What IT Leaders Need to Know when Buying for a Technology Refresh – Cloud Edition

AT A GLANCE

As organizations extend on-premises data center environments to the public cloud, several factors need to be considered to effectively integrate on-premises data centers with the public cloud to realize cloud benefits.

The goal of this buyer's guide is to help our customers understand these factors and identify the right public cloud platform, while identifying potential challenges.

73%
OF RESPONDENTS say that the cloud (private or public) will be their primary deployment venue for a majority of workloads in 2020.[1]

Cloud infrastructure—public or hybrid—is becoming the primary deployment environment for most workloads.

Business drivers for adopting cloud infrastructure models could be driven by topline growth or bottom-line cost savings. Topline drivers typically include the need to achieve faster time to market, improved development cycles or increased scale to provide an improved customer experience in today's hyper-competitive markets. The ability to realize bottom-line impact, such as lowering total cost of ownership, increasing operational resilience or improving productivity, is also accelerating the adoption of cloud models as organizations look for new ways to create operational and cost advantages.

From an infrastructure standpoint, organizations want to leverage the unique benefits that public clouds offer, which typically cannot be delivered with today's traditional data centers. These benefits include access to unlimited compute and storage capacity on-demand, usage-based pricing, global reach, and access to innovative cloud services.

As organizations adopt cloud infrastructures, the hybrid cloud is evolving as the preferred approach, with most organizations planning to extend on-premises data center environments by integrating with public cloud infrastructures.

Scenarios for extending data centers to the cloud

Footprint expansion
Obtaining capacity for new projects to support the business, or expand into new geographies, without building new data centers or investing in over-provisioning of existing data center resources

On-demand capacity
Handling unplanned, temporary or seasonal capacity needs without having to incur the capital expense of maintaining idle capacity

Hybrid applications
Developing new applications that need to integrate with on-premises applications or access native cloud services

Test, development, lab and training environments
Deploying as-needed environments for ephemeral workloads such as test, development, lab and training environments

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SOLUTION HIGHLIGHTS

Consistent infrastructure
VMware vSphere®-based environments across multiple cloud providers.

Bi-directional application portability with VMware vSphere vMotion and VMware HCX, across five generations of Intel Xeon processor-based instances—no need to refactor or re-architect applications.

Consistent operations with seamless interoperability
Single management console for on-premises and public cloud resources.

APIs leveraged to enable existing vSphere and vCenter® and third-party technologies.

Seamless and consistent networking and security from data to the cloud
Use existing network topologies and leverage unique capabilities such as Layer 2 stretched networks with VMware NSX®.

Incorporate advanced capabilities such as micro-segmentation, data-at-rest and in-transit encryption.

Cloud agility, scale and flexibility
Launch a data center in two hours, expand with new hosts in minutes.

Leverage flexible consumption options with hourly on-demand pricing, across multiple cloud platforms.

93%
OF RESPONDENTS said they are committed to the hybrid cloud approach as a long-term strategy.[2]

Factor #1: Selecting the right cloud

Organizations need to spend time evaluating the right cloud platform to fulfill their use-case and workload requirements.

Use-case requirements
Organizations need to consider whether the public cloud provider has a footprint in the desired geography or required country for privacy and governance compliance. In addition, ask how fast, easy and automated it is to spin up and scale the public cloud environment. Also consider if the public cloud infrastructure delivers easy-to-understand and predicable consumption-based economics. Finally, ask if the provider has the right set of mature cloud services delivering the performance and security features to fulfill the organization's requirements.

Workload requirements
Organizations want enterprise-class reliability and consistency when it comes to platform availability, performance and business continuity. Extending existing on-premises environments to the public cloud also requires organizations to consider whether the public cloud infrastructure can support these workload requirements, especially if they are planning to run business- or mission-critical applications.

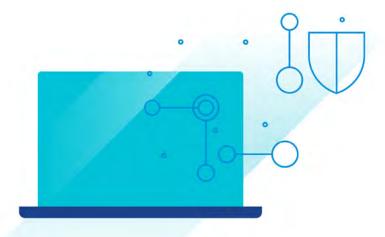## Factor #2: Integrating public cloud infrastructure

In addition to selecting the right cloud platform, organizations must also take into account several integration considerations.

Infrastructure compatibility and interoperability
When extending to the public cloud, it is important to consider whether the public cloud infrastructure is compatible with existing on-premises environments. Having the same hardware and software architecture on-premises and in the cloud reduces risk, mitigates interoperability issues, reduces integration challenges, and enables existing technology investments to be carried forward.

Application portability
Can applications be moved seamlessly between on-premises and the public cloud infrastructure without a lot of time, effort and changes? Having this capability enables IT teams to strategically decide where to place certain workloads depending on business needs. They also have the ability to move them without modifying the infrastructure or the application when those needs change. This capability becomes especially important in scenarios where application mobility is needed, for example doing test and development in the cloud and then moving the application back on-premises, or leveraging the cloud to move certain workloads to free up capacity on-premises during peak periods.

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68%
OF RESPONDENTS said they plan to map their existing infrastructure to cloud equivalents.[2]

89%
OF RESPONDENTS consider it important to have the same architecture on-premises and in the public cloud.[3]

76%
OF RESPONDENTS see managing cloud spend as a challenge, while a smaller 21% see it as a significant challenge.[4]

Flexibility in networking and connectivity
Each cloud provider has its own networking constructs and connectivity options, which may be different from the way networking is implemented on-premises. Organizations are advised to understand these constructs and topologies to enable their on-premises environments to integrate seamlessly. Further understanding the various options of connecting on-premises environments also helps expedite extension of your data center environment to the cloud. Capabilities such as Layer 2 network extensions allow workloads to talk over the same broadcast domain when they exist in different physical locations, removing the need to re-architect your existing network topology.

Consistency in security and governance
Approaches to security and governance are often different in the cloud. Consider how you are going to integrate and leverage your existing security and governance policies while extending to the cloud.

Licensing
Cloud and software technology providers have licensing schemes, and each is unique to individual providers. Understanding how these translate for the specific workloads that organizations are planning to run in the cloud has a direct impact on costs and supportability.

Factor #3: Operating the public cloud infrastructure

Cloud environments often require investments in new skills, tools and processes. This means that existing technology solution investments may not always be extensible or re-usable. When new skills, tools and processes are required, IT must face a steep learning curve and incorporate these new processes into existing paradigms of management, which contribute to increased operating costs. Finally, organizations need to have the right tools to manage cloud spend.

Familiarity of skills
Organizations have invested billions of dollars in infrastructure technology, management, and operations solutions, as well as in developing the skills of their IT teams. When incorporating native cloud platforms into existing infrastructures, much of that investment is not transferable, as public cloud infrastructures are built on proprietary technologies that are unique to each cloud provider. This causes organizations to maintain multiple operations teams or re-skill existing staff, adding costs and complexity to the process.

Consistency in management tools and processes
While extending data center environments to the public cloud, organizations must consider how these environments will be managed. With disparate cloud environments, it is often quite possible to have management tool and vendor sprawl, which increases operational complexity, unless this is taken as a design parameter at the onset. In fact, 80 percent of IT professionals responded that they prefer to consolidate on a large, integrated suite for hybrid cloud systems management from a single vendor.[2]

RESOURCES

Learn more about our VMware Cloud on the cloud service provider of your choice:

VMware Cloud on AWS

VMware Cloud on Dell

VMware Certified Cloud Partner Providers

Google Cloud VMware Engine

Azure VMware Solutions

Oracle VMware Solutions

IBM VMware Solutions

Conclusion

Rapidly, efficiently and cost-effectively extending data centers to the public cloud requires that organizations select the right public cloud platform for seamless integration and management consistency. To remove complexity from data center extension and integration with the public cloud, VMware partners with multiple Cloud Service Providers to deliver VMware Cloud™, a highly scalable, secure, and operationally consistent cloud service with direct access to powerful native cloud services.

At the heart of this service are familiar VMware technologies and common APIs that allow customers to continue utilizing their existing skillsets, tools, processes and policies. While the underlying hardware across these clouds differs in features, capabilities and performance levels, nevertheless, Intel® Virtualization Technologies enable easier migration across these cloud environments. At the same time, deploying VMware Cloud enables organizations to focus on business outcomes rather than re-tooling their people, processes and technologies. Designed for VMware customers, this service delivers enterprise-ready, highly scalable VMware vSphere-based environments on the cloud of your choice, allowing seamless workload portability.

Learn more at *vmware.com/cloud-solutions*.

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1. 451 Research. "Voice of the Enterprise: Digital Pulse, Vendor Evaluations 2018." (N=1,008)

2. Enterprise Strategy Group. "Hybrid Cloud Trends Survey." March 2019. (N=358)

3. VMware Core Metrics Survey. 2018. (N=1,633)

4. RightScale. "2018 State of the Cloud Report."