

DELL VALIDATED SYSTEM FOR VIRTUALIZATION BRINGS INTELLIGENT AUTOMATION TO LIFE

EXECUTIVE SUMMARY

For more than a decade, server virtualization has increased datacenter efficiency, allowing IT to save money and improve productivity. However, even in virtualized environments, many IT organizations find themselves with infrastructure that is significantly underutilized, as the available resources do not always match the needs of each application. Converged systems have emerged as a category of solutions that combine server, networking, and storage under a unified management plane.

Converged systems can help IT simplify operations and reduce costs through more efficient use of resources. Moor Insights & Strategy (MI&S) believes converged systems will undergo an inflection point called **service-defined infrastructure**. Service-defined infrastructure has the potential to improve efficiency for the entire value chain.

Dell believes intelligent automation is central to service-defined infrastructure and has invested significantly in this area with Dell Active System Manager and Dell System Builder. This paper explores how the [Dell Validated System for Virtualization](#) uses Dell Active System Manager and Dell System Builder to improve efficiency for virtualized environments throughout the process: configuring and ordering infrastructure, deploying and scaling resources, and ongoing system management for the entire product lifecycle.

MARKET TRENDS

Server virtualization is pervasive in enterprise IT and provides many benefits including faster server provisioning, resource consolidation, and better alignment of infrastructure to application needs. Despite these benefits, virtualized environments still experience significant underutilization, as the available infrastructure (compute, network, storage) does not always match the needs of each workload. Large IT organizations often have millions of dollars of underutilized infrastructure in their datacenters, yet they still require additional servers, networking equipment, and storage to keep up with business growth.

Over the last several years, converged systems have allowed IT to manage compute, network, and storage resources under one umbrella. Converged systems provide a path toward better resource allocation, as IT has a consolidated view of what infrastructure is available. MI&S sees **service-defined infrastructure** as the next inflection point for IT

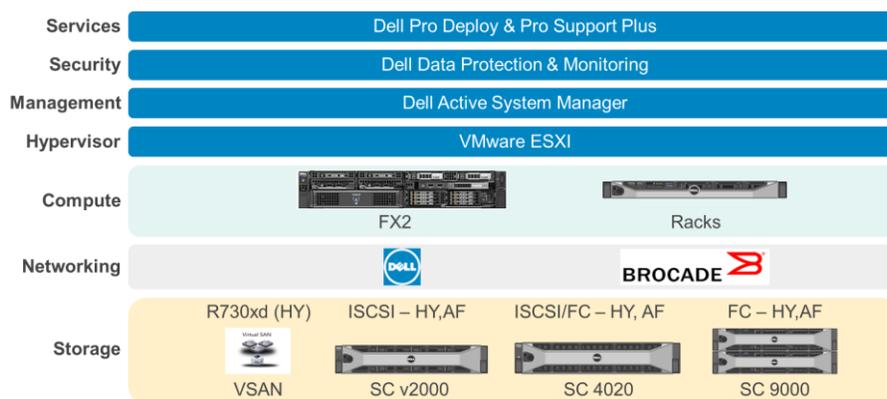
to reduce costs and improve productivity through improved overall efficiency. With service-defined infrastructure, IT can dynamically provision (and re-provision) all resources to keep up with user requirements, provide support for continuous operations, and adhere to consistent end user service levels. Service-defined infrastructure will allow IT to get new mission-critical services up and running faster, utilize resources more efficiently, and improve ongoing service quality for the entire lifecycle of the service. We outline the key elements of service-defined infrastructure in our paper [here](#).

MAKING DELL INTELLIGENT AUTOMATION COME TO LIFE

Dell believes [intelligent automation](#) will be critical to service-defined infrastructure, and the company is investing to differentiate in this space. Dell System Builder and Dell Active System Manager are the enablement vehicles for Dell’s intelligent automation strategy for converged systems. We will look at the recently launched the Dell Validated System for Virtualization as an example of how customers can use intelligent automation to create tailored integrated systems, then deploy, scale, and manage a workload-optimized virtualized environment.

The Dell Validated System for Virtualization is a VMware-based solution designed for workloads like custom-built applications, OLTP databases, web servers, and decision support systems. Dell is targeting customers who want to create a tailored, integrated system that has been tested and validated, provides flexible deployment choices to respond to business needs, and maximizes infrastructure ROI by scaling as needed and repurposing on demand. The Dell Validated System for Virtualization is a modular converged system with blocks of compute, networking, and storage with configuration choices for each block. Figure 1 outlines the entire solution stack.

FIGURE 1: DELL VALIDATED SYSTEM FOR VIRTUALIZATION SOLUTION STACK

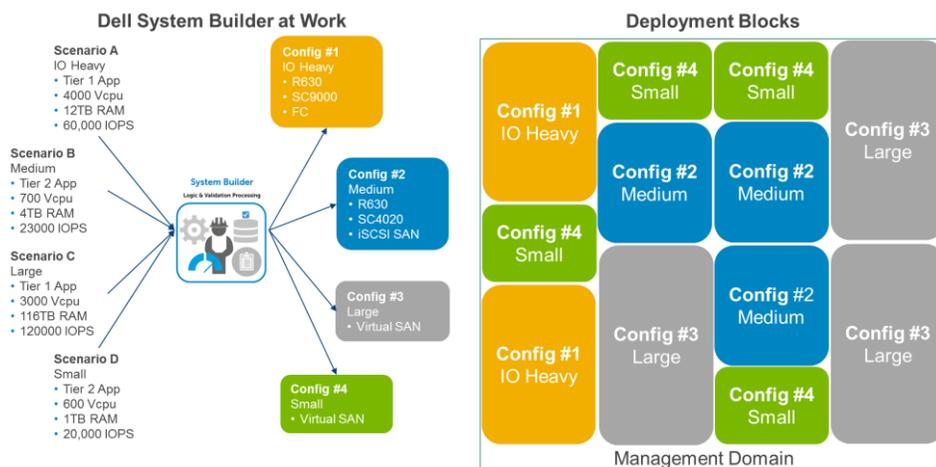


The Dell Validated System for Virtualization can take advantage of Dell System Builder and Dell Active System Manager for intelligent automation. Dell System Builder and Dell Active System Manager allow customers to scale resources, streamline the deployment process, and improve resource availability for the lifecycle of the service. Dell System Builder allows Dell sales teams and channel partners to work with customers to identify the right system configuration based on workloads, operating profile, system preferences, deployment size, and other specific optimization considerations. Dell Active System Manager serves as Dell’s unified automation and orchestration control point for converged systems and can be used for automated provisioning of resources, service level monitoring, and integration with third-party system management solutions.

SCALING INFRASTRUCTURE RESOURCES

Using Dell System Builder, Dell sales and partners can work with customers to answer a series of questions to help create the ideal configurations for their workloads. As shown in Figure 1 above, the Dell Validated System for Virtualization includes choices for each infrastructure block (compute, network, storage). The configurations defined in Dell System Builder can be used to create a Validated System for Virtualization sized for specific workloads in the customer’s environment. Each system is a self-contained, balanced set of compute, networking, and storage resources that can be sized proportionately based on the customer’s requirements. As customers require more infrastructure, resources can be scaled individually or together. Figure 2 illustrates how customers can grow their infrastructure over time by designing configurations tailored to the specific needs of their workloads.

FIGURE 2: DEVELOPING CUSTOMER-DEFINED SCALABLE UNITS FOR DELL VALIDATED SYSTEM FOR VIRTUALIZATION



Once the system is configured, Dell Active System Manager (ASM) allows customers to manage, scale, and repurpose these blocks from a single management console. As customers deploy new infrastructure, Dell ASM adds to the available resource pool for allocation. Since the system is configured to use resources more efficiently, IT should be able to buy resources in smaller chunks, because fewer resources are wasted, and additional infrastructure can be deployed quickly and as needed.

INCREASED EFFICIENCY & AVAILABILITY WITH ASM

Dell ASM provides a single console for self-service of both virtual and physical resources with system deployment templates that speed the process and reduce errors. Principled Technologies [claims](#) it takes 96% less IT administrator time (22 seconds vs. 12+ minutes) and 94% fewer steps (8 vs. 141) to deploy a VMware cluster with Dell ASM than HPE OneView. While this metric was achieved using a different set of infrastructure, we would expect similar savings can be realized with the Dell Validated System for Virtualization. Workloads can be provisioned as needed, scaled up when required, and scaled down when not. ASM also allows infrastructure to be repurposed across multiple workloads, making it easier for IT to react to changing demands.

Once the resources are deployed, ASM provides ongoing lifecycle management to ensure the infrastructure and services remain in good health. ASM provides service level monitoring which looks at key health attributes to help enable fast time to problem resolution. For example, ASM performs firmware compliance monitoring across servers, switches, and storage to help reduce errors and improve availability. When users no longer need the deployed services, the resources can be returned to the pool for re-allocation, providing a more efficient use of available resources.

DELL PARTNER OPPORTUNITY

Dell has historically leveraged its supply chain strength to offer build-to-order systems for its customers. While this flexibility was originally focused on PCs and client devices, Dell extends this capability via Dell System Builder to enterprise solutions. Dell channel partners and sales teams are critical for making Dell intelligent automation possible. Dell System Builder provides a way for partners to build Dell validated systems and offer recommendations to their customers very quickly without having to be experts in all of the validated system configurations. Figure 3 shows a few of the questions asked during the process of determining the right configuration. Figure 4 provides an example of an optimized configuration for the Dell Validated System for Virtualization.

FIGURE 3: CONFIGURING A SYSTEM BASED ON CUSTOMER NEEDS

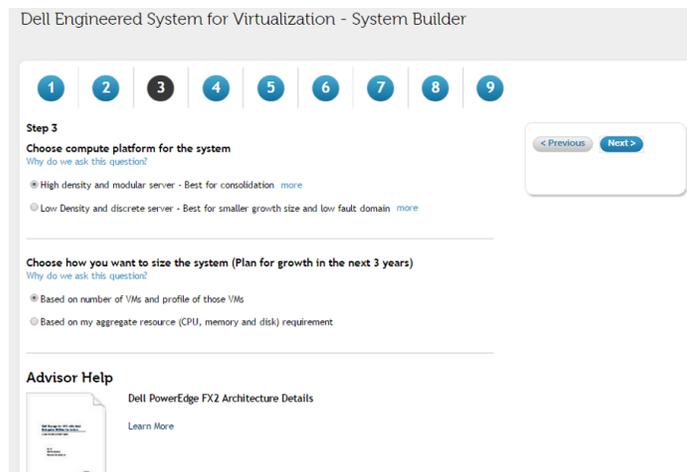
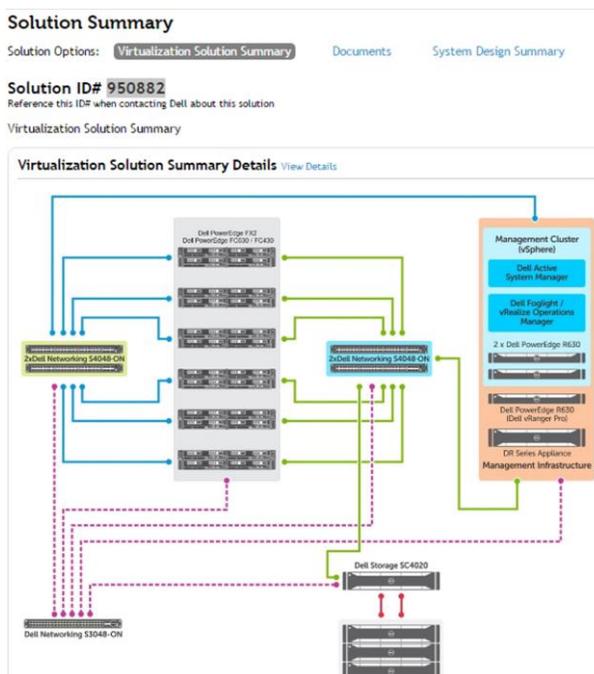


FIGURE 4: DELL SYSTEM BUILDER SOLUTION SUMMARY EXAMPLE



Dell System Builder integrates into the Dell backend ordering system to help partners respond quickly and ensure the system is ordered correctly. Dell also offers multiple deployment options for the Dell Validated System for Virtualization: customers can deploy the system themselves, have a partner build the system, have Dell integrate the system before it arrives at the customer site, or have Dell integrate the system on-site.

CALL TO ACTION

Dell has the foundational elements for intelligent automation with Dell System Builder and Dell Active System Manager. These intelligent automation tools as applied to the Dell Validated System for Virtualization have the potential to improve deployment, flexibility, resource allocation, and ongoing management for customers with VMware environments. In the future, we expect Dell to extend intelligent automation capability further with the addition of more third-party / non-Dell system configurations, enhanced allocation capabilities at the applications layer, and more sophisticated resource allocation as the company brings to market composable infrastructure solutions. In addition, we expect automated system configuration capability (via Dell System Builder or another tool) to be made directly available to customers in the future.

Enterprise customers looking to optimize their virtualized environments with more efficient use of infrastructure resources should evaluate the Dell Validated System for Virtualization. In addition, customers should talk to Dell about the specific capabilities of Dell ASM to better understand if it can ease deployment, improve allocation of resources, and simplify ongoing systems management.

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