Reduce Management Overhead by Transforming VDI and App Management with the VMware Horizon Control Plane

vmware®

Table of contents

Remote Workforce Demands Increase Complexity

As organizations shift to new models of supporting work-from-anywhere workforces, new challenges have emerged in addition to some older ones.

Although many IT admins over the years have turned to virtual desktop infrastructure (VDI) and published apps to solve desktop and app management issues, there is still considerable room for optimization. As more people continue to work remotely, administration of virtual desktops and apps, operating system images, user entitlements—infrastructure in general—can become more cumbersome. Managing a dozen users might not be very difficult, but responsibility for hundreds or thousands of users and desktops across multiple clusters, clouds and physical locations can be daunting, even more so as the numbers increase.

Why?

First, many organizations face a multiplicity of vendors, products and solutions that are not all mutually compatible, and all or most require human intervention. Proliferation increases complexity.

This problem is compounded by the usual enterprise requirements for different workloads and privilege levels, whether by department, job function, or other criteria. It is also complicated by the requirements of specific applications as well as the need to deploy, scale and manage virtual desktops and apps. Different cloud models, such as on-premises (or private), public, and hybrid clouds, and multi-clouds, can add yet another layer of complexity.

FIGURE 1: Hybrid clouds span the continuum from on-premises to "pure" or cloud-only implementations. Multi-clouds can include multiple instances of private and public clouds.

Second, for those who do not want to implement a cloud-only solution right away, the path forward is not always easy or straightforward. This remains the case even as public cloud deployments increase.

Vendor Limitations Based on Requirements

Lack of clarity about current and near-future infrastructure solutions is partly due to the structural limitations of some of the largest vendors. For instance, most of the largest suppliers of cloud services fail to support businesses or institutions that rely on existing physical, on-premises infrastructure. This lack of hybrid support applies not only to desktops but to building blocks of the supporting infrastructure, such as pods of servers and other technology. For enterprises that have major investments in physical infrastructure, cloud-only solutions do not support existing on-premises investments—as hybrid cloud solutions do—or provide a clear or easy path to a full cloud implementation. For those that, like many universities and research institutions, need to continue to leverage existing investments even as they transition to newer models, these vendors do not offer a clear or viable transition. This is the case as well for government agencies and others who have special security needs.

Does this sound familiar?

The *Horizon Control Plane* simplifies management with cloud management services that connect entitlements and unify management across Horizon environments, on-premises and in the cloud.

User needs

When considering architecture and administration, it is important to remember why IT exists in the first place: to support users who, in turn, make it possible for the organization to fulfill its mission.

Users need access to their VMware Horizon® (or partner VDI) desktops and apps, whether located on-premises or in a cloud, whether the cloud is private, public, multi or hybrid. They also need easy access to the apps they rely on, regardless of their current location. Ideally, users should be able to access their virtual desktops and apps from a single URL.

IT, of course, needs to manage user entitlements as well as location and make sure users get the apps and access they need, safely and without delays or cumbersome authentication requirements: in other words, an excellent yet secure user experience.

Administrator needs

From an IT administrator's point of view, managing a large corporate environment can be a daunting task even at the best of times. The need to provision, configure, manage, and monitor desktops across pools, pods and clouds, for instance, can become increasingly complicated as demand grows and infrastructure is built out. Lack of compatibility between technology solutions and administrative tools makes it harder to track, troubleshoot and gain insight into ongoing processes.

Extra complexity also makes it harder to manage user authentication and entitlement and to reduce technical problems that impact the user experience, such as network latency and inefficient routing schemes, both of which can make response time unacceptably slow.

Enterprise needs

While IT keeps everything running, some of the main considerations at the enterprise level include business continuity, high availability, and disaster recovery, as well as the other use cases shown in Figure 2. Two other major priorities are security and cost containment.

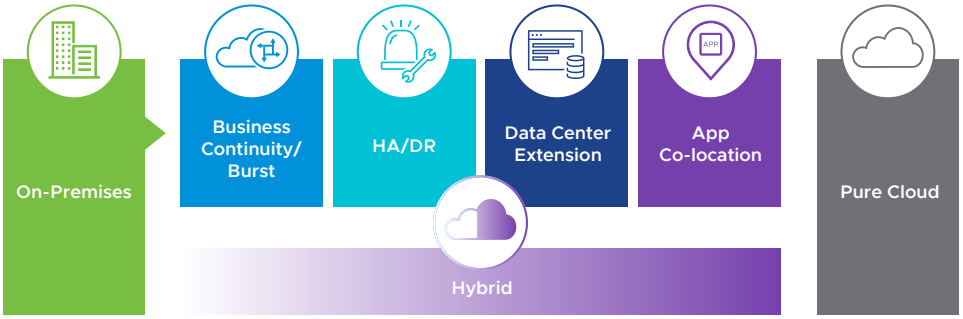

FIGURE 2: Hybrid cloud solutions span a wide range of use cases.

Security

In an age where attacks on tools and infrastructure are certain, IT and enterprise security need to focus on containment and mitigation as well as prevention. In this context, the protection strategies provided by *VMware Workspace ONE®* are especially useful.

Some government agencies and enterprises need to keep sensitive data on completely separate networks from the public Internet and keep all of their equipment on-premises, regardless of how it is configured. This is an effective strategy against electronic intrusion, but it is not practical or cost-effective for most businesses, and it is not completely effective against insider threats.

For most commercial enterprises and research institutions, a hybrid approach that combines on-premises Horizon infrastructure with cloud-based Horizon Control Plane administration makes more sense.

Cost containment

Costs always need to be considered. The easiest way to reduce capital expenditure (CapEX) is to leverage existing infrastructure, both physical and virtual, where feasible. Solutions that do not take this into account often end up being excessively expensive. Reductions in OpEx can also be achieved by streamlining the actual and virtual organization of the enterprise, using the most advanced tools to achieve efficiencies in IT management.

Some costs can be measured in time spent and services consumed. Although it is more difficult to assign specific metrics to time saved and stress avoided, the value of intangibles such as these is real, too.

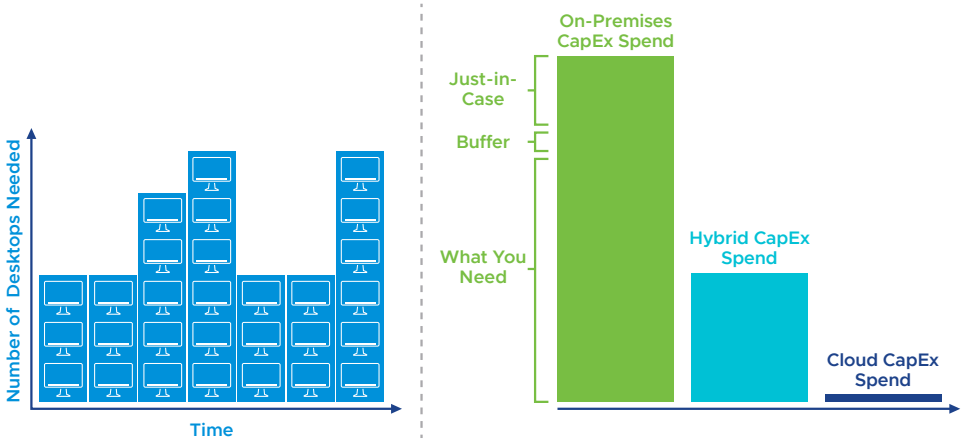

FIGURE 3: Reduce upfront CapEx with a hybrid-cloud approach.

VMware Horizon Control Plane Services

VMware designed Horizon Control Plane Services to meet challenges that have existed since the introduction of cloud technology. These challenges have become more pressing with the prevalence of remote work and the need for hybrid solutions for organizations that own their own physical infrastructure. The Horizon Control Plane Services described below give administrators the power to perform many functions across the entire enterprise infrastructure, including clouds, pods, applications and desktops.

On-premises deployments

Organizations that need or want to maintain an on-premises Horizon deployment can benefit significantly from a hybrid cloud solution. In these situations, VMware Horizon Control Plane Services add the advantages of cloud-native management services without requiring redeployment. This can represent a significant cost saving as well as reducing disruption.

Hybrid and cloud-hosted deployments

Organizations that use virtual desktops and apps from companies that support only cloud solutions can benefit from the ability of Horizon Control Plane Services to manage virtual desktops and apps in hybrid and multi-cloud environments.

Some organizations have existing VDI implementations that can operate only in clouds, without the ability to support on-premises or hybrid capabilities. For such cases, VMware Horizon can add substantial value by managing on-premises infrastructure as well as virtual desktops in hybrid and multi-cloud configurations.

Horizon Control Plane Service descriptions

VMware Horizon Control Plane Services address the major challenges now facing IT at this moment in history, including a coherent transition to hybrid cloud–based solutions. They use a multi-tenant, cloud-scale architecture that enables administrators to choose where virtual desktops and applications reside and to simplify traditional IT management, setup and routine administrative tasks.

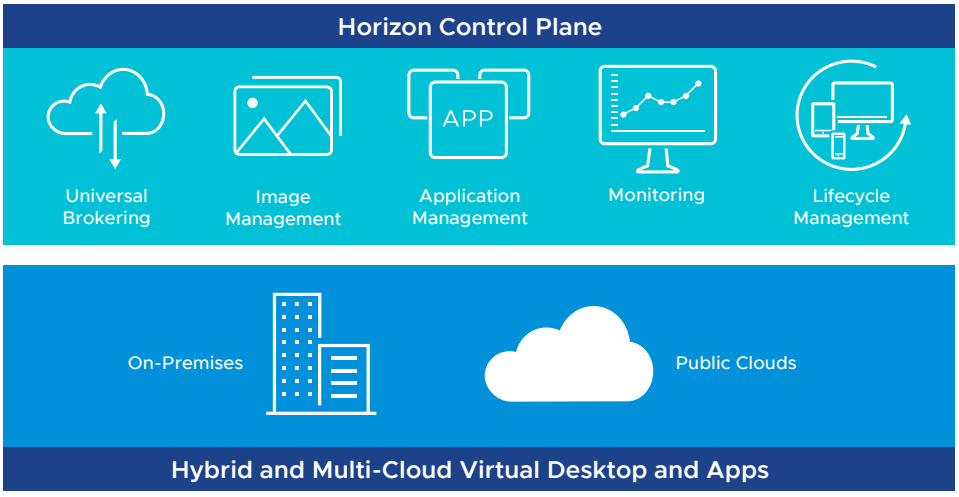

FIGURE 4: Access a set of management services available in the Horizon Control Plane to efficiently deploy, manage and scale virtual desktops and apps across all Horizon environments, on-premises and in the cloud.

Universal brokering

The Universal Broker enables administrators to entitle end users to virtual desktop and application assignments that span multiple sites. Because it is aware of geographical locality and pod topology and connectivity, the Universal Broker maximizes resource-matching and redirection of requests for resources from unavailable pods to available pods. Automated brokering across pods helps route users to their virtual workspaces according to rules set up by IT, such as location or performance requirements. IT can simply set up a single broker URL where end users can access their virtual desktops and apps instead of having to look in multiple locations. This end-user benefit has proven to be helpful for end-user experience and adoption.

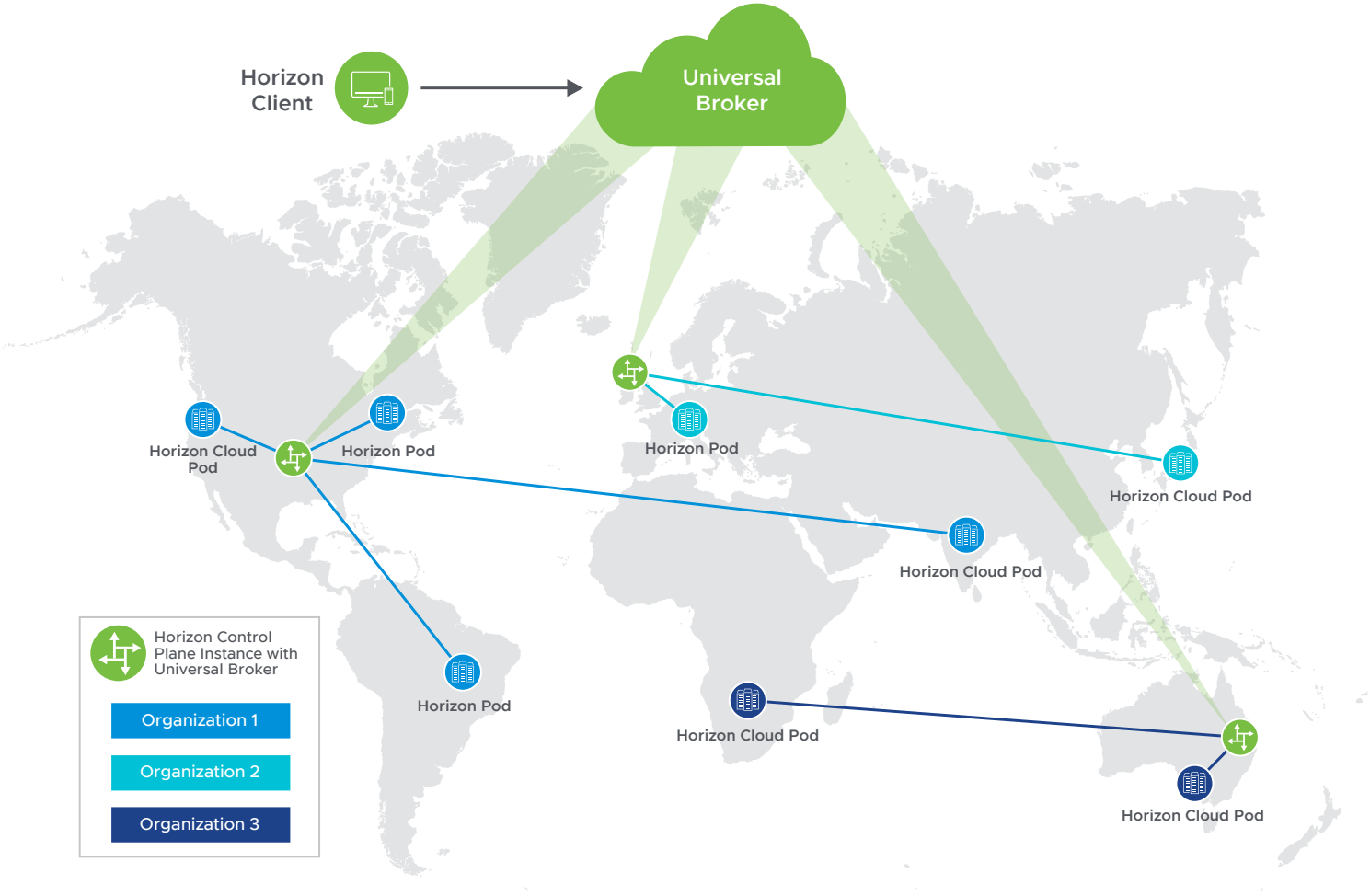

FIGURE 5: Universal Broker provides unified access to virtual desktop and application assignments across hybrid and multi-cloud deployments.

The Universal Broker also separates end-user authentication traffic from protocol traffic, eliminating problems that sometimes arise with hybrid or multi-cloud deployments. Placing Unified Access Gateways (UAG) near the workloads shortens the path between desktops and applications to improve performance.

Simpler network configuration that removes east-west traffic overhead for Horizon pods so that pods that use the Universal Broker no longer require line of sight to each other or inter-pod network connectivity.

Image management

Administrators often have to manage dozens of images for different pods, functions, and clouds—not to mention the time involved in creating and managing complex scripts that many organizations consider necessary for image management. Maintaining multiple operating system images with their respective patches and proper version control in addition to applications is not a trivial task under the best conditions. It often becomes more complicated as the number of users and applications increases and is always more labor-intensive when tasks have to be repeated.

The Horizon Image Management Service (IMS) simplifies and automates the management of images used by desktop assignments, such as desktop pools and farms, across cloud-connected Horizon pods. IT can build a single, reusable image catalog instead of managing fleets of duplicate objects.

IMS also reduces image maintenance time and costs by managing and distributing desktop images centrally across Horizon environments, both on-premises and in the cloud, with markers to help orchestrate image updates and rollbacks for individual user groups and desktop pools. In addition to tracking changes of images, markers help automate the replication of images to multiple locations. The key to managing images is the amount of time that can be saved with a given approach. With IMS, admin time and effort can be reduced significantly.

Application management

VMware App Volumes™ simplifies application delivery by packaging applications once and deploying them across Horizon environments, on-premises and in the cloud. It reduces image count and maintenance requirements as well as application packaging complexity by managing applications separately from operating system images.

App Volumes virtualizes and delivers applications in real time as users log in and out of their desktops. This reduces storage costs associated with traditional app installation, removes the challenges of uninstallation, and simplifies lifecycle management for both VDI and published apps. As users log into their virtual desktops, apps simply get attached to their desktop to help provide a persistent experience, while IT can benefit from non-persistent economics based on reducing app lifecycle management time and storage costs.

Monitoring

The Cloud Monitoring Service (CMS) monitors capacity, usage, and health within and across a fleet of cloud-connected pods, regardless of the underlying Horizon infrastructure components or deployment environments where individual pods reside.

CMS retrieves capacity, health, and usage-related data from the pod and presents it in the Horizon Universal Console, a single pane of glass for working with each tenant's fleet of cloud-connected pods. CMS organizes data into various dashboard views to present the overall health and navigate to the health, capacity, and usage metrics at various levels. It also provides data for many reporting views within the console's Reports page and within the user cards where operations to support individual users are performed.

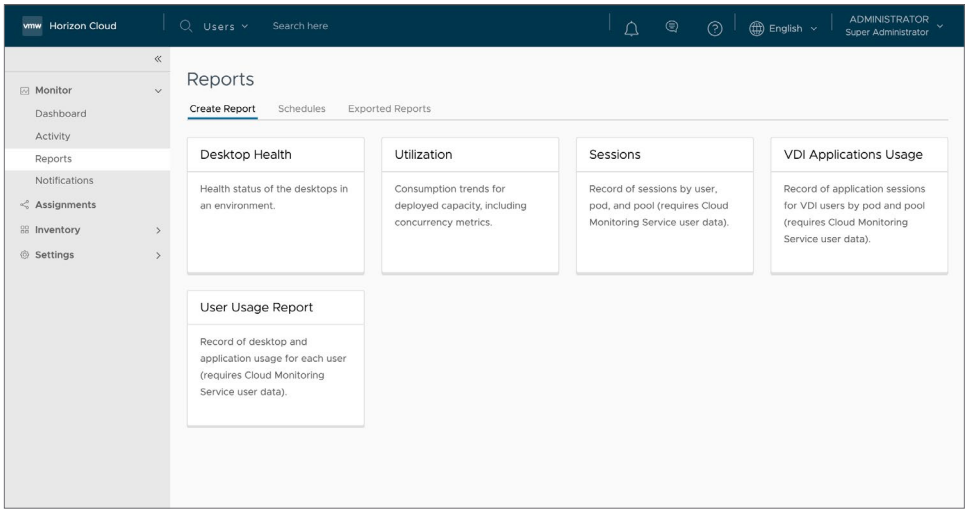

FIGURE 6: Create custom reports in the Horizon Universal Console.

Each Horizon Control Plane Cloud Monitoring Service (CMS) component runs as a cloud service. Some components run in Horizon pods to gather information required for Help Desk troubleshooting functionality. The Horizon Agent collects metrics locally from users' virtual machines and reports those metrics back to the Horizon Control Plane.

Horizon lifecycle management

Initial onboarding and configuration can also be simplified in a Horizon environment on any cloud or Horizon infrastructure. In addition, Horizon infrastructure in environments such as VMware Cloud on AWS and Horizon Cloud on Azure can be installed, upgraded, and scaled automatically with built-in automation and lifecycle management. Apart from the savings in effort and overhead, removing manual steps helps IT to eliminate potential leaks in process, which can also impact security in a VDI and app environment. More automation placed around the lifecycle of Horizon infrastructure also saves time, as evidenced by Desktop-as-a-Service technologies such as Horizon Cloud.

Cloud-based administration console

Horizon deployments and the Horizon Control Plane Services are managed through the Horizon Console and Horizon Universal Console. The Horizon Universal Console is a single user interface helps to reduce downtime with real-time health monitoring of user sessions, virtual desktops, and apps across Horizon environments, both on-premises and in the cloud. It also leverages the Help Desk service to troubleshoot user sessions with detailed metrics and can help to improve performance by capturing metrics such as CPU, memory, and disk performance and latency to provide insights across locations and different types of deployments. Historical graphs for sessions allow IT admins to go back in time to view performance, capacity, usage and health, all of which are useful for capacity planning. Because it is cloud-based, the Horizon Universal Console also stays up to date for all customers to use.

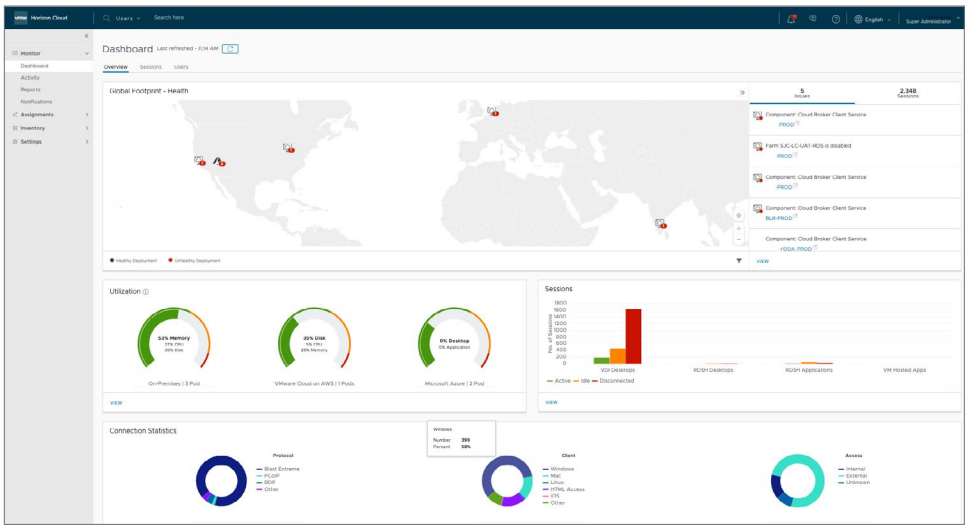

FIGURE 7: Dashboard View in the Horizon Universal Console

Conclusion

In spite of increasing momentum toward adoption of cloud-only solutions, many organizations need to maintain on-premises deployments, whether for security, budgetary or other reasons. This remains true even as they explore the benefits of cloud-based administration and partial-cloud solutions. For stability and continuity, they also need proven, reliable ways to adopt more cloud-based technology over time: the journey to the cloud.

Cloud-only solutions, however, cannot administer on-premises or hybrid environments. VMware Horizon Control Plane Services, on the other hand, integrate and manage on-premises, hybrid, and multi-cloud implementations across clouds and pods in Horizon virtual desktop and app environments. Customers can achieve cost savings by taking advantage of the Horizon Control Plane, with services that are always up to date, such as a powerful administration console, image management, application management, and universal brokering.

As organizations plan their VDI and app environments to support work-from-anywhere workforces, desktop and app workloads do not necessarily have to move to the public cloud to take advantage of hybridity. The Horizon Control Plane Services can help organizations in their journey towards optimizing desktop and app workloads, no matter where they are hosted. The path towards simplified VDI and app management begins with the Horizon Control Plane, which streamlines administration of large VDI and app deployments and reduces traditional management overhead.

Test-drive the full technical capabilities of the Horizon Control Plane with a guided tutorial in the *VMware Horizon Hands-on Lab*.

Try out Horizon in your own environment with the *90-Day Trial of Horizon Universal Subscription*.

VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 vmware.com Item No: FY21-6155-VMW-HORIZON-CONTROL-PLANE-WP-WEB-USLET-20210115 1/21