



Rapid virtualization deployment for private clouds

By Marc Stitt and Deepak Kanwar

Many IT decision makers are stepping up virtualization efforts to cost-effectively pave the way toward a private cloud. Dell™ vStart virtualization offers a pre-integrated, wired, and ready-to-deploy infrastructure designed to be up and running quickly.

The journey to the cloud often begins with consolidation and virtualization as first steps along an evolutionary path. This approach facilitates expedient migration and deployment of tier 1 applications including messaging, enterprise resource planning, online transaction processing (OLTP) databases, and so forth. A virtualized environment for these types of applications enables IT organizations to efficiently manage operations and workloads, accurately meet service-level agreements (SLAs), and accelerate business outcomes.

Building out a virtualized infrastructure that is configured to support a production-ready application, however, may require weeks or even months before the environment is ready for test and deployment. This process also has the potential to elevate costs if diversified IT expertise is required or outside consultants are brought in to complete the project. As a result, this path to virtualization may be at odds with an organization's timeline for deploying an agile, automated

infrastructure that achieves strategic IT goals to meet business demands and control costs.

Very often these organizations are also looking to take the next step in their journey—deploying a private cloud. Private cloud computing platforms offer an elastic, scalable environment for delivering IT services quickly, flexibly, and cost-effectively to meet changing enterprise needs. As IT decision makers around the world consider a transition to private cloud computing, many organizations are wrestling with the question of where to begin.

The organizational model to fulfill business demands for applications and IT service delivery typically involves the following five recurring needs:

- Leverage the infrastructure already in place to conserve capital expenditures
- Continue to deploy virtualization as the foundation for enhanced flexibility
- Preserve existing investments in management solutions
- Endorse vendor-agnostic options for infrastructure components
- Evaluate converged infrastructure approaches to expedite service delivery

In response to these evolving needs, Dell has put in place a strategy for deploying virtualization using innovative approaches designed to address these IT demands and help pave the way to a private cloud.

Accelerating application and service delivery

For many IT organizations, a virtualized infrastructure provides the means to support new application workloads and IT projects such as enabling private cloud computing platforms. However, at the outset IT organizations may spend weeks evaluating, purchasing, and procuring the components; additional weeks to rack, stack, and cable them; and still more weeks to get those components ready for production. Even well-organized, highly skilled IT teams may require a couple of months to build the infrastructure to deploy a new application.

Dell leverages its extensive global experience and deep expertise in virtualization and infrastructure design to now offer a pre-integrated infrastructure that enables IT and business stakeholders to accelerate application and IT service delivery. Dell vStart racks and cables servers, storage, networking, management software, and deployment services. Utilizing either VMware vSphere® virtualization or the Microsoft® Hyper-V® hypervisor, organizations may rapidly deploy vStart and gain an infrastructure designed and ready to support their key IT initiatives. As a result, vStart enables organizations to focus on strategic priorities for driving enhanced business agility and delivering IT assets—not on building infrastructure. (For more information, see the sidebar, “Ready-to-run virtualization.”)

Ready-to-run virtualization

Timing can be an important factor for organizations moving toward a private cloud. Pennsylvania-based Brodart Company is one example. The provider of library solutions from shelf-ready books to electronic ordering systems and furniture was looking to time a much-needed refresh of its servers with its migration to a virtualized server infrastructure.

To help simplify the project and accelerate deployment, Brodart opted to implement the Dell vStart 100—racked and cabled with the servers, storage, networking, management tools, and services required to successfully deploy virtualization in one preassembled, validated solution. Working with Interphase Systems, a Dell Premier and VMware VIP Enterprise partner, the Brodart IT team deployed vStart based on VMware vSphere virtualization software.

According to Brad Huyck, manager of IT operations at Brodart, the organization expected a six-month phase to complete the deployment. “The Dell vStart solution came completely racked and cabled, so all we had to do was plug it in,” Huyck says. “Just four weeks after we made the purchase, we were already achieving business value. That’s about six times faster than I expected.”

The vStart infrastructure also enables virtual machines to be deployed much faster than having to first procure, rack, and configure a physical server. “We can deploy a new server at least 10 times faster now,” says Huyck.

Brodart is in the final stages of testing virtual deployments of tier 1 messaging and document collaboration software on the vStart infrastructure. “Because we can clone virtual machines and we don’t have to wait for hardware, we’ve reduced the time it takes to stage, test, and introduce new applications into our environment by 50 percent,” says Huyck. “We’re also able to provide higher availability for applications and databases once they are virtualized, because we can move workloads between physical host servers. I also like the fact that the vStart solution is modular, so we can scale easily.”

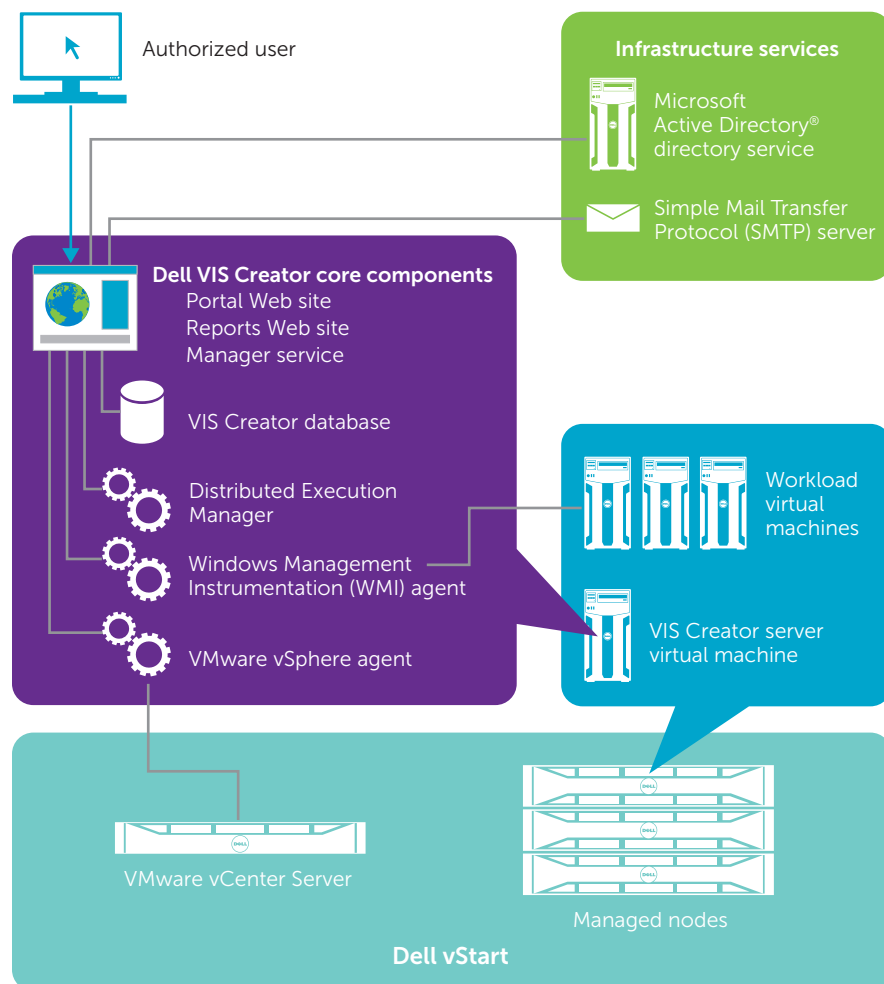


Figure 1. Dell vStart for Dell Private Cloud architecture and VMware virtualization

Optimized delivery across physical and virtual environments

The Dell Virtual Integrated System (VIS) portfolio provides software enabling organizations to leverage existing infrastructure to improve the delivery of applications and IT services across physical, virtual, and cloud environments. Organizations may deploy VIS to help improve business agility and deliver IT as a service, increase automation to enable rapid workload deployment, and optimize converged infrastructure and operations across physical and virtual environments. A VIS deployment helps organizations balance the need for enhanced agility with heightened efficiency and cost controls for internal private clouds and external public clouds.

In addition, Dell vStart for Dell Private Cloud is designed to improve business agility by enabling organizations to deploy their own private cloud through a pre-engineered infrastructure and automated self-service delivery of IT assets. Utilizing vStart and Dell VIS Creator—a component of the Dell Virtual Integrated System (VIS) portfolio (see the sidebar, “Optimized delivery across physical and virtual environments”)—vStart for Dell Private Cloud offers cloud management software, servers, storage, and networking (see Figure 1).

It also offers element-level management plug-ins—Dell OpenManage™ systems management, Dell EqualLogic™ Host Integration Tools, and Dell Management Plug-In for VMware vCenter (see the sidebar, “Centralized, end-to-end management”). This offering helps eliminate long, drawn-out processes to architect, build, and integrate virtual infrastructure—enabling quick, low-risk delivery of advanced cloud capabilities. An organization can get its private cloud up and running in days.

VIS Creator is designed to provide secure deployment and management of physical, virtual, and cloud—private, public, or hybrid—workloads by helping remove bottlenecks to speed IT service delivery and enhance business operations. Using vStart for Dell Private Cloud, which includes VIS Creator, IT organizations can benefit from accelerated deployment, enhanced efficiency, and flexible scalability.

Advancing private cloud capabilities

Faced with the prospect of architecting, designing, and configuring their infrastructure and then finding a suitable cloud computing platform, IT organizations can opt for a fast-track alternative. Dell vStart enables organizations to begin realizing the benefits of virtualization for a private cloud platform within days. By leveraging extensive Dell experience in

virtualization, organizations can deploy vStart for Dell Private Cloud, a pre-engineered and tested infrastructure designed to provide immediate access to advanced private cloud capabilities. In addition, the integrated Dell management plug-ins help simplify managing hardware and facilitating rapid assimilation.

Dell VIS Creator and vStart for Dell Private Cloud enable advanced cloud capabilities that accelerate agility and efficiency gains. These capabilities include multitenancy, self-service provisioning of assets, built-in auditing, and minimizing virtual machine sprawl.

Different groups within an organization often have diverse needs and varying skill sets, and as a result they interact with IT in different ways. Some groups may reach out to IT for desktop or application support, while others may issue requests for additional assets. VIS Creator provides multitenancy capabilities that allow IT organizations to easily set different levels

of user interfaces. Using this capability, administrators can provide a separate portal for each department—for example, sales, accounting, human resources, and IT.

One significant challenge these and other departments may face is the delay associated with IT asset acquisition. For example, suppose human resources needs to run a new application—an application the organization has been requesting for a long time—and needs to provision a server to run it. The SLA from IT, however, may specify two weeks for this acquisition. As a result, a two-week delay is required before the application can be mounted, tested, and released. Dell vStart for Dell Private Cloud avoids this kind of delay by enabling an authorized user to select IT assets and services from an authorized service catalog for expedient availability. Not only does this approach help eliminate the waiting period specified by the SLA, but it also helps ensure that access to the IT assets is in line with the existing governance rules (see Figure 2).

Organizations increasingly run IT as a business; therefore, IT decision makers need a way to identify end users and address usage patterns. This information helps ensure that SLAs are being met cost-effectively, without overprovisioning capacity. Of course, external customers need to be billed for the services they are provided. Built-in auditing capabilities allow authorized users of vStart for Dell Private Cloud to quickly and easily create reports such as those for IT chargeback and IT showback.

As authorized end users continue to activate virtual machine sessions to meet their needs, there is often a tendency to forget to end the session after the work is done. Over time this tendency can create life-cycle management problems, such as virtual machine sprawl that unnecessarily consumes resources and affects service quality. vStart for Dell Private Cloud can be used to actively monitor the environment and

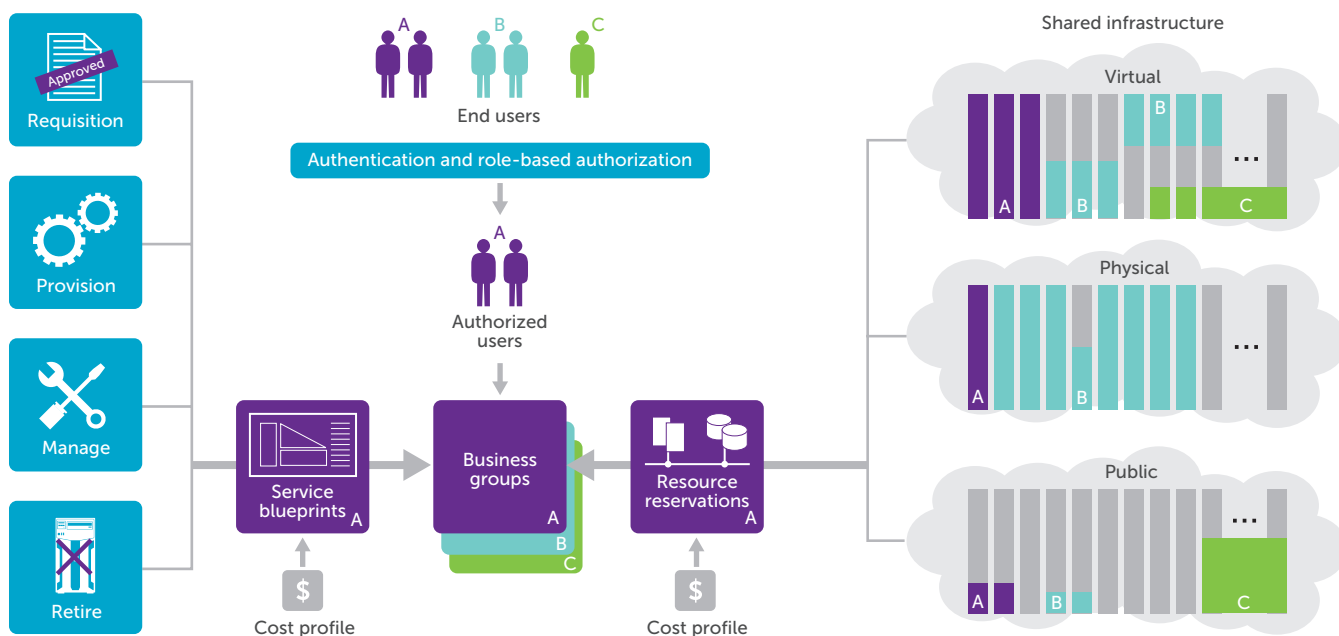


Figure 2. Dell vStart for Dell Private Cloud and self-service IT asset provisioning



Centralized, end-to-end management

Running data centers effectively and efficiently today requires managing both the virtual and physical infrastructures.

However, managing both infrastructures can be complex because it typically requires using multiple, disconnected tools and processes. Time-consuming management can also take away valuable time IT professionals could otherwise be devoting to projects that advance the strategic business and organizational agenda.

The Dell Management Plug-In for VMware vCenter offers a native plug-in for the VMware® vCenter™ management platform. It streamlines access to the tools and the tasks

associated with managing and deploying Dell PowerEdge™ servers in a VMware virtualization environment. The Dell Management Plug-In for VMware vCenter is designed to reduce complexity, speed deployment, and minimize the risk of introducing errors or not keeping system BIOS and firmware up to date.

Dell vStart for Dell Private Cloud includes the Dell Management Plug-In for VMware vCenter, which provides management capabilities for vStart components through a single vCenter console. To learn more about the plug-in, visit dell.com/vcenterplugin.

Authors

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Learn more

Converged infrastructure:
dell.com/vis

Dell vStart:
dell.com/vstart

automatically shut down inactive sessions based on preconfigured rules.

In addition, vStart for Dell Private Cloud is designed to scale to accommodate growing organizational needs. The infrastructure can scale vertically—by adding server or storage capacity—or simply by connecting additional vStart racks. The racks connect seamlessly, and the multirack infrastructure can be managed through a single console. Because vStart for Dell Private Cloud is built and supported by Dell, organizations have a single point of contact and accountability.

As organizations continue to evolve their cloud strategies, a hybrid cloud computing platform can provide other advantages. For example, a retailer may require a dramatic rise in capacity during the holiday season compared to its capacity needs during the rest of the year. Instead of carrying additional capacity year-round, it can choose to provision capacity for the other months and only utilize the cloud during the holiday season for on-demand additional capacity. A hybrid cloud provides a combination of on-premises private cloud and off-premises public cloud computing. Utilizing a hybrid cloud platform can present different challenges, particularly for managing the off-premises public cloud. To address these challenges, the management layer within vStart for Dell Private Cloud enables global cloud

management. Using the same interface, an IT administrator can manage both the on-premises private cloud and the off-premises public cloud.

Streamlining private cloud transformation

As IT and business needs grow, increasing numbers of organizations are gravitating to private clouds for enhanced agility and cost-efficiency. Effective private cloud deployments require virtualized environments that facilitate easy management of workloads, efficient creation and migration of virtual machines, and rapid delivery of enhanced business outcomes.

Having gained considerable experience with virtualization deployment, Dell now offers organizations the modular Dell vStart infrastructure prebuilt with servers, storage, networking, cabling, management software, and deployment services. In addition, organizations taking the next step on their journey to the cloud can deploy Dell vStart for Dell Private Cloud. This racked and cabled virtualized infrastructure is designed to deliver advanced private cloud capabilities including automated, self-service delivery of IT assets. vStart for Dell Private Cloud includes Dell VIS Creator and enables organizations to quickly and easily transform data center operations to private clouds that offer their employees and customers advanced IT asset and service delivery. 