

Parallels® Workstation Extreme

Customer Success Story

The Landscape

Talisman Energy Inc. is a global, diversified, upstream oil and gas company, headquartered in Canada, with operations across North America, the North Sea and Southeast Asia. The company's broad portfolio of international exploration opportunities is a significant part of its overall business strategy for profitability and long-term growth.

The pursuit of these high-impact international exploration opportunities relies on the use of advanced, graphics-intensive geophysical software, such as the Schlumberger GeoFrame and Petrel solutions. GeoFrame provides geological and geophysical data analysis and interpretation capabilities; while Petrel enables users to create accurate, high-resolution geological models of reservoir structure and lithologic properties.

Relying on this kind of software presents a complication for the geoscientists in Talisman's Exploration department as they run on different platforms: GeoFrame runs on Linux, while Petrel is Windows-based. This is not unusual in the geosciences field, which has been demanding support from the latest and most powerful technologies available for decades. It is only in recent years that the Windows platform has been able to provide the required levels of performance for high-end graphics-intensive applications. These advanced applications had originally been developed for UNIX environments and were later ported to the Linux platform.

For Talisman's Exploration team, this has meant each geoscientist needs to run two workstations: one dedicated to their Linux-based applications and one for their Windows-based software. Alternating between two computers is cumbersome and time-consuming, and more significantly, supplying each engineer with two workstations is an expensive practice for the company. Yet this has long been the norm for Talisman Energy and many other businesses facing a similar challenge.

Exploring the Options

Leading oilfield services provider, Schlumberger, has worked closely with its technology partners as an early adopter to address this issue for their customers. As such, they performed extensive testing of Petrel and GeoFrame on a single workstation before suggesting Talisman try Parallels® Workstation Extreme: a powerful, next-generation virtualization platform that gives end-users dedicated graphics and networking resources for both host and guest workstation environments. This would enable each of Talisman's Exploration geoscientists to run their two separate platforms on one high-performance workstation without sacrificing performance of their graphically-intensive applications.

Scott King, Manager of Geoscience Information and Applications for Talisman Energy, had previously dismissed using virtualization to consolidate Talisman's workstations because: "Typically virtual machines do not perform well when it comes to graphics." However, he realized Parallels® Workstation Extreme was far ahead of any other workstation virtualization solution in terms of graphics performance once he saw it working.

"I don't see any measurable difference in the performance of our high-end graphical applications running in the virtual machine compared with those running natively on the hardware. With Parallels® Workstation Extreme the performance really does feel native. To see it working is to believe!"

Parallels® Workstation Extreme was developed specifically with this capability in mind. It is the first workstation virtualization solution to support Intel Virtualization Technology for Direct I/O (Intel VT-d) – meaning physical devices can be dedicated to virtualized environments for full acceleration (versus the emulated capabilities typically offered in desktop/workstation virtualization solutions). When combined with hardware support

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"With Parallels Workstation Extreme the performance really does feel native... It's absolutely the way to go for anybody that needs to run multiple graphics-intensive applications on more than one operating system."

— Scott King, Manager of Geoscience Information and Applications for Talisman Energy

for NVIDIA Quadro graphics cards and gigabit networking cards, this powerful solution set delivers near-native performance for resource-intensive and graphics-intensive applications.

In performance testing conducted by Schlumberger, the Schlumberger GeoFrame and Petrel applications were run on a single workstation running both Windows Vista 64-bit (on the host) and Red Hat Enterprise Linux 5.3 (on the guest). Both applications ran at full native speed, with graphics refresh rates of 30 frames per second. Russ Sagert, GeoScience Technical Advisor for Schlumberger North America, reported: "Our engineers were blown away by the performance."

Sagert continued: "With Parallels® Workstation Extreme users can run both Windows and Linux on a single workstation at the same time, seamlessly, with one keyboard and one mouse. The configurability of monitors, memory (RAM), and processing (CPU cores) means users can manage the available hardware resources for the workflow needed. This solution significantly simplifies the desktop for users' day-to-day data interpretation and modeling needs."

The advanced performance of Parallels® Workstation Extreme applies not only to graphics, but also to networking. As well as assigning a dedicated graphics card to both host and guest, Talisman is able to take advantage of the VT-d networking capability. This means a dedicated network interface can be assigned to the virtual machine, so the gigabit networking connection does not need to be shared, each workload can have its own dedicated resources.



Modeling for Success

Impressed with his initial experience of Parallels® Workstation Extreme, King decided to run a trial with the Geoscience Application Support team in the company's Calgary, Canada headquarters. Brad Peers, Team Lead for Geoscience Application Support team, headed up the project and was very pleased with the results.

"Put simply, we have high-end graphics-intensive applications we want to run on two different platforms and with Parallels® Workstation Extreme we can run them on one machine. Talisman's Exploration teams can now standardize on a single HP Z800 Workstation with NVIDIA Quadro FX 4800s for each geoscientist, rather than our two-machines-per-user model previously in place," explained Peers.

"This has resulted in a very significant saving in hardware investment of approximately 40%. Although each workstation configuration that we buy for the Exploration team now works out slightly more expensive, we only need to buy half the number. It's clear that we have considerably increased the IT efficiency of the Exploration department," added King.

Talisman has also experienced significant benefits in terms of simplifying the IT support requirements of the Exploration team. As the company has a Windows-based IT organization, it was not straightforward for the IT team to maintain the team's Linux-based machines. Now they can use Parallels® Workstation Extreme and deploy Linux as the guest OS running on Windows-hosted workstations, which simplifies support

Industry:

Oil and Gas

URL:

<http://www.talisman-energy.com/>

Challenges:

- Exploration team having to run both Windows and Linux-based applications
- Traditional virtualization solutions unable to provide required level of high-end native graphics performance
- Resulted in each engineer running two workstations

Solution:

- Parallels® Workstation Extreme with support for Intel VT-d for full GPU acceleration
- Standardize on HP Z800 Workstations with NVIDIA Quadro FX 4800s
- Dedicated graphics and networking cards for both host and guest environments

Benefits:

- 40% savings on hardware investments
- Near-native performance for high-end graphics-intensive applications
- Streamlined IT support and management

Configuration:

- HP Z800 Workstation with NVIDIA Quadro FX 4800s
- Parallels® Workstation Extreme
- Schlumberger GeoFrame running on Red Hat Enterprise Linux 5 Update 3 (Guest VM)
- Schlumberger Petrel running on Microsoft Windows Vista 64 (Host)

and deployment for IT. As an added bonus, the integration between host and guest OS provided by Parallels® Workstation Extreme improves efficiency of the geoscientists using these systems.

With these benefits realized, King and Peers decided to roll out the new workstation configuration – enabled by Parallels® Workstation Extreme – in all three of their new offices. Just two months after the initial trial, the package was deployed for Talisman's Exploration team in Bogotá, Colombia. Further implementations were rolled out throughout the following summer for teams in Pittsburgh, PA and Brisbane, Australia.

The new package has streamlined the process of getting the necessary hardware for the Exploration team. Traditionally the Windows systems deployed across the company are all the same standard, regardless of the business function of the user. With the Exploration team's specialist needs and increasingly powerful Windows-based applications, getting the configuration they needed could be complicated and time-consuming. Now though, they can ask for a complete all-in-one package incorporating the single HP Z800 Workstation, NVIDIA Quadro 4800s, Parallels® Workstation Extreme, Schlumberger Petrel for Windows and a GeoFrame Linux image.

Planning Well for the Future

Talisman is currently investigating deployments of Parallels® Workstation Extreme for the Exploration teams in additional offices, with the ultimate goal being to get all the Exploration geoscientists onto the new configuration, running both Windows and Linux simultaneously on one workstation. This means that as the existing machines being used by the Exploration teams around the world reach the end of their lifecycle, they will be replaced with high-end workstations certified to run Parallels® Workstation Extreme.

Contact Parallels

For more information about Parallels® Workstation Extreme, please visit www.parallels.com/extreme

Parallels offers volume licensing to business and education institutions. Please contact your local Parallels sales representative for more information or contact us directly at:

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“Once people see Parallels Workstation Extreme working, the benefits speak for themselves – people can see how the graphics run natively and they become a believer!”

– Brad Peers, Team Lead for
Geoscience Application Support team

“This has resulted in a very significant saving in hardware investment of approximately 40%.”

– Scott King, Manager of Geoscience
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