



Introduction

Among the different workplaces integrated into a corporate ecosystem, workstation environments, usually used by engineers and graphic designers, may be distinguished from all other users by the following features:

- More complicated to manage and maintain
- Greater use of resources
- Use of more specific hardware
- Data security is more critical

Virtualizing this type of workplaces becomes an arduous and complicated task, since they involve a variety of platforms, connection protocols, architecture designs and specific hardware. It is recommended to analyze all these aspects in order to adopt the ideal solution.

While in a standard virtual desktop environment we recommend performing a proof of concept, for the virtualization of graphic stations or workstations it is practically essential, to be able to commission the deployed platform with full guarantees.

This document describes what becomes so specific in these types of workplaces, what the different alternatives are for a solution of this type and the benefits of UDS Enterprise for these environments.

Very specialized workplace

These workplaces make up a highly specialized environment dedicated to very specific tasks such as 3D design or the modeling and rendering of objects.

In order to perform these types of tasks, high-performance hardware components are needed:

- Devices with 1 or several multi-core processors. Possibly the only workplace that requires this type of processor configurations.
- Large amount of RAM, to be able to correctly manage the immense number of processes and calculations to be performed by the used software.

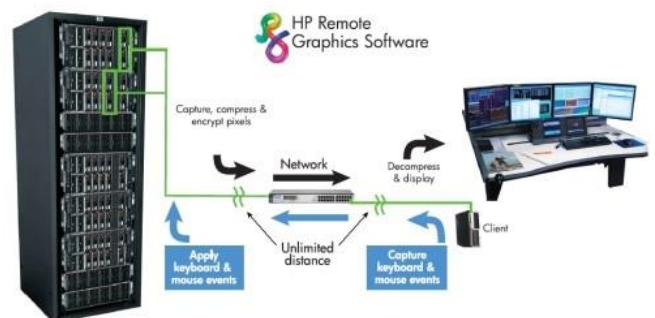
- Specialized graphic cards, with several GPUs and dedicated memory that frees up the equipment processors and memory from performing the 3D rendering tasks. These graphic cards are a constant work-in-progress, with drivers made by the hardware manufacturers or even with specific drivers made by the software manufacturers to obtain maximum performance from the hardware with the application that distributes it.

Currently, the manufacturers of this type of hardware provide a more generic use for the graphic card GPUs, using their calculation capacity for more general purposes (scientific calculations, 3D, etc.). The two main manufacturers use different technologies for these types of tasks. Nvidia calls its technology *nVidia Kepler*, while AMD calls its technology *AMD Graphic Core next*.

One solution, multiple options

The existence of virtualization solutions for these types of workplaces is relatively recent. In the market, solutions from different manufacturers have come up with an approach from different perspectives:

Remote connections to physical graphic stations. In certain platforms, graphic stations are located in the data center. Users connect by using optimized remote connection protocols.

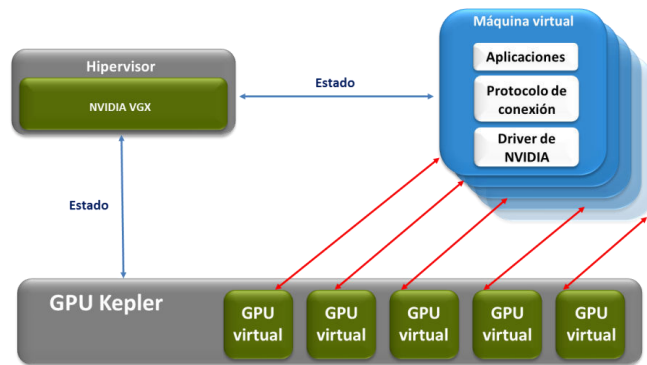




Direct assignment of graphic cards. Some hypervisors such as XenServer or Parallels Workstation Extreme allow you to assign physical resources directly to virtual graphic stations, including the graphic cards.

In this case, the number of virtual graphical stations executed on a server depends on the number of PCIe slots on the server's motherboard.

Virtualization of GPUs. Nvidia provides GPUs based on Kepler architecture, which enable virtualization of the GPU hardware. With this technology, it is possible for several virtual desktops to share the same physical GPU. The number of graphic stations per server depends on the virtual GPUs used by each graphic station.



Connection protocols

In these specialized environments, one fundamental piece is the selection of the connection protocol for the virtual graphic stations. There are various protocols on the market that are optimized for these types of tasks:

RemoteFX. Microsoft's proprietary protocol, which permits the sharing of the graphic card located in the physical server among the different virtual workstations.

HP RGS. This is the protocol developed by HP to allow advanced graphics in remote connections.

HDX 3D Pro. This is the approach made by Citrix to connect to remote graphic stations.

PCoIP. This is the protocol used by VMware, resulting from the joint development with Teradici.

SPICE. This is the Open Source remote connection protocol used in KVM platforms.

Conclusions

According to the existence of different approaches for the same solution and the possibility of choosing between several connection protocols, the options to adopt a solution for workstation environments are practically unlimited.

It is convenient to test the maximum number of possible options and analyze what the user experience is, the bandwidth consumption, what density of virtual graphic stations is achieved per server... in order to identify the solution that best suits the needs of each concrete project.

Facing challenges with UDS Enterprise

Thanks to UDS Enterprise and its differentiating features, it is possible to face all of these challenges in an efficient, simple and cost-effective way:

Multi-hypervisor. UDS Enterprise is capable of managing and deploying from a single console VDI platforms or IP services on different hypervisors running at the same time. ⁽¹⁾

⁽¹⁾ *With this functionality, it is possible to host the virtual graphic stations on a hypervisor platform that is completely separate from the platform on which the other virtual desktop profiles are deployed.*



UDS Enterprise

UDS Enterprise in graphic stations environments

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Multi-protocol. UDS Enterprise allows connection to virtual desktops or physical resources by using different connection protocols. They can be enabled simultaneously. ⁽²⁾

⁽²⁾ It allows adopting the best option of remote connection for the virtual graphic station with the consequent savings in resource consumption, obtaining an exceptional user experience and being able to choose between licensed and non-licensed protocols, achieving cost savings and limiting consumption of bandwidth.

WAN Security Access SSL. UDS Enterprise makes secure connections to virtual desktops via a tunnel, without requiring a heavy client, third-party products or product modules with additional costs. ⁽³⁾

User access from any web browser and OS without requiring client software via connection plug-ins or using RDP via HTML5. ⁽³⁾

⁽³⁾ The data, documents and content managed at the graphic stations is generally of high value to the company, which means that it is susceptible to being stolen. Therefore, the loss or deterioration of this data is a big problem. Virtualizing the graphic station and connecting to it remotely allows the data managed at these graphic stations to be hosted on the CPD, a secure environment, isolated and provided with established backup and recovery procedures and policies to face disasters. It will also permit the design of virtualized graphic station farms at different locations, even in different countries, so that connection to the graphic stations will be made according to criteria such as connection lag time, available bandwidth, location of the user requesting the connection, etc.

Unlimited configuration possibilities. UDS Enterprise incorporates an additional module management system and the definition of configuration variables on two levels:

- Definition of configuration variables at system level ⁽⁴⁾
- Definition of independent module configuration variables ⁽⁴⁾

Possibility of tool personalization for each client via customized development in a simple, quick and efficient manner. ⁽⁴⁾

Easy integration with third-party software. ⁽⁴⁾

⁽⁴⁾ Thanks to these functionalities, with UDS Enterprise you can design virtual graphic station platforms that enable:

- *Deployment at different locations in the world, allowing connection to itinerant users*
- *Integration with different graphic software deployment tools and models in production*
- *Deployment on different virtual platforms according to the connection protocol, resource usage and applications to run*

Support and professional services

Virtual Cable sells UDS Enterprise through a subscription model based on the number of users, including product support and updates.

Additionally, Virtual Cable offers professional services to install and configure UDS Enterprise.

For further information visit www.udsenderprise.com or email us at info@udsenderprise.com

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