



The Path to a Hybrid Cloud for VMware vRealize

Implementing a private/hybrid cloud is not easy. Understanding your options and the impact on your organization is a step in the right direction.

Analysts and industry experts agree: Hybrid clouds are the future state of IT infrastructures. Moreover, IT leaders know that this is their destination. What isn't clear is how to get there—or, in some cases, how to get started. This problem is compounded by private cloud solution providers driving implementations that protect proprietary technologies and approaches. How do you know which solution or strategy is right for your organization?

IT leaders are right to be wary of this one-size-fits-all approach to private clouds, as the wrong implementation could result in another silo within an already complex data center environment. To be successful, a private cloud strategy must embrace existing processes and technology. In addition, cloud solutions must be flexible enough to adapt to changing requirements while providing cloud capabilities that meet your specific challenges.

As they approach a private cloud project, IT leaders should understand implementation options and their impact on the organization. This paper introduces those options and explains how, together, Dell and VMware are working to help IT organizations deploy a private/hybrid cloud on their own terms.

Building a Hybrid Cloud That Meets Your Needs

Having virtualized their data centers, IT organizations are increasingly making the decision to build a private cloud while enabling hybrid functionality. A hybrid cloud enables companies to leverage external public and on-premises private clouds for the best of both worlds—efficient scalability and elasticity of the public cloud for rapidly changing business requirements and the visibility and security of a private cloud for sensitive or regulated data.

There are challenges, however, to building a hybrid cloud. As IT leaders begin evaluating private cloud solutions, they quickly find that solution providers offer limited options that often lock them into a specific architecture. This lack of choice and flexibility defeats the purpose of cloud computing. Without integration or multicloud capabilities, IT organizations are limited in the internal or external cloud services they can provide or utilize.

To truly benefit from a hybrid cloud, infrastructure should be flexible and public cloud services should be chosen based on business need, not technical constraints. To ensure seamless integration with external clouds—whether they be community clouds, vertical clouds or SaaS solutions—the private cloud environment should be built with industry standards, flexible and modular components and heterogeneous management tools.

A one-size-fits-all approach to private clouds perpetuates IT silos. It forces IT to manage the private cloud separately

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from the rest of the data center as well as any cloud services with which the private cloud does not integrate. This creates additional management complexity and administrative overhead, which decreases the project's return on investment and the IT organization's ability to efficiently meet business requests.

A sound private cloud strategy should work within existing virtualization investments—in this case, VMware, which is broadly applicable and widely deployed. Platforms, tools and capabilities should address and embrace existing processes, as opposed to forcing a wholesale change. This approach builds on what the IT organization has achieved, while eliminating the risk of building a cloud platform that does not meet IT and organizational goals. This approach maximizes the opportunity for project success while minimizing risk to the organization.

Private Cloud Implementation Options

IT organizations have three options when it comes to building a private cloud: They can build out a custom solution, leverage a reference architecture or implement a pre-engineered solution.

A custom implementation has the most-demanding resource requirements but

offers maximum flexibility in design option choices. For IT organizations that lack the skills or do not have the people and the time to dedicate to the project, it is critical to choose a partner that understands the key project goals and the core technologies involved. The partner should have deep experience working within existing VMware environments while having the ability to use and access the end-to-end systems and heterogeneous software capable of integration with existing investments. That partner will be integral in setting the strategy; designing the solution; deploying it, including business process integration; and providing complete post-implementation support. The benefit here is that this partner can address further requirements for ongoing process integration to ensure project success from an ROI and TCO perspective.

A second option is to leverage a reference architecture from a trusted solution provider. This can help reduce the time, complexity and risk of implementing a private cloud while leveraging in-house expertise to design and customize the strategy and solution to meet specific requirements. The IT organization can leverage prescriptive component choices with recommended configurations for the guidance it needs while maintaining control over the infrastructure. What's critical here is working with a partner that not only offers

a solid reference architecture based on best practices but also provides services in a highly modular fashion to fill any gaps an organization may have. These services should encompass the entire spectrum from setting a strategy and doing solution design and implementation to providing post deployment support and management.

Still other IT organizations are less concerned about leveraging any of their existing infrastructure and instead are looking to minimize time to deployment at the cost of some flexibility. They want a plug-and-play solution. These IT organizations may choose to consume a private cloud architecture via a complete, preconfigured “engineered solution.” This approach offers the shortest time to market.

Dell: Your Unbiased Partner in a Hybrid Cloud Implementation

Unlike other solution providers, Dell offers a full range of implementation options for your private/hybrid cloud. Whether you choose a custom implementation, reference architecture or an engineered solution, we have the products and services to help. Our customer-centric solutions fully embrace a flexible, modular building block approach that leverages existing investments in your VMware virtualized environment. Dell does not push one architecture, hypervisor or cloud management platform over another, and nor it doesn't pre-suppose which architecture will work best for you. We work with you to understand your specific challenges and project requirements to reduce risk and simplify the process.

Dell takes an approach based on open industry standards. Its server, storage and networking platforms offer seamless integration into VMware virtualization environments, reducing management complexity. One example is the Dell Hybrid Cloud Platform Reference Architecture with VMware vRealize. This reference architecture allows customers the flexibility to deploy a hybrid

cloud that embraces the existing virtualization environment while extending its capabilities to realize hybrid cloud functionality. Through the use of unique heterogeneous software management tools, organizations can accelerate the deployments of cloud infrastructure to reduce the number of steps and the time it takes to provision applications and services. For example, Active System Manager (ASM), Dell's heterogeneous unified management and automation solution, includes deep integration into vRealize Orchestrator (vRO) to extend the automation and orchestration capabilities of vRO to improve responsiveness and simplify complex IT processes. It also enables integration with vRealize Automation (vRA) so that any automation methods supported by ASM can be published to the vRA service catalog for a complete self-service IT experience. Using the wizard-driven automation and prebuilt templates, you can do the following:

- Onboard, configure and deploy new cloud infrastructure in less than three minutes of hands-on administrator time—95 percent faster and with 77 percent fewer steps than with manual processes.
- Deploy a new IT service in just six steps and less than 30 seconds of admin time, using a prebuilt automation template.
- Provision bare metal hardware and deploy a new ESXi cluster 80 percent faster and in 71 percent fewer steps than one of the leading competitors in this space.¹

These automation capabilities deliver speed, reliability, responsiveness and consistency to the deployment; ongoing scaling; and deprovisioning of resources in the cloud environment.

Dell's unique approach and capability empower IT organizations with an easy path to an effective hybrid cloud, simplified cloud management and the flexibility that

can be realized only with heterogeneous software tools. IT organizations can put more control in the hands of business units to choose the cloud services that meet their needs, without the risk of creating additional shadow IT or cloud silos that must be separately managed or are outside the control and governance of IT. The multicloud environment can be centrally managed, reducing operational overhead and enabling efficient delivery of IT as a service.



Dell offers a suite of software tools that enhance a VMware private cloud to create a highly manageable hybrid cloud environment:

- **Dell's Foglight Suite** provides software tools for management, utilization reporting and performance monitoring for infrastructure and applications in physical and virtual systems, in a unified dashboard. Foglight Suite provides visibility from the end user through to underlying hardware layers, supporting cross-domain collaboration and reducing the time it takes to solve problems.
- **Dell's Active System Manager (ASM)** is a tool that supports heterogeneous physical infrastructure and multiple hypervisors for simplified resource pooling, workload templating and provisioning. ASM can apply business logic to private cloud systems management and offers a centralized approach to workload-specific configuration to automate IT service delivery.

¹ Based on independent testing performed at a third-party testing laboratory. For the details, please visit ASM on Dell Tech Center.



By capturing best practices into service templates, ASM ensures reliable and repeatable infrastructure and workload deployments.

- **Dell Boomi** is an on-demand multi-tenant cloud integration platform that enables IT organizations to connect any combination of cloud and on-premises applications and data. With Boomi, IT organizations can build and deploy integrations in just days or weeks instead of months or years. An intuitive drag-and-drop interface enables you to create integration processes right away, and a community-powered mapping suggestion engine automatically suggests mappings between data fields and applications.

- **Dell OpenManage Essentials** is a single easy-to-use, one-to-many systems management console solution for remote monitoring and management of Dell and third-party enterprise-class hardware. It decreases operational errors and system downtime with a variety of features, including agent-free server monitoring and updates. With a unified view of the IT infrastructure—including a deep view into the health of systems and their components—the IT environment can be managed and maintained more effectively.

Finally, IT organizations can enjoy the peace of mind that comes with access to professional services from a trusted partner. Dell's cloud consulting services can assist IT organizations in visualizing a cloud strategy as well as planning, designing and implementing an efficient cloud solution. Dell's consulting services team helps IT organizations navigate critical IT service delivery elements such as appli-

cation management, self-service portals, business workflows and automation to ensure that the private cloud implementation is aligned with the desired IT and business outcomes. If a customer is looking for options such as managed services for its cloud, Dell Services can provide them, so customers can keep IT teams focused on critical projects rather than day-to-day operational activity.

Conclusion

Implementing a private/hybrid cloud isn't easy. Most solution providers have limited offerings and attempt to force-fit any IT organization into their predetermined models. The solutions you deploy should be flexible and modular so they can adapt to existing processes while leveraging existing investments. Dell offers a variety of models and can help you determine what works best for your workloads, internal skill sets and existing investments. Contact Dell today, and let us help you get started on the path to a hybrid cloud.



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