



vmware®



## Client Virtualization: No Longer a Storage Guessing Game

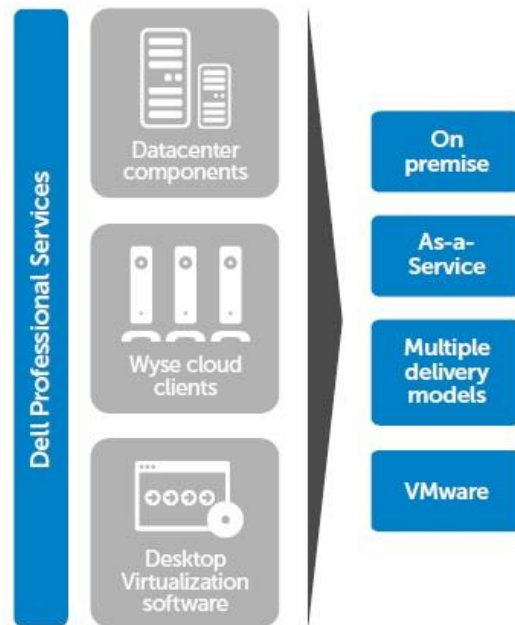
Virtual SAN and Virtual SAN Ready Node solutions for VMware Horizon from Dell

### Client virtualization guessing game

While most people can tell whether they're getting a good deal on a gallon of milk or a new car, sizing a virtual desktop infrastructure can still be a challenge, even for seasoned IT veterans. With so many options to choose from in terms of server and storage infrastructure, hypervisor and connection broker software, and thin or zero client endpoints, picking the right solution for a virtual desktop environment can be daunting. Often companies over spend or under configure as their user base expands or new product lines require additional resources. Fortunately, Dell along with VMware and Intel®, has designed several end-to-end solutions that take the guesswork out of client virtualization.

There are several approaches that we have carefully designed to ensure your solution is right for your business. From reference architectures to hyper-converged infrastructure appliances, our co-developed solutions allow you to right-size your client virtualization environments and not

spend more than you have to in the short term or as you scale. Let's examine how VMware based do-it-yourself reference architectures and Dell streamlined appliances powered by Intel® Xeon® processors differ in resolving your specific needs.



Intel Inside®. Powerful Solution Outside.

### *What is VMware Virtual SAN?*

VMware Virtual SAN is a hyper-converged storage solution that delivers a simple, elastic and efficient storage solution optimized for virtual machines or desktop virtualization.

- Storage **scale out** architecture embedded in vSphere
- Aggregates locally attached storage from each ESXi host in a cluster
- **Dynamic** capacity and performance scalability
- High performance with **flash acceleration**
- Deeply integrated with VMware stack
- Managed through **VM-centric** storage policies and vSphere Web Client

## Wyse Datacenter for VMware Horizon reference architectures from Dell

Dell's Cloud Client-Computing team approaches reference architectures differently than other technology integrators. Our goal is to provide the best solution possible while making the migration to virtual desktops as easy as possible. Our Wyse Datacenter engineers provide complete instructions on design, best practices on implementation, sizing, scale and performance expectations. These reference architectures are shortened to include the most streamlined information to make them easier to consume.

Our Wyse Datacenter for VMware Horizon reference architectures are based on Intel® Xeon® processor-powered 13G PowerEdge x86 servers. They include recommendations for virtualized graphics, software-defined-storage and Wyse endpoints. With VMware's Virtual SAN virtualized storage, included in vSphere and Horizon Advanced and Enterprise client virtualization software, right-sizing virtualized storage can be realized.

VMware's Virtual SAN Ready Node certification program is a converged infrastructure certification program akin to a Microsoft approved hardware list. It allows organizations to submit very specific hardware and software configurations that meet application mix and workload requirements for optimal Virtual SAN performance. We are leveraging the certification program to create specific reference architecture solutions that are VMware Virtual SAN based. Our configurations are certified and validated by our Cloud Client-Computing and VMware engineers. Our Virtual SAN Ready Nodes include configurations on the Intel® Xeon® processor-based 13G PowerEdge 13G servers.

VMware certifies and verifies our configurations of hardware-based converged infrastructure, and our best practices, scale, sizing and configuration guidance reduces the unknown factors and guessing of client virtualization implementation. Our reference architectures based on Virtual SAN Ready Nodes include several benefits:

**Converged infrastructure:** Our reference architectures for Virtual SAN offer a converged infrastructure approach. These carefully engineered solutions are hardware focused and include compute, storage and networking guidance for ultimate flexibility. While software guidance is also included but not installed or automated in the delivery model, reference architectures do include best practices for installation and configuration to achieve an ideal outcome.

**Ultimate customization:** Our open source approach allows organizations to incorporate recommended offerings into current infrastructure. As long as existing hardware meets a baseline standard, you have the ability to leverage that hardware within the recommended

solution. This can result in significant CapEx savings as existing hardware such as a SAN or network attached storage (NAS) is incorporated rather than abandoned.

**Scale to meet your needs:** Our reference architecture model allows your IT team to scale the solution to meet your exact requirements, wherever you are in the adoption cycle. From small or proof-of-concept deployments to full-scale roll-outs for thousands of users, these architectures provide the necessary guidelines for smooth deployments. With the best practices, sizing and scale guidance included, a very good idea of exactly what compute, storage, and networking is achieved while minimizing the risk of over-procuring or under-provisioning. This allows you to simplify your solution and provide the best possible user experiences and results with your client virtualization implementation. In addition, enterprise IT departments can seamlessly add more Wyse endpoints and provision or spin up new virtual desktops quickly and efficiently.

#### ***Dell's reference architecture and appliances***

Whether you need an environment built to your specific requirements, one that can incorporate your existing storage investments, or a rapid time-to-value appliance enabling simplified deployment, installation and scale, Dell has the VMware certified solution to meet your needs:

- Reference architectures include guidance for best practices on sizing and performance expectations in a simplified fashion
- Appliances provide streamlined procurement with compute, storage and software included, linear scale and prescriptive performance
- All are tested, validated and certified for optimal performance and backed by Dell's world class support and services

## **VMware Virtual SAN Ready Nodes appliance model from Dell**

In addition to the reference architecture model, Dell, VMware and Intel® have also co-developed an appliance based path to adopting desktop virtualization. Hyper-converged infrastructure (HCI) appliances provide "complete client virtualization," within a single server chassis that combines compute, storage, networking, software, and management elements in one integrated Dell I PowerEdge 13G R630, R730 or R730XD servers powered by Intel® Xeon® processors. From design to procurement, installation to management, our Virtual SAN Ready Node appliances are designed for simplicity of use to shorten the interval from unboxing to up-and-running. The adoption, scale, indeed the complete solution are all achieved with ease.

**Easy adoption:** Traditional design, procurement and proof-of-concept processes for a desktop virtualization environment can take up to nine months. Our appliances are ordered and procured through a single SKU for pre-certified specific configurations. This eliminates the need for long lead design phases or tentative proof-of-concepts. Whatever your density and performance requirements may be, a Virtual SAN Ready Node appliance is available to ease the transition into client virtualization. Finally, with automated installation and virtual machine deployment, getting the environment stood up is simple. Our appliances eliminate much of the complexity and need for in-house expertise traditionally required by many virtualization solutions. IT staffers with limited experience in configuring and managing PCs can now deploy a client virtualization environment in just minutes. The rapid time-to-value and simplified deployment enable easy adoption of client virtualization.

**Efficient scalability:** As your business needs evolve, our HCI appliances allow you to scale your virtual environment in a predictable, modular fashion. Our Virtual SAN Ready Nodes with VMware Horizon Air Hybrid Mode appliances allow you to scale linearly and achieve predictive performance results. Virtualized desktops or apps can reside on-premise or in the cloud, and all managed through Horizon Air Hybrid Mode's cloud-based management tool. If additional on-premise virtual desktops are necessary, simply add the necessary nodes and licenses. If additional virtual client sessions are required, simply add additional subscription based Horizon Air Hybrid Mode licenses. The guesswork is taken out of storage and compute sizing the appliance is configured for recommend user densities and workloads, with results provided. Each client virtualization session performed performs the same, from the first to the last.

**A true end-to-end solution:** Our Virtual SAN Ready Node appliances can be purchased individually, as a stand-alone infrastructure or for enhanced security and flexibility, as part of a comprehensive end-to-end solution that includes validated Wyse thin or zero clients, management software and Dell Services. In the latter configuration, Wyse Device Manager (WDM) provides a centralized, single pane-of-glass endpoint management resource. Our PowerEdge management tool plug-ins integrate with VMware vCenter to streamline the management of your client virtualization environment. Given our range of Wyse endpoints for task workers, knowledge workers, or sophisticated design professionals, the solution can support any number of use cases and is agile and powerful enough to address your users' own specific needs.

## Conclusion

Taking the guesswork out of client virtualization is another example of how Dell and VMware offer simple solutions to potentially complex tasks. We are working to reverse the long-held perception that client virtualization is costly and complex. Our vastly simplified end-to-end, comprehensive client virtualization solutions are powered by our latest 13G PowerEdge servers powered by Intel® Xeon® processors. Combining these powerful, scalable server platforms with VMware Horizon and Virtual SAN software allows you to craft a client virtualization solution that meets your business and budget requirements.

Whether the best option for your organization is an appliance that can be deployed in minutes and managed in-house, or a more flexible do-it-yourself reference architecture that allows your organization to leverage your existing infrastructure, we are committed to providing the most efficient, effective and complete client virtualization solution.

