

VMware vCloud Powered Services

VMware-Compatible Clouds for a Broad Array of Business Needs

Caught between shrinking resources and growing business needs, organizations are looking to cloud computing to provide a more efficient, flexible, and cost-effective model for computing—one that allows IT to operate much more efficiently and respond faster to business opportunities. The goal is to enable IT as a Service, and cloud computing provides the technical architecture to deliver it.

KEY HIGHLIGHTS

Content:

1. What is Cloud Computing?
2. Cloud Deployment Models and Business Requirements
3. How to Choose the Right Cloud for Your Business
4. Why Use a VMware vCloud Powered Service?
5. How to Get Started

What is Cloud Computing?

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.¹ Cloud computing encompasses three service models: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). This document focuses on the latter, IaaS, and in particular on the role of hybrid and public cloud services that complement the existing virtualized datacenter or private cloud.

What has driven customer demand for cloud computing? The demand comes essentially from two factors: (1) the need for increased business agility, which is the ability to deliver services faster and be more responsive to business needs, and (2) the need to significantly drive down IT costs for the organization.

Business stakeholder demands on IT are increasing. Every business decision impacts IT, and accelerating market forces reward first movers. Yet most enterprise applications and services are built on top of tightly coupled technology stacks that are challenging to change and costly to manage. Provisioning a new email server or business intelligence engine, for example, can require weeks or months of waiting just for hardware purchases and system image configurations.

Caught between shrinking resources and growing business needs, organizations are looking to cloud computing to provide a more efficient, flexible, and cost-effective model for computing—one that allows IT to operate much more efficiently and respond faster to business opportunities. The goal is to enable IT as a Service, and cloud computing provides the technical architecture to deliver it. An important aspect of IaaS is the use of “hybrid clouds” that allow IT to leverage not just internal resources but also securely use cloud computing capacity from service providers whose architecture is compatible with their own, with compatible management systems that allow IT to retain control of the workloads at all times.

Cloud Deployment Models and Business Requirements

By design, cloud computing is scalable and elastic, offering IT departments a way to increase capacity or add capabilities on demand, without investing in new infrastructure, training new personnel, or licensing new software. There are three primary deployment models for the cloud: Private cloud, Public cloud and Hybrid cloud.

Private cloud is the first choice for most organizations today because it fits within the framework of how CIOs and IT decision makers have been running IT for many years—managing all systems, applications, and resources on premise within the company datacenter. Private cloud offers a way to improve IT efficiency while maintaining control of all IT operations.

Meanwhile, public cloud services have grown significantly over the past few years, offering a means for businesses to quickly and cost effectively stretch their existing IT capacity by leveraging resources, applications, and services from outside software vendors and service providers. Commodity public clouds have especially been popular

¹ Definition from the National Institute of Standards and Technology (NIST), an agency of the U.S. Commerce Department.

Hybrid cloud services offer the potential “best of both worlds”—agility and low cost together with high performance, security, and application portability.

with software developers and line-of-business IT groups, who are often faced with the challenges of having to execute on project requests very quickly and with limited budget. In addition, many SMB and mid-sized organizations may fully outsource their IT to a service provider today.

There are some hurdles with many of the commodity public cloud services. First, it’s been difficult to bring legacy IT environments to the cloud, which requires the re-writing of many existing applications. Second, security is top of mind for most enterprises and it’s been hard to know if their requirements are being met via public cloud offerings. Does IT know where data resides, who has access to it, and whether audits can be performed on all transaction logs for compliance purposes? Performance guarantees are also a concern if an enterprise wants to run tier 1 applications in the public cloud, since many services that are built on multi-tenant shared infrastructure tend to present a “noisy neighbor” problem, where performance can suffer if another customer’s application has a spike in demand and draws on resources. Lastly, once applications are developed to run in the cloud, corporate IT is often asked to take over managing it and move it back to the company’s datacenter; this task has been difficult if the application was developed in the public cloud.

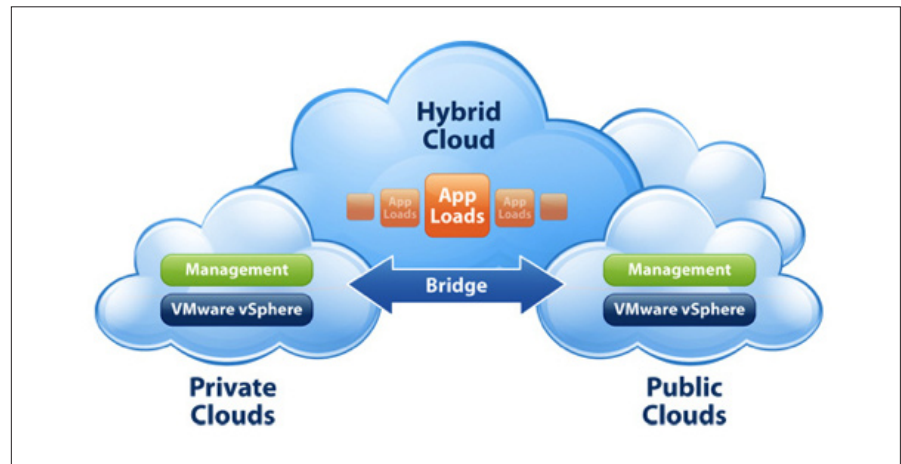


Figure 1. Hybrid Cloud conceptual view.

Hybrid cloud services offer the potential “best of both worlds”—agility and low cost together with high performance, security, and application portability. In a recent global study of CIOs and IT decision makers, these attributes were among the top requirements for consideration when evaluating cloud computing vendors or technologies.² Yet, to date this model has been difficult for IT to deliver because most vendors are focused exclusively on either private or public, not both.

This is where service providers with VMware vCloud™ Powered service offerings provide a unique value proposition. As the leader in virtualization and cloud infrastructure, VMware® is the only company to offer a true enterprise-class hybrid cloud solution, which is used by vCloud Powered service providers to meet enterprises’ cloud computing needs.

² CIO Global Cloud Computing Adoption Survey, January, 2011

How to Choose the Right Cloud for Your Business

There are many criteria you can use when selecting an Infrastructure as a Service cloud provider:

Type of service	<ul style="list-style-type: none"> Do I want a raw Virtual Machine (VM) compute capacity or a managed service?
Portability	<ul style="list-style-type: none"> Can I bring my existing VMs into the service? Is it compatible with my VMware infrastructure?
Ability to scale up & down	<ul style="list-style-type: none"> What if I need to increase and/or decrease my compute capacity over time?
Performance requirements	<ul style="list-style-type: none"> What level of guaranteed uptime (SLA) do I need for my applications?
Support policy	<ul style="list-style-type: none"> What is the response time for issues and escalation path? Do I have a dedicated support contact?
Data security and compliance	<ul style="list-style-type: none"> Where is my data actually stored? Is it encrypted? Who has access? Can I get audit controls for regulatory compliance (e.g. ISO 27001, SAS 70)?
Type of payment model	<ul style="list-style-type: none"> “Pay per use” or subscription? VM instance-based or resource pool?

Through the VMware Service Provider Program and its vCloud service badges, you can easily find a service provider to meet your needs based on your use case and service. There are two badges to help you identify the type of service and technology used by the service provider:



VMware Virtualized – a service built on VMware vSphere™. VMware Virtualized is ideal for application hosting and traditional managed services.



VMware vCloud Powered – a cloud service built on the VMware vCloud architecture, including vSphere and vCloud Director, allowing the import and export of VM images based on the OVF format, and with full access to the vCloud API to integrate additional services, such as those that automate cloud service consumption and control.

VMware vCloud Powered services enable organizations of all types to employ a true hybrid cloud environment. These services are built on the same VMware technology platform and architecture on which the vast majority of enterprises have built their own virtualized datacenters. This allows IT to easily provision public cloud resources that are compatible with existing infrastructure, and quickly and securely extend their internal virtualized infrastructure into the public cloud.

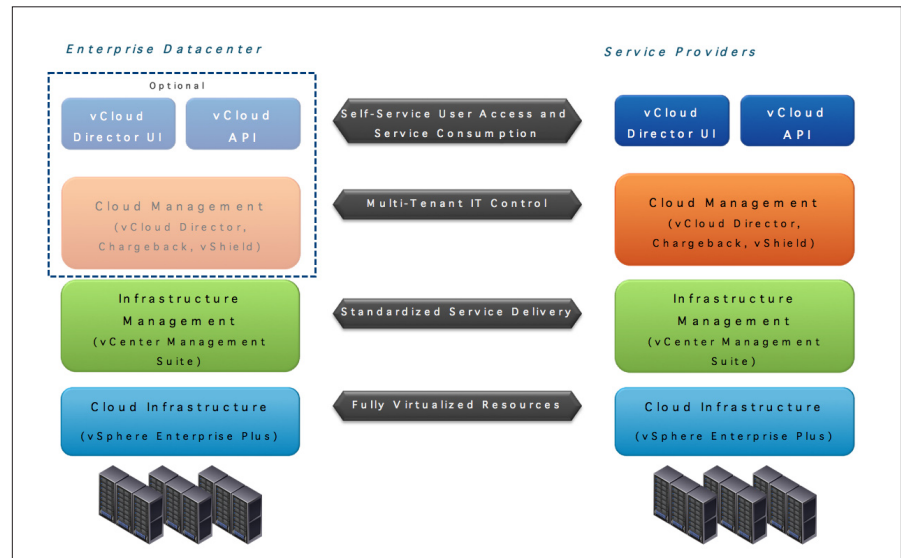


Figure 2. VMware vCloud Powered services are built on the same VMware-based architecture as your internal datacenter to ensure performance, security, and application portability.

Why Use a VMware vCloud Powered Service?

VMware is the global leader in virtualization and cloud infrastructure. Today, more than 250,000 customers rely on VMware solutions to achieve their business goals. VMware and its partners offer a unique, evolutionary path to cloud computing that reduces IT complexity, significantly lowers costs, and enables more flexible, agile service delivery. By adopting the leading platform chosen by the largest number of enterprises and service providers, you have the choice to place any of your workloads in the optimal location (a private or compatible public cloud) while fully retaining the ability to move workloads between or across private and public cloud infrastructure—leveraging a hybrid cloud environment to achieve improved business agility and cost control.

VMware vCloud Powered services are built on the same VMware-based architecture as your internal datacenter to ensure performance, security, and application portability. This architecture includes:

VMware vSphere:

VMware vSphere has set the standard as the most robust, reliable and complete virtualization platform. Deployed in the most demanding datacenters around the world, VMware vSphere now forms the foundation for building cloud infrastructures for customers across all industries and service providers alike.

VMware vCloud Director:

VMware vCloud Director builds upon the VMware vSphere foundation and exposes virtualized shared infrastructure as multi-tenant virtual datacenters that are completely decoupled from the underlying hardware and isolated from one another. This enables you to access the cloud service in a cost-effective way, leveraging self-service catalogs to deploy and consume pre-configured services with the click of a button.

VMware vShield™:

VMware vCloud Director also leverages **VMware vShield security technologies**, which allow you to maintain security and control over your cloud services with policy-based user controls and network security that scales dynamically across your cloud environment.

You can leverage the benefits of vCloud Director and vShield in a vCloud Powered cloud service even if you have not yet deployed it in your on-premise datacenter.

VMware and its partners offer a unique, evolutionary path to cloud computing that reduces IT complexity, significantly lowers costs, and enables more flexible, agile service delivery.

How to Get Started

Along with selecting a vCloud Powered service provider, it's important to consider what application workloads are good candidates to deploy to the cloud. VMware has seen three primary use cases that resonate strongly with customers looking to move applications to a hybrid cloud environment:

- 1. Applications requiring rapid deployment** – New applications being developed and tested in pre-production and staging environments (Dev/Test) and new application instances being deployed in a lab environment for demo purposes.
- 2. Applications with broad geographic access** – Where business operations may be spread out over different countries or geographies and where users require close proximity to the application for performance.
- 3. Applications requiring temporary or elastic capacity** – Applications where the demand for resources will vary greatly over time, so users will request adjustments to the application resources, for example, scientific computation or anything with seasonal transactions.

VMware customers have prioritized these types of applications for cloud services due to the high rate of change they experience with them. Often, the bulk of requests that consume IT staff time are generated by *ad hoc* workloads rather than business critical production applications. Plus *ad hoc* workloads cause the biggest cost and administrative headaches for IT. Applications such as these will benefit considerably from being served out of a cloud environment and can drive immediate value to the business.

Summary

By selecting a vCloud Powered service, you can:

- Extend the logical boundaries of your datacenter and leverage third party VMware-compatible cloud computing services, based on secure and proven VMware technologies.
- Use an interoperable service delivery model and approach that achieves the full flexibility and benefits of cloud computing within your organization while preserving control.

Until now, wholesale disruptive infrastructure and application changes have been high hurdles for companies attempting to leverage the benefits of cloud computing. VMware vCloud Powered services deliver a robust set of cloud computing services, with broad support for existing and new applications, eliminating those hurdles for computing in the cloud. Unlike other commodity public compute clouds that require applications to be built specifically to a single cloud computing platform and require complete re-writes of existing applications, millions of existing applications currently running on VMware can run on vCloud Powered services, without modification—giving you the flexibility to run applications where it makes the most sense for your business.

For more information on cloud computing and VMware vCloud Powered services, please visit www.vmware.com/vcloud or contact your VMware representative.



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