

A Guide to Hybrid Cloud

An inside-out approach for extending your data center to the cloud

Inside

INTRODUCTION

Create a Flexible IT Environment With Hybrid Cloud

CHAPTER 1

Common Business Drivers for Hybrid Cloud

CHAPTER 2

Questions to Ask When Evaluating Hybrid Cloud

CHAPTER 3

Top 5 Hybrid Cloud Starting Points

CONCLUSION

Getting Started
Top 5 Considerations When Selecting a Hybrid Cloud Provider

Create a Flexible IT Environment With Hybrid Cloud

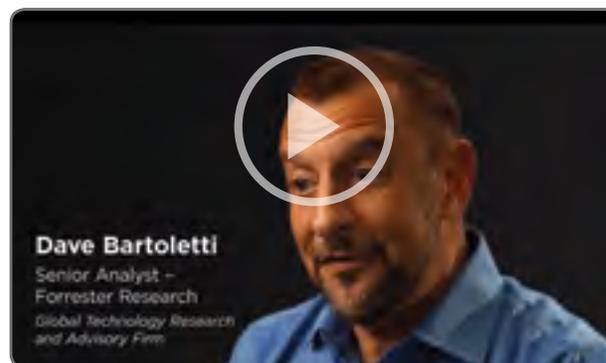
Businesses are looking for a more flexible IT framework that can adapt to today's rapidly changing and global environment.

Business teams striving to move quickly into new markets and launch new products and services are demanding more from IT organizations that have traditionally been focused on avoiding downtime, ensuring security and compliance and holding down costs. Cloud computing offers compelling benefits for IT and the business to gain on-demand access to IT resources for new application development, as well as for running existing applications.

However, developing new applications in the cloud may require learning to use new tools and processes, while moving existing applications often requires recoding for the cloud service provider's platform - a costly and time-consuming process.

VMware takes a new approach that starts inside your data center and extends out to support all applications - both those 'born in the cloud' as well as existing ones - with **VMware vCloud® Air™**, a family of cloud services owned and operated by VMware.

vCloud Air is built on the trusted foundation of VMware vSphere®, enabling you to seamlessly extend your data center to the cloud leveraging the same infrastructure, network, security, management and skills you already use with your internal VMware infrastructure. By extending the same platform and operations model you use in your onsite data center to the cloud, you can deploy and run your applications onsite, offsite or both - without compromise and with less risk.



Learn more about the benefits of hybrid cloud:
vmware.com/go/hybridbenefits

Common Business Drivers for Hybrid Cloud

CHAPTER 1

The demand for IT resources is ever-changing. Special events or acquisitions can cause spikes in demand, requiring the business to ramp up resources and then reduce them. As your business grows, you must be able to provide the capacity to meet both predictable and unpredictable situations.

An IT strategy should consider all available options for onsite and offsite environments to meet the demand for IT resources. Being capped at the physical boundaries of the data center doesn't make sense when you have rich cloud options available that can be integrated into your overall IT strategy to meet demand.

Hybrid cloud allows you to augment your internal data center resources, providing a flexible and cost-effective solution to meet a variety of business needs, including:

- On-premises capacity limitations
- Limited IT staff and budget
- Lack of in-house IT cloud experience
- Seasonal or unpredictable usage patterns
- Rapid new application development requirements
- Additional geographical locations



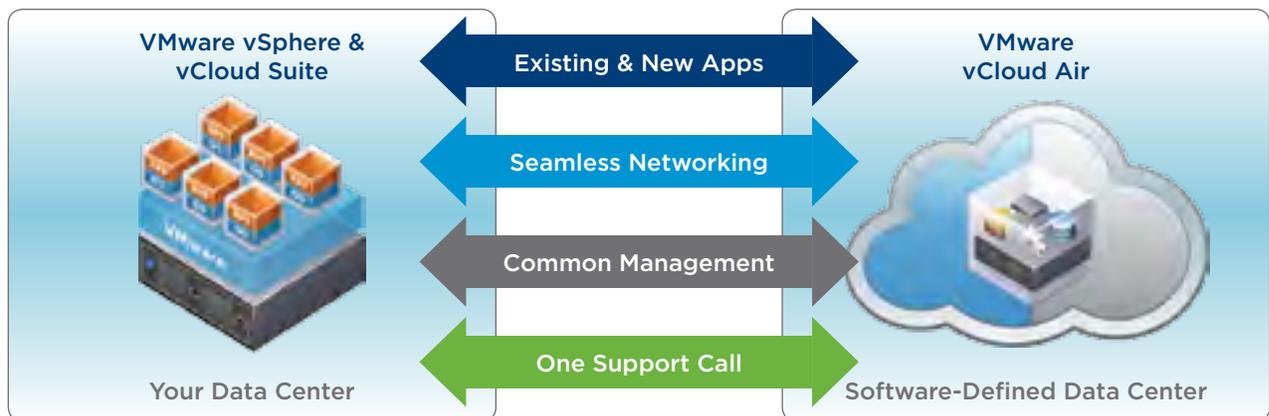
Discover why VMware customers are using hybrid cloud:
vmware.com/go/hybridcustomers

Questions to Ask When Evaluating Hybrid Cloud

Q1 Will my existing applications be able to run in hybrid cloud without complex changes?

A: The first problem most businesses face when moving workloads to the cloud is that most public clouds are not designed to run both existing and new applications on a common platform. Existing applications often have to be rewritten for the specific cloud infrastructure. The problem is that the underlying constructs are often completely different. This has complex ramifications in how you can move and manage workloads among your onsite and offsite environments.

vCloud Air is different. Because it's built on vSphere, it provides a common platform across your data center to the cloud. The result is you can write, deploy and manage applications in the cloud in exactly the same way as you do today. vCloud Air supports thousands of applications and dozens of operating systems that are certified to run on vSphere, so no changes are required to run your existing applications in the cloud and there are no new tools or processes to learn for deploying new applications.



Any Application... No Changes

Questions to Ask When Evaluating Hybrid Cloud

Q2 Will my applications be as reliable and manageable when deployed in hybrid cloud?

A: Sometimes, when moving applications to the public cloud, performance and availability suffer. Some public cloud environments place the burden of achieving availability on the customer, requiring customers to redesign applications to be resilient on best effort platforms that often fail.

vCloud Air offers automated replication, monitoring and high availability of applications, without requiring any code changes. Leveraging the same platform you already run internally, you can extend your management tools into the cloud, providing an integrated IT capability across your onsite data center and the cloud.



Watch Planview talk about delivering highly available software as a service to customers:

vmware.com/go/PlanviewDR



Watch a whiteboard demonstration on high availability by design:

vmware.com/go/cloudavailability

Questions to Ask When Evaluating Hybrid Cloud

Q3 Will my applications be as secure as those deployed in my onsite data center?

A: Public clouds are often multi-tenant environments with shared infrastructures. This 'sharing' and perceived lack of security concerns many businesses, especially for mission-critical data and applications, as well as for maintaining compliance.

vCloud Air enables you to seamlessly stretch your Layer 2 or Layer 3 networks from your data center to the cloud without manual configuration changes. It provides a fully isolated virtualized network and firewall with role-based access controls linked to your LDAP directory. You can use your existing IT policies to meet all security, compliance and control requirements.

Q4 What are my application network dependencies?

A: Network bandwidth and reliability are often among the highest concerns when moving workloads to public cloud, with questions on user access, firewall rules and other system connection requirements.

vCloud Air is built on a seamless virtualized network that is quickly customizable to support your application and security needs. Network virtualization allows you to configure your firewalls and network as if they were in your own data center, so your applications have all they need to operate. You also have common identity and access management across your onsite and offsite environments.



Watch a whiteboard demonstration on network connectivity:
[vmware.com/go/cloudnetwork](https://www.vmware.com/go/cloudnetwork)

Top 5 Hybrid Cloud Starting Points

CHAPTER 3

A Market Pulse survey by IDG Research Services found that more than **50% of organizations are currently using hybrid cloud or in the process of moving workloads to hybrid cloud**¹. Early cloud adopters have found success in moving development and test workloads to the cloud. It's an easy, fast and cost-effective way to get on-demand capacity for a limited time. But other workloads are also good candidates for getting started with hybrid cloud. Depending on your requirements, consider the following types of workloads for hybrid cloud.

Development/Testing

Take a low-risk first step and develop and test in the cloud to free up valuable on-premises capacity. You can then choose to deploy into production either on- or off-premises.

- Satisfy developers' need for an agile, dynamic environment to test and develop software applications.
- Reduce test/QA environment cost to reflect its lower performance and availability requirements.
- Streamline application portability between test and production environments.

Examples: New application development and pre-production testing

Biomni has managed to transform the speed and agility with which it can meet customers' needs by adopting hybrid cloud. It can now set up new environments, develop new features, and improve client services more efficiently than ever before.

[Read more »](#)

¹ Market Pulse Survey, IDG Research Services, October 2013

Top 5 Hybrid Cloud Starting Points

Packaged Applications

Use your next update cycle of existing virtualized desktops and applications to host in hybrid cloud.

- Migrate packaged applications to a hosted environment compatible with data center infrastructure, without having to re-architect and reconfigure the applications.
- Offload the hosting of standard packaged applications, such as email and collaboration software, to hybrid cloud to free up existing resources and staff for more value-added projects.
- Host virtual desktops with desktop as a service to simplify delivery of Windows desktops and applications to any device, anywhere.

Examples: Email, Collaboration Software, Data Analytics and Business Intelligence.
Desktop as a service

Disaster Recovery

Extend your data center to hybrid cloud to gain additional IT resources on demand.

- Expand on-premises data center capacity without incurring capital expenses.
- Avoid the prohibitive expense of replicating a full production environment to a second site run by core IT.
- Meet the demand for IT resources to run seasonal workloads or marketing campaigns.

Examples: On-demand data center expansion, secondary backup and archiving site, additional geo locations, seasonal workloads

Top 5 Hybrid Cloud Starting Points

New Enterprise Applications

Use hybrid cloud to build and host new enterprise applications in traditional 3-tier architectures.

- Support mission-critical applications in a cloud environment with high levels of security, compliance, performance and availability.
- Improve scalability to meet growing demand for customer access.
- Keep sensitive data onsite and move non-sensitive data and application tiers to hybrid cloud.

Example: Traditional applications, such as Java

“There are a variety of workloads that can take advantage of the flexibility and elasticity of hybrid cloud, from development and testing to pre-production to production workloads.”

‘Journey to the Hybrid Cloud’ Whitepaper, IDC, 2013

Next Generation Applications

Evolve from traditional applications to develop, test and deploy cloud-native and mobile applications in hybrid cloud.

- Deliver innovate applications at greater scale.
- Develop mobile applications that can be accessed from any device from anywhere.
- Deliver applications that can scale to meet demand and sudden or unpredictable spikes in traffic.

Examples: Cloud native applications and mobile applications based on development frameworks such as Spring and Ruby on Rails

Getting Started

Top 5 Considerations When Selecting a Hybrid Cloud Provider

Hybrid cloud offers both the agility and convenience of public cloud with the freedom and confidence to run any application onsite, offsite or both. As you evaluate moving various pre-production and production workloads – and your mission-critical and sensitive data – to hybrid cloud, be sure to develop a strategic approach based on your business and IT objectives. Here are the top five considerations to keep in mind as you begin evaluating hybrid cloud:

1

Support for new and existing applications

2

Security policies and controls to meet your compliance requirements

3

Built-in high availability without recoding your existing applications

4

Seamless network integration without requiring manual configuration changes

5

Integrated management capability across your data center to hybrid cloud



vCloud Air - The Ready-to-Run Cloud

With vCloud Air, you can support your existing workloads and third-party applications as well as new application development. The service provides unified networking that spans between your existing and new data center capacity, common management and security, the same reliability and performance you expect from your internal data center, plus one support number to call.

With VMware, you can move to hybrid cloud with confidence for a faster path to cloud success and return on investment, while minimizing risk.

Secure

- Runs on the infrastructure you already know and trust, supported by an ISO/IEC 27001 certified information security management system

Compatible

- Manage both onsite and offsite environments the same way and dynamically scale without sacrificing applications, processes or hardware

Versatile

- Thousands of certified applications and dozens of operating systems run on VMware

Reliable

- Built-in high availability, complete redundancy and end-to-end security

Award-winning Support

- Only one place to call for business essential support - VMware

Cloud Services to Fit Your Needs

vCloud Air offers two distinct core compute services that enable you to expand into the cloud at your own pace. These services can be deployed individually or in combination, giving you the flexibility and scalability you need to meet your organization's specific requirements.

Dedicated Cloud

A single-tenant cloud that provides physical isolation of dedicated resources and maximum control over your resources.

Virtual Private Cloud

A multi-tenant cloud with logically isolated infrastructure and fully private networking and resource pools.

DEDICATED CLOUD			VIRTUAL PRIVATE CLOUD		
Your own private cloud instance physically isolated			Fully private networking logically isolated		
 <p>Minimum Size: 120GB vRAM 30GHz vCPU</p>	 <p>Starts at: 6TB</p>	 <p>50 Mbps allocated 1 Gbps burstable 3 Public IPs</p>	 <p>Minimum Size: 20GB vRAM 5GHz vCPU (burst to 10GHz)</p>	 <p>Starts at: 2TB</p>	 <p>10 Mbps allocated 50 Gbps burstable 2 Public IPs</p>

In addition to these two core compute services, VMware offers vCloud Air Disaster Recovery, a recovery-as-a-service offering that introduces native cloud-based recovery capabilities for vSphere virtual environments. Disaster Recovery provides simple and secure asynchronous replication and failover in the event of a local disaster or disruption.

Learn more about vCloud Air.

Visit: vcloud.vmware.com

Contact: Your VMware Representative