

Why Moving Demanding Engineering Users to a Flash-Based VDI is Now a Reality

I am keenly aware of the tug-of-war that a typical IT administrator encounters for their time on a daily basis. Maintaining those applications that are the most complex to manage and resource-intensive (HD, GPU, CPU, memory) on geographically distributed physical workstations for users who are bringing in the big dollars for your business is a recipe for a lot of late nights and weekends worked. And the worst part? The majority of those hours are spent completing an upgrade or averting a crisis that only impact a few users at a time!

In order to better manage environments and sanity, we need to find smart ways to simplify and have more impact without breaking the business.

We will get into how our solution can help but first let's briefly list **six key challenges** faced today by the typical physical workstation end-user and/or IT administrator:

1. **Device Proximity:** Users are chained to their desk (aka physical workstation) when they want/need to work. Updates to said device need to be performed it is powered on and connected to the internal network.
2. **Idle Company Computing Assets:** When they are not being actively used, those expensive workstation resources are not being utilized by the business.
3. **Distance Between Data and Device:** The data being manipulated needs to be transported across the LAN/WAN between the data-center and physical endpoint, resulting in lower application performance, more user idle time and increased risk of data theft or corruption.
4. **Physical Hardware Failure:** Even a minor problem can result in that user not being able to work (until the hardware is fixed (best case)) and proprietary data loss if the local drive can't be recovered (and was not backed up).
5. **Engineering Application Upgrades:** Application upgrades can be cumbersome, resource-intensive projects by themselves since many have version dependencies on adjacent applications used within the design process or rely on PDM systems that need to be upgraded in synch. Enterprises can become 'stuck' on older versions of applications, which limits competitiveness and agility.
6. **User Persona Management:** When a workstation is due for refresh, seamlessly moving all of the user's data to the new device and properly installing all of their complex engineering applications is a painful, iterative process that needs to be repeated for *each and every* user who is to be upgraded.

The importance of the introduction of [vGPU](#) and the ability to share a graphics card amongst users and also run modern OpenGL/DirectX applications is the key advancement for this new reality. We believe firmly at Pure that [all-flash storage](#) is a huge enabler for any VDI or (especially) any vGPU VDI project. Designers and engineers are your users who are going to demand and require the highest performance you can possibly provide.

Specifically, let's look at how the recently announced vGPU technology coupled with a Pure Storage

FlashArray eliminates our short list of **six common headaches with physical engineering workstation deployments above:**

1. **Device Independence:** Users can now connect to the virtual engineering workstation from a variety of form factors (e.g. thin client, tablet, home PC) enabling the ability to work and collaborate with one another in totally new ways.
2. **Physical Resource Sharing:** When a user logs out of their virtual device, the compute, graphical and memory resources that they were using are made available for others to utilize when they connect in to the environment.
3. **Data Proximity:** Since the physical servers are co-located with a Pure Array, the only information that needs to be transmitted across the LAN/WAN to the endpoint device is encrypted pixels and keyboard/mouse or touchscreen inputs.
Engineers now realize significantly faster design checkout/check-in times, analysis runtimes and OpenGL/DirectX graphical application performance than what they were seeing on their physical workstations. The importance of having an all solid state array cannot be understated in this equation; as manipulating datasets of almost any size on legacy spinning disk is certain to become a major bottleneck in these types of high I/O operations.
4. **Hardware Resiliency:** As the graphics-enabled VDI environment is running in a cluster with additional graphics-enabled hosts, connecting the user to an alternative compute resource in the event of a hardware failure on one host can be accomplished in mere moments instead of hours or even days when compared to a physical workstation. Moreover, the redundancy and encryption built into a Pure Storage array assures that proprietary data will not be lost or stolen.
5. **Engineering Application Upgrades:** Rather than having to deploy an application upgrade to hundreds or even thousands of discrete engineering desktops in multiple configurations, one of the most beneficial features of VDI is the ability to update a single master image with the newer application version(s) and then roll out the changes to the associated linked clones with maximum transparency.
6. **User Persona Management:** Using a solution like [UniDesk](#) provides your engineering customers with a truly stateless desktop. That is, regardless of what VDI pool or host they connect to, all files and applications will be immediately available upon logging in, allowing them to focus on their work rather than setting up their environment and applications.

The best news of all? Moving your engineers and designers is the hardest use case for VDI; everyone else will be simpler, cost less and be able to enjoy in the above benefits.

Stay tuned for a lot more technical specifics, tips and tricks on this subject in the near future!