As organizations endeavor to understand the differences among virtualized environments, private clouds and public clouds, as well as approaches such as IT as a Service (ITaaS) and software-defined data centers (SDDC), it helps to reset assumptions. Private clouds are the initial step IT enterprises usually take in this transformation. The following are some frequently asked questions and important insights about private clouds:

AREN’T PRIVATE CLOUDS HARDER TO DEPLOY AND MANAGE THAN PUBLIC CLOUDS?
Actually, private clouds can be as simple to use and even more agile than public clouds. Contrary to popular belief, for most workloads, private clouds can be more agile than public clouds, while at the same time offering enterprise-class service-level agreements (SLAs) and security.

The service levels maintained by private clouds can greatly exceed the performance of public clouds. One analysis found that private clouds generally provide five-nines (99.999%) availability, or approximately six minutes of downtime per year, compared with more than 260 minutes of storage downtime, or 99.95% availability, per year under a public cloud model.

To achieve such benefits, organizations should seek out an infrastructure that offers cloud attributes for delivering IT as a Service. This includes:

• Ensuring enterprise-level security (secure multi-tenancy and integrated backup and recovery).
• Increasing automation (for provisioning, monitoring and service analytics).
• Setting up self-service portals and service catalogs.
• Delivering more financial transparency with metering, showback and chargeback.
• Enabling flexible pools of resources (greater agility).

With these capabilities, enterprise private clouds can provide a highly agile IT environment to line-of-business users at a much more reasonable price than the public cloud can offer. IT organizations

FAQ: Building Your Own Private Cloud
Discover how private clouds add value while maintaining simplicity, enabling automation and driving self-service
can deliver a simpler, more flexible consumption model — but to do this, they must transform processes across infrastructure, operations and applications.

Under a private cloud model, provisioning no longer takes weeks or months, which increases end-user satisfaction with IT service levels and builds stronger cooperation. As a result, IT organizations can more fully control IT services and keep so-called shadow IT in check, enabling strong compliance and governance benefits.

**WHY WOULD I CHOOSE CLOUD INFRASTRUCTURE IF I’VE ALREADY INVESTED IN ADVANCED VIRTUALIZATION?**

Virtualization gets an organization only so far. True, it allows IT to reduce capital expenses through massive consolidation (reducing hardware, power, cooling and space requirements), which has been key to the industry’s maturation during the past decade. It is a great starting point, but IT doesn’t have to stop there.

Cloud infrastructure delivers the benefits of virtualization, but also takes organizations a step further by shifting the focus from just driving cost efficiency to driving business agility. Cloud capabilities such as automated provisioning and self-service, metering and chargeback, automated monitoring, secure multi-tenancy and elasticity all significantly reduce operational costs across the enterprise, above and beyond the simple consolidation of virtualization.

This can add enormous value when considering the state of IT budgets today. With approximately 72% of budgets allocated to ongoing maintenance and just 28% invested in new projects, technologists could certainly use a longer financial leash to innovate. But without a new platform for agility like private clouds, that maintenance-to-innovation ratio will only grow wider: IDC analysts predict that by 2020, server growth will bubble up by 10 times and information growth will increase by 14 times. At the same time, IT staff is forecasted to grow by only 1.5 times while line-of-business leaders are expecting more from IT, with 59% saying technology is becoming more critical to the business. The agility of private clouds can help IT overcome this maintenance budgetary quagmire and more closely align to business objectives, driving greater business value as a result.
HOW DO I PROTECT AND SECURE MY ENTERPRISE PRIVATE CLOUD INFRASTRUCTURE?
Organizations should look for a robust IT solution that delivers enterprise-class security. This can be more easily achieved through a private cloud infrastructure than through the public cloud.

In a public cloud, sensitive applications and IT are exposed to certain risks related to data recoverability, data isolation and data destruction. In addition, users are responsible for setting and controlling the appropriate security settings, and since it is often application managers or line-of-business users turning to outside service providers, there is greater exposure to risk because these users may not be familiar with how to properly set up, administer and manage those settings.

A private cloud lets IT take greater control and secure not only the data and the applications, but also the policies and cloud environment itself. Enterprise private clouds provide secure multi-tenancy to achieve isolation throughout the entire stack and make it easier to institute measures such as role-based access control. A private cloud solution also makes it easier to provide robust backup and recovery capabilities.

WHAT ARE THE BIGGEST OBSTACLES TO DEPLOYING AN ENTERPRISE PRIVATE CLOUD INFRASTRUCTURE?
Often, many of the biggest challenges of deploying private clouds have nothing to do with technology. Instead, they involve difficulty in managing the transformation across people and processes. To truly achieve the benefits of private clouds, enterprises must change processes to align IT more closely with the business and establish new roles and skills to manage cloud resources.

This shift changes the way IT is delivered and consumed, which could be met with cultural resistance. In addition, the organization may have difficulty in cultivating or recruiting the advanced skill sets of cloud-savvy IT workers.

To meet these challenges, organizations should seek out infrastructure vendors that can support them through their entire cloud transformation journey with consulting, management and orchestration and service catalog services, and training and certification.

HOW IMPORTANT IS THE CLOUD MANAGEMENT STACK WHEN SETTING UP A PRIVATE CLOUD SOLUTION?
The software-defined data center is an architectural approach to building an agile and automated cloud infrastructure. As organizations seek to develop this model, integration and automation is paramount.

This means making sure that software-defined components of compute, networking and storage are automatically provisioned based on policies all the way through the cloud management stack, which requires an integrated management stack that orchestrates it all.

This is why VMware’s partnership and integration efforts with EMC are so important. Tight integration provides the advantages of automated provisioning, simple self-service, insightful monitoring, secure multi-tenancy, service-level

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management as well as IT costing, metering and chargeback.

**HOW CAN I GET STARTED BUILDING MY OWN PRIVATE CLOUD?**

First, it is crucial to understand the three deployment methods available so you know when to use them when building your own private cloud infrastructure:

- **Build Your Own (BYO):** Offers best-of-breed components from EMC and VMware. This allows an organization to leverage existing investments with EMC and VMware. While BYO is a complex deployment method that requires assembling the pieces on your own, it provides the most flexibility.

- **VSPEX:** Offers some degree of the flexibility seen in BYO while pulling together the storage, networking and compute resources through a proven reference architecture delivered by our partners.

- **Vblock:** This is a converged infrastructure offering a pre-validated, pre-configured box that allows very fast time to deployment with the lowest TCO.

Before moving on any of these choices, however, organizations should build out their business cases. They need to do their homework to understand where operational costs exist and how they’ll be challenged to meet service levels and business demands.

If this sounds daunting, remember: You can lean on EMC resources to make the transformation easier.

To determine your readiness and build a transition roadmap, EMC provides IT Transformation workshops to benchmark your organization against others that have already gone through the process.

Additionally, EMC offers a service to help you determine how to “right-source” workloads and applications, and decide which to run on private clouds, hosted private clouds and the public cloud.

For the transformation of operating models and processes, EMC offers its Management and Orchestration service and Service Catalog service. Also, to help teach skills to IT leaders and staff, check out EMC’s Proven Professional program.

This wide spectrum of offerings ensures that your organization can achieve all of the business agility and TCO benefits of private clouds, while keeping the growing pains to a minimum.