

Is VDI Ready for Broader Adoption?

The new Dell EMC VDI Complete solution makes VDI much simpler to adopt and delivers unique single vendor support

Executive Summary

Virtual Desktop Infrastructure (VDI) has lagged versus early expectations of broad adoption for almost a decade. Its potential to reduce costs and better secure enterprise data is quite clear, yet lack of predictability of costs, performance issues, and complexity from deployment to support have gated broader enterprise adoption.

Vendors of the various hardware and software components required to deliver a full VDI stack have made efforts to tackle these challenges. OEMs have long offered solution bundles that simplified customer decision-making for initial deployment, but those fell short of addressing the management and support challenges of working issues post-deployment. Software vendors have made substantial progress in improving performance to the point where the user experience is vastly improved. However, it has still been tough to project the hardware infrastructure needed to deliver a reliable user experience across a variety of deployment scenarios, particularly as the solution needs to scale up to address more users. Worse, whenever an IT team managing their VDI solution has run into issues, they have had to work them via the support arm of multiple vendors in a stack where it can be difficult to arbitrate what component(s) is causing a functional, performance, or stability problem.

It was only a matter of time until a single OEM hardware vendor could consolidate a full end-to-end offer addressing these enterprise IT challenges with VDI. In this brief, we take a look at Dell EMC's new VDI Complete solution that takes the distinct step of combining a complete hardware infrastructure and software stack into a fully validated offering that is priced, delivered, and supported by a single global enterprise vendor in order to greatly simplify VDI adoption and use.

Deployment and Management

The first question for IT in considering a VDI solution is whether they can handle the implementation and ongoing management work. VDI delivery requires a complete compute, network, storage, and application stack addressing a unique workload profile in the enterprise application portfolio, particularly in its user-driven spikes in network and storage infrastructure resource consumption. VDI is a critical-to-productivity but non-differentiating workload, so IT wants it made as simple to deploy and manage as possible to minimize the need to build up staff expertise and time spent administrating it. For example, when describing the VDI deployment for high performance applications at the [Oregon State College of Business](#), Alan Sprague explains, "The fact that I've been able to set it and forget it is huge, because I didn't have time to futz with it... I had to be able to fire it up, turn it on, and go."

Dell EMC VDI Complete bundles hardware components and software that is pre-validated and packaged for ease of deployment planning and management up to the VDI application stack using normal VMware management tools. Other OEM VDI bundles are available that are tested across vendors to a profiled performance level, but once the stack is deployed, there is no one OEM vendor who can address any customization needs and stand behind what is deployed. Now Dell EMC is set up to work from bundles into any necessary customization and provide single vendor support of the end-to-end stack via one phone call. Anyone who has bet significantly on an IT system and called into vendor support only to end up with multiple vendors pointing fingers at each other knows the value of a single vendor supported solution in these situations.

Performance

Another common challenge in VDI projects has been the end user experience. Users could see lags in getting started in their work sessions, for example when starting their virtual desktop at the beginning of the day, and/or in their application experience during their work when working remotely across a network connection with highly variable latency.

Addressing Environment Startup

A lag in a user getting started in their virtual desktop environment can be driven by a combination of hardware infrastructure performance limitations and software implementation that taxes the hardware sub-optimally with significant spikes in network and storage resource utilization versus a much lower steady-state consumption level. This can, in turn, also risk impact to the experience of other users already engaged in their work session.

Dell EMC's VDI Complete offering is designed to address the hardware infrastructure performance aspects of this first risk of user experience lag via the solution bundles. They come pre-configured and tested as scalable units of predictable performance using Dell EMC VxRail or vSAN ReadyNode appliances and VMware vSAN. The software aspects of this type of lag have been addressed by top vendors, including VMware and Citrix as the clear leaders in the space [according to IDC](#). The technology has progressed from all or nothing storage of a user's desktop environment all the way to dynamic, near-instantly available user desktop generation by layering a fully-configurable, user-specific application stack and management policy on a base image. This improvement better normalized and reduced the consumption of infrastructure resources per VDI user added for better performance and user experience.

Addressing Network Latency

The second issue with user experience lag from network latency variability typically results from a remote session at significant distance, for example, across the continent, or with a shared connection, for example, in a coffee shop. This has been substantially addressed by the leading VDI software vendors via adaptive transport capabilities designed to tolerate network latency variability to improve user experience across this

variety of network conditions. This has also broadened the range of applications where VDI can be applied to more performance-sensitive applications. In the case of [ATS Automation](#), Senior Systems Administrator, Drew Kemp provided their example where “From no one wanting to use VDI, we’ve evolved to now everyone wants it, and they are happy. It enabled our remote workers to do something they couldn’t reliably do before. It really improved their ability to work with performance-hungry apps.”

Addressing these performance challenges impacting user experience is critical to IT delivering VDI successfully and building organizational confidence allowing the broadening of the solution across more departments. Dell EMC offers solutions with software from both Citrix and VMware, but their VDI Complete bundle is specific to VMware Horizon as the only configuration where they offer their consolidated support of the full VDI solution themselves.

Planning and Purchase

Planning a VDI project has been a challenge due to the complexity of predicting costs. Too often, uncertainties in the performance of a multi-vendor hardware and software stack implied benefit in deploying at significant enough starting scale to ensure a good user experience for initial target departments and allow some capacity headroom to address additional departments after building organizational confidence. That meant selling a big upfront business case for a large-scale rollout on the promise of future operational efficiency gains. This turned out to be a significant risk to planned return on the investment when implementation and performance challenges were further complicated by a multi-vendor support structure that could all too easily recommend purchase of more resources of their individual components to address issues.

This is where the Dell EMC VDI Complete solution is especially compelling in its simplicity. The bundles are pre-configured and pre-validated as scalable units of predictable performance – and therefore predictable cost – backed by the support of a single enterprise vendor. The bundled stack is packaged as a scalable unit for ease of growing the deployment size with business needs. This keeps the incremental purchase and implementation costs clear. The consolidation to a single vendor has also enabled a simple, predictable monthly pricing model for as little as \$8 per user as an additional option versus the typical upfront prepay model. Plus, when looking to deploy thin clients with VDI, Dell Wyse endpoints can be optionally added as part of the package in staying with a single vendor. The full breakdown of monthly priced bundles is shown in Figure 1.

Dell EMC has now further enabled a best practice approach to VDI projects for IT in starting small, building confidence, then scaling the deployment for better project risk management. In the example of [Rent-A-Center](#)’s use of Dell EMC plus VMware for VDI, Director of Technical Operations, Mike Conroy explains, “I can deploy this to users for a very economical per user cost. More importantly it’s sustainable going forward... I have a repeatable process I can go to, and say, ‘I want to expand this from 1000 to 1500 users. Here’s exactly how much that is going to cost. Here’s exactly how long that’s going to take.’”

Figure 1: Dell EMC VDI Complete Monthly Pricing Bundles

	BUILD <small>with Validated Solutions on Dell EMC vSAN ReadyNode</small>		BUY <small>Turn-key Solutions on Dell EMC VxRail</small>		SMB- Small footprint
Configuration	Essentials	Expanded	Essentials	Expanded	Starter
Hardware	PowerEdge R630 <ul style="list-style-type: none"> 2 x Intel 2660 processors 384 GB RAM 6 x 2TB HDD 3 Nodes Standard 3 Year Support 	PowerEdge R730 <ul style="list-style-type: none"> 2 x Intel 2698 processors 512 GB RAM 14 x 2TB HDD 4 Nodes Standard 3 Year Support 	VxRail E Series <ul style="list-style-type: none"> 2 x Intel 2660 processors 384 GB RAM 4 x 2TB HDD 3 nodes Standard 3 Year Support 	VxRail V Series <ul style="list-style-type: none"> 2 x Intel 2698 processors 512 GB RAM 6 x 2TB HDD 4 Nodes Standard 3 Year Support 	VxRail E Series <ul style="list-style-type: none"> 1 x Intel 2609 processors 128 GB RAM 2 x 2TB HDD 3 Nodes Standard 1 Year Support
Horizon Software (Dell OEM Products)	VMware Horizon Advanced Edition Named user licensing Standard 3 Year Support	VMware Horizon Enterprise Edition Named user licensing Standard 3 Year Support	VMware Horizon Advanced Edition Named user licensing Standard 3 Year Support	VMware Horizon Enterprise Edition Named user licensing Standard 3 Year Support	VMware Horizon Advanced Edition Named user licensing Standard 3 Year Support
Price/Month** (varies with # of total users)	\$8 per user <small>Price assumes ~600 users</small>	\$13 per user <small>Price assumes ~800 users</small>	\$12 per user <small>Price assumes ~600 users</small>	\$18 per user <small>Price assumes ~800 users</small>	\$16 per user
Thin Client Add-ON Price/Month	Wyse 3040 Thin Client - \$5/user/month (ThinOS) Wyse 3030 Thin Client - \$9/user/month (Windows) Wyse 5060 Thin Client - \$11/user/month (Windows 10) OptiPlex 3050 i3-7100T; 4GB;500GB - \$12/user/month (Windows 10) OptiPlex 5050 i5-7500T; 8GB; 500GB - \$17/user/month (Windows 10)				

(Source: Dell EMC)

Call to Action

Dell EMC’s VDI Complete signals that it is time for a revisit of the VDI opportunity in enterprise IT. VDI Complete’s value in simplicity eases VDI deployment execution according to best practices of starting small with departments carefully targeted based on their device use and infrequency of travel then scaling out. There is no longer a forced need for selling a big upfront business case and working across a set of hardware and software vendors on cost planning and support at each step of growth or technical challenges involving support.

While VDI Complete from Dell EMC is compelling, alternatives could be considered involving a bundle from an alternative OEM and/or use of different VDI software. For the hardware stack, choosing an alternative OEM for purposes of preference of a specific vendor’s hardware or potentially lower price would involve a significant tradeoff in the simplicity of the single-vendor cost predictability and consolidated support across the deployment, management, and performance aspects of successful implementation. For the software stack, Dell EMC itself offers similar VDI solution stacks supporting Citrix-based VDI deployment, which could be of interest in organizations that highly value specific capabilities available from Citrix. It will just be tough for the value of different feature capabilities to override the value of the consolidated single-vendor offer and support package from Dell EMC with VMware Horizon.

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