to access their workstations from a laptop can do so, with Teradici Cloud Access Software. Smith simply installs Cloud Access Software on the laptop and workstation so analysts can access their workstation from home or other remote sites.

teradici

North Kansas City Hospital

> " *With PCoIP Zero Clients and 'tap-in, tapout' badge access, doctors, nurses and clinicians can roam from location to location without the hassle of closing down electronic medical record applications or logging in and out"*

ART FISK
CIO OF NORTH KANSAS CITY HOSPITAL

North Kansas City Hospital is an acute-care facility with 451 licensed beds and six centers of care. In 2013-2014 it was listed in the *US News & World Report* ranking of the best hospitals in the metro area, a recognition that showcases only 15% of the nation's approximately 4,800 hospitals.

Several years ago, when the hospital was converting to an electronic medical record (EMR) system, the IT organization discovered inefficiencies in its previously deployed PCs. Basically, the PCs were restricting the staff to inefficient workflows and were taking up too much space.

The hospital decided to seek an alternative solution that would:

- Give doctors, nurses and clinicians quick, convenient access to information at the point of care.
- Secure data in compliance with industry best practices and regulations.
- Maximize computing resources for optimal PC usage

After thorough evaluation and analysis, the hospital decided to go with VMware Horizon View with Teradici PCoIP Zero Client endpoints.

The result has been improvements in patient care and user efficiency. "Today, zero clients give us a smoother viewing experience," says Fisk. "This has been a benefit for our doctors, and the performance of the PCoIP protocol was one of the reasons that we upgraded to the latest release of VMware Horizon View so quickly." Adds IT manager Geoff Schillare: "When it comes to availability, flexibility and security—all the things we hold near and dear as an IT entity—PCoIP Zero Clients make sense."

teradici®

Government of Bartholomew County, Indiana

> " *We have seen reduced end-user downtime due to things like viruses, faster deployments of new software and operating systems, and dramatic decreases in the amount of time IT spends provisioning and updating devices"*

JENNIFER SLABAUGH
SYSTEMS ADMINISTRATOR OF
BARTHOLOMEW COUNTY GOVERNMENT

Before turning to PCoIP Zero Clients, the Bartholomew County government faced a variety of challenges with its desktop IT environment. Among the challenges:

- The high cost of managing IT.
- A need to reduce power requirements.
- A need to cut down operating costs.
- Limited IT staff bandwidth.

The goal of the new deployment, using VMware View with Teradici PCoIP Zero Clients, was to:

- Ease deployment and configuration.
- Have no resident OS to support or update.
- Increase the equipment life span.
- Save IT staff time while improving system resilience and reliability.

The result: PCoIP Zero Clients have enabled the government to save greater than 50% on deployment and configuration costs. "We did not want an additional enduser OS to patch and maintain when we went to virtual desktops, and we also used the 'new and shiny' aspect of new gear to increase end-user buy-in for this new technology," says Jennifer Slabaugh, system administrator at Bartholomew County Government.

Conclusion

As can be seen in these real-world examples, PCoIP Zero Clients are delivering impressive results for enterprises in many areas: total cost of ownership savings through ease of deployment and management; user experience, productivity and satisfaction; IT efficiency and productivity; enhanced security; power and space savings; and others.

As organizations expand their use of VDI and DaaS, the importance of implementing the right client-side platform will grow, and the benefits of zero clients will become even more pronounced.

PCoIP Zero Clients can be managed by PCoIP Management Console Enterprise, a software application from Teradici that allows IT administrators to quickly and easily provision new clients, review metrics, configure settings and update firmware. The software is available in a subscription to **Teradici Desktop Access**.

How can your organization move forward with PCoIP Zero Clients?
Start here: teradici.com/zeroclients

teradici®