COMMVAULT®

WHY AND HOW YOUR ORGANIZATION
CAN BENEFIT FROM WORKLOAD PORTABILITY

Where are your workloads today, and where should they be in the future? The reality is that organizations need to support workloads across all architectures—on-premises, virtual infrastructure and cloud—and those workloads must be easily migrated to and from different environments.

IT organizations have more options than ever when it comes to determining where and how to deploy applications and workloads. The traditional on-premises-centric paradigm has evolved—if not completely been replaced by—one driven by virtualization hypervisors and different forms of cloud computing.

In fact, it's increasingly likely that organizations now deploy even strategic workloads on virtual machines (VMs) and different cloud architectures. Not only does it allow them to leverage the flexibility and economy of virtualization and cloud, but it also personifies the essence of agility— deploy workloads when and where it makes sense, without the negative impact of technology or vendor lock-in.

Consider the following realities:

- 87% of organizations already are using cloud computing for at least one mission-critical application.[1]
- By 2018, most organizations will have shifted more than 75% of their workloads to the cloud.[2]
- The typical enterprise already supports multiple virtualization hypervisors, a trend that has been accelerating in recent years.[3]

In order to fully leverage the new reality of heterogeneous computing platforms and architectures, organizations have quickly evolved their workload deployment and delivery models. Instead of determining which workloads belong on-premises, which ones need to be virtualized and which should reside in the cloud, organizations want—in fact, they demand—the flexibility to migrate workloads to and from different environments as conditions evolve.

This ability to move workloads from one environment to another and back again is called Workload Portability. Although it is a fairly new concept, it is quickly gaining momentum as IT professionals understand its benefits and avail themselves of new solutions to enable true Workload Portability. In a recent study of 244 IT professionals, 37% said they had heard the term and understood what it meant, while another 25% said that although they hadn't heard the term previously, they could understand its meaning without a definition.[4]

In fact, 39% of the respondents said they had implemented Workload Portability in some form to date. By far, the biggest driver for Workload Portability adoption is IT agility and flexibility, cited by more than 70% of respondents to the study.

WHY WORKLOAD PORTABILITY IS THE NEW REALITY

As more and more workloads move to virtualized infrastructure, the cloud or both, it's important to keep in mind that this does not necessarily equate to the death of the traditional on-premises

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1   Verizon customer survey of enterprise cloud customers, October 2015
2   "Verizon State of the Market: Enterprise Cloud 2016," Verizon, September 2015
3   2015 Purchasing Intentions Study, TechTarget Internal Research
4   "Affordability, Manageability Drive Demand For Cloud-Based DR," TechTarget (commissioned by Commvault), December 2015

data center. Far from it, in fact—especially with so much financial investment, institutional learning and familiarity associated with on-premises infrastructure. Heterogeneous computing, mixing and matching on-premises, VM and cloud, is a fact of life for IT organizations.

However, that doesn't lead to static rules and processes for workload deployment. The fact is that IT executives now demand the ability to leverage the stability of on-premises infrastructure, the economic benefits of VMs and the agility of cloud, regardless of workload.

Migrating workloads to—and from—the three different environments is now essential for enterprises, particularly when you add in such dynamic new issues as pervasive mobility, always-on commerce, virtual/extended workforces, high-performance computing, compliance and hyper-scalability.

These and other factors now demand that organizations must find new ways to achieve maximum agility, which translates into Workload Portability. Keeping all options open also means achieving the often-elusive goal of leveraging new technology tools when and where they arise, regardless of where workloads may be currently deployed.

Another key element of today's IT environment is the necessity of avoiding lock-in, either on technology or supplier. Organizations—and not just IT departments, but especially business leaders—want to ensure they can move workloads back and forth among multiple cloud service providers, as well as migrate among different virtualization hypervisors.

Of course, all this must still preserve long-standing, and often still worthwhile, investments in on-premises infrastructure, as well as taking advantage of exciting new trends within the data center such as converged infrastructure, software-defined storage and WAN optimization. At the same time, many IT decision-makers are heartened by the knowledge that many workloads still work at peak efficiency within on-premises environments.

Workload Portability isn't only about moving workloads, per se. Instead, think of it as optimizing choices in deploying workloads where and when it makes the most sense, operationally and financially. IT organizations crave the flexibility to determine the most cost-effective deployment and delivery platform, while bidirectional portability extends economic value by allowing real-time decision making for best economic value. The introduction of new Workload Portability tools has

allowed migration to take place in a highly automated fashion, in accordance with well-defined business rules and policy management.

Finally, the introduction of new tools and entire new categories of workloads, such as Hadoop and Spark for big data, as well as the complex web known as the Internet of Things, has made Workload Portability an integral part of organizations' IT operational framework.

HOW TO ENABLE WORKLOAD PORTABILITY

Although adopting Workload Portability is the first step, making it a successful journey—and to be clear, it's a journey, not an event—requires intense focus on process and business priorities.

At the heart of a successful Workload Portability program is getting everyone on the same page. Specifically, it means committing to—and taking steps to facilitate—greater collaboration among business unit leadership, end-user constituencies and IT decision-makers.

One undeniable reality in many enterprises has been the emergence of "shadow IT," where business users implement their own solutions without the help, or sometimes even the knowledge, of the IT organization. This has become increasingly prevalent in recent years with the growing popularity of public cloud and subscription-based cloud services, as well as the ease with which business groups can spin up dedicated VMs for sandbox projects.

This maze of business-initiated programs may serve the short-term needs of end-user groups, but they often create difficult impasses when those groups need to collaborate with other groups and access their data, which may reside in on-premises infrastructure, in a rogue VM or somewhere in a public cloud. Situations like this have become increasingly prevalent in recent years, making it essential to move workloads to and from different infrastructure environments.

Organizations also need to make sure there is a comprehensive, up-to-date inventory of all hypervisors, cloud services and one-off networks running workloads ranging from DevOps and file-sharing to cloud-based test beds and remote office data centers. Once the organization has complete and current visibility into all applications, hypervisors, devices and users, tools and processes can be put in place to eliminate vendor lock-in and facilitate on-demand migration.

Additionally, as end-user groups have become more confident in their ability to spin up VMs or can subscribe to affordable cloud services, the need to manage all elements on the network (physical and virtual) becomes more important—and more difficult. This places much greater emphasis on automation tools that not only spot and remediate anomalous network behavior (think about heightened security risks or performance bottlenecks), but also can do so without placing undue management burden on the IT staff.

Another key element to ensuring Workload Portability is to understand the best way to deploy and migrate workloads. For instance, it is common for organizations to deploy workloads in specific environments based on a departmental basis. Perhaps marketing workloads are considered Tier 2 in an organization, which may lead the IT department to deploy their workloads on a lower-cost infrastructure model, such as VMs.

But this approach fails to take into account the dynamic, rapidly changing nature of workloads. It is more realistic and appropriate to think about the workload's environment based on the task being performed. For instance, some organizations may look at a workload like compliance and assume that, since it is utilized in less-frequent intervals, it can be housed in a hybrid cloud. But things can change at a moment's notice, as an unexpected audit request or regulatory inquiry elevates the need for greater performance and security. In those and other similar cases, workloads must be moved quickly, reliably, securely and efficiently—and then back to another environment when circumstances warrant.

Of course, regardless of where workloads are deployed or how frequently they are migrated back and forth, it is vitally important to have tools that enable such platform-agnostic tasks as unified workload management and cross-platform recovery and self-service.

HOW COMMVAULT HELPS TO ENABLE WORKLOAD PORTABILITY

Since Workload Portability is, in its essence, about optimizing the use of different architectures for important workloads, it is important to work with a technology partner with diverse and proven experience in on-premises, virtualized and cloud environments.

Commvault has an extensive history of working with customers across all infrastructure and architecture models, with a deep and broad tools portfolio for migrating workloads from one

environment to another as conditions dictate. Commvault's tools—rooted in its award-winning Commvault Data Platform—include solutions that address a wide range of processes resident in any Workload Portability requirement.

These include:

- **VM backup and recovery.** These agentless solutions are application-aware and can be custom-fit to an organization's unique workloads and infrastructure.

- **Backup to cloud.** Commvault's long history of success in backup, archiving and recovery is enhanced by its ability to support more than 30 different cloud storage platforms. This helps IT decision-makers select the right CSP for individual workloads, without having to lock in a specific supplier.

- **Backup within the cloud.** For workloads that already exist within a cloud environment, Commvault's tools protect workloads against data loss.

- **Disaster recovery in the cloud.** Should a service interruption take place within a customer's on-premises infrastructure or in a VM environment, Commvault's tools enable automated, orchestrated recovery to the cloud.

- **Cross-platform recovery.** IT organizations increasingly demand flexibility and agility in recovering their workloads to different platforms in different environments as conditions change. Commvault's tools help ensure data recovery from VMs to cloud platforms and then back again. This bidirectional recovery is an essential requirement for today's agile IT organization, especially in a hypervisor-agnostic model, to avoid lock-in and mitigate risks normally associated with platform migration.

- **Cloud operations.** For organizations already committed to the cloud—be it public, private or hybrid—Commvault's capabilities include provisioning, management and development/testing in the cloud.

Commvault's overarching platform for Workload Portability—Commvault VM Backup, Recovery and Cloud Management—is designed to reduce complexity in moving workloads to their ideal environment. Tools such as DASH Copy, Virtualize Me and Workload Automation are purpose-built for seamless portability to and from on-premises, VM and cloud platforms.

With an established track record in backup, archiving, data protection, recovery and availability, Commvault gives customers confidence that their workloads will be deployed and managed in the most operational and financially appropriate environment. The result is platform independence, as well as more reliable operations and greater responsiveness to business stakeholders' demands.

CONCLUSION

Although Workload Portability is still in its early stages of market development, it is quickly gaining interest among IT and business professionals looking for the optimal flexibility and fluidity in computing architecture in rapidly changing business conditions.

Finding the right Workload Portability path requires organizations to understand how to balance such factors as enterprise priorities, maintaining value from legacy systems, gaining operational efficiencies from new architectures and aligning IT resources with business goals.

Obviously, there is no one right answer on how best to mix and match on-premises, virtualized and cloud environments for different workloads. Nor, for that matter, is there a single, static solution that an organization must adopt and adhere to over time. Flexibility is the hallmark of Workload Portability, allowing organizations to move workloads to and from different environments as business evolves.

When properly designed and deployed, Workload Portability enables organizations to achieve the optimal mix of utility, security and economic benefits, without locking the enterprise into specific technologies or suppliers. The ability to achieve bidirectional portability, seamless manageability and global accessibility to applications, data and services is the essence of Workload Portability, making it a centerpiece of many organizations' overarching IT strategy for the coming years.

For more information on how Commvault can help your organization define, deploy and benefit from Workload Portability solutions, go to **www.commvault.com**.