IBM Cloud and Rackspace Technology Hosting Virtual Labs for VMware Explore 2024

VMware Cloud Service Provider Partners

IBM Cloud and Rackspace Technology

VCSP Partner Tier

Pinnacle

Customer

Broadcom IT

Industry

Technology

Customer Challenges

- Ensuring HOL availability and performance throughout the conference
- Minimizing latency for conference attendees
- Supporting thousands of virtual labs concurrently
- Reducing the cost and time to establish and maintain environments

Executive Summary

In the fast-paced world of IT services, the ability to seamlessly host large-scale events is a testament to an organization's expertise, operational efficiency and showcase value. Based on the exceptional results from past VMware Explore events, the Hands-on-Labs (HOL) team chose to engage Rackspace Technology and IBM Cloud using their VMware Cloud Foundation (VCF) Managed Services to host the VMware Explore 2024 HOL environment. The event anticipates spinning up over 11K labs for about 15K attendees, in Las Vegas and Barcelona, to provide a real-time experience on the VMware Labs Platform.

This case study delves into the VMware HOL team's past success of expanding their 11-person team with VCF Managed Services to help deliver thousands of labs to Las Vegas and Barcelona VMware Explore attendees. It showcases how, in less than 2 weeks, with effective planning, robust infrastructure, a dedicated team of experts from the Rackspace Technology and IBM Cloud teams, an organization was able to deliver an HOL environment (built on VCF), complete testing to ensure optimal performance, reliability, and attendee satisfaction during the event. The HOL team experienced a seamless extension to their organization, while delivering a successful and highly efficient business result.

This study highlights Rackspace Technology and IBM Cloud infrastructure using their existing VMware service capabilities and underscores their commitment to delivering exceptional service in critical and high-stakes environments.

Explore Attendee Feedback

"My favorite part of #VMwareExplore is the Hands-On Labs where I get to try stuff without worrying about breaking Prod/Dev (I mean, Prod IS Dev right?)"

"Appreciate the focus on hands-on learning and interactivity in the labs and workshops."

"The staff was very helpful, and the lab was easy to navigate."

"It's time to face up with some labs. This is the best way to improve your knowledge"

VMware's Immersive Virtual Lab Experience

HOL provides a real-time self-service environment for customers to simulate real-world scenarios, validate value propositions, learn how to use features, test configurations, and access and experience VMware solutions without purchasing a license or equipment. Since launching in 2013, HOL has become a well-trafficked destination for organizations to immerse themselves in VMware services, the HOL IT team delivered over 528,000 labs to 114k customers in 2023. While the HOL program is available on-demand, it experiences a significant uptick in usage during VMware Explore and industry-wide conferences. The task of managing and supporting HOL has been no small feat for the VMware IT team—especially when administering roughly 23K labs at 424 industry-wide events annually, with increasing lab engagement times from 45 minutes per lab to 51 minutes in the last 6 months (see Figure 1 for architectural overview).

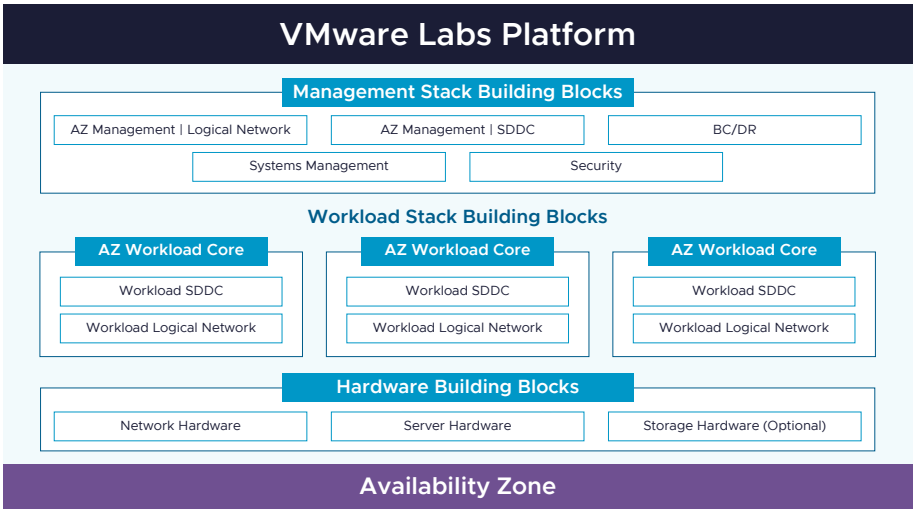

Figure 1: VMware Hands-on Labs Platform Architecture Overview

Navigating Capacity Constraints and Choosing VCF Managed Services

As Broadcom began gearing up for 2024 VMware Explore, they needed to plan an increase of infrastructure to support the HOL volume projected. Brandon Bazan, HOL IT Applications Engineer shared, "At Explore, we have limited capacity and when our server racks are at full capacity and we can't add more, we need to explore options for bursting capacity elsewhere. That's either the public cloud or collaborating with partners who have the capacity to support HOLs." While the team has automation to start a VCF deployment within minutes, building and maintaining this capacity in-house would require more than 3 months to accommodate lengthy hardware lead times, additional costs, and the need for dedicated resources, to physically rack, stack, and configure the environments with no time for unplanned delays or setbacks.

Solution

- VCF Managed Services

Customer Outcomes

- Deliver 550k labs a year
- Bursting capacity set up in 2 weeks to support thousands of HOL labs
- Rapidly spun up and down cloud environments
- Streamlined configuration and lifecycle management
- Reduced IT burden, management, and costs
- Bolstered service reliability and performance
- Ensured high availability for attendees
- ~7,200 labs consuming 93,315 VMs, 354,326 NSX networks, over 1.3PB of vSAN storage during the course of the 4 days

VMware Cloud Service Provider Partner Solutions

- IBM Cloud® for VCF as-a-Service
- Rackspace SDDC Flex

Choosing to expand to the public cloud would require building a VMware Cloud Director instance that's capable of consuming the public clouds. This would require modifying the architecture, which is not a small effort of resources and time.

Working with VMware Cloud Service Provider (VCSP) Pinnacle partners, like Rackspace Technology and IBM Cloud, accelerates the timeline as they can provide the VCF capacity needed in days, and in many cases within hours. The advantages include not having to shift priorities to build additional capacity, and the delivery is much faster.

"There is no room for errors or downtime, so working with our VCSP partners Rackspace Technology and IBM Cloud's robust technology is reassuring and their level of expertise is similar to our team's." said Joshua Schnee, Broadcom Distinguished Engineer. "Explore has some of the largest content being served. We're able to create content and spin it up in advance using VMware Lab Platform and make it available for customers to take a lab in about 60 seconds."

Delivering HOLs at the VMware Explore Conference

HOLs were originally employed as an on-premises private cloud solution which transitioned to a hybrid cloud solution, featuring VMware Cloud™, as demands grew. This year, up to 50% of Explore's HOL capacity will run through VCSP VCF Managed Cloud Services, with similar requirements as an on-premises solution. (see Table 1).

Table 1: HOL Managed Service Requirements

Solution	VCF SDDCs (Complete with VMware vCenter and VMware NSX)
RAM	40TB
Allocated Storage	300TB
Additional	Ability to work with Broadcom IT around nested workload requirements and make changes as needed

Broadcom IT chose IBM Cloud and Rackspace Technology, both VMware Cloud Service Provider (VCSP) Pinnacle partners in the Broadcom Advantage Program, to partner with for 2024. Based on their 2022 and 2023 successful Explore executions with VCF Managed Services, the IT team made the decision to engage them again for the 2024 delivery.

History taught that within 2 weeks the HOL team was able to quickly and easily access VCF Private Cloud infrastructure, achieving scale to support HOL demand and performance for several Explore events, without shifting priorities or resources significantly reducing time, cost, and IT burden. Rather than physically building and maintaining the capacity in-house, IBM Cloud and Rackspace Technology deliver a highly robust, performant, and secure cloud infrastructure, based on existing VCF services to support tens of thousands of labs concurrently running in highly virtualized environments.

Another notable advantage was the geographically dispersed IBM Cloud and Rackspace Technology environments, which played a crucial role in ensuring seamless failover in case of unexpected disasters. Additionally, the extra capacity effectively prevented user latencies during peak lab cycles. This setup enabled live event attendees to thoroughly test VCF end-to-end, covering aspects such as HOL content preparedness, cloud latency, and UI look and feel. Additionally, IBM Cloud and Rackspace Technology excelled in a wide variety of performance analysis disciplines such as storage performance, network redundancy, high-churn VM analysis, and simulated user testing. Ultimately, this approach ensured a highly immersive and engaging experience for all conference participants.

Over the course of the events partners:

IBM Cloud for VMware Cloud Foundation as a Service delivered:

250 labs per hour

~2.64 GB/sec network bandwidth

~136k IOPS

Maxed out at 99.3% of capacity

Rackspace SDDC Flex delivered:

209 labs per hour

~99K IOPS

Maxed out at 96.8% of capacity

"The pure scale of our automation and management helped maintain performance for thousands of labs during that 3-4 day period."

Bryan Litchford
VP of Private Cloud
Rackspace Technology

Rackspace Technology Solution Spotlight

Rackspace SDDC Flex, built on VCF and VMware Cloud Director, offered a fully managed, low-latency platform that simplified the deployment of VCF environments. Conference attendees enjoyed self-service access to consume VMware services and features, while IT teams could solely focus resources on optimizing the HOL user experience. This allowed VMware to scale capacity to accommodate peak conference volumes, repurpose internal resources, and simplify the lift of hosting and configuring the underlying cloud infrastructure. In 2024, Rackspace Technology has rolled out Rackspace Lab Services to provide clients a rich learning environment for internal and external facing training. This offer delivers a performant experience that clients have experienced at Explore.

"Our goal was provisioning VCF capacity in minutes and delivering four nines of availability."

Phil Fritz
Senior Product Manager
IBM Cloud

IBM Cloud Solution Spotlight

IBM Cloud® for VMware Cloud Foundation as a Service provided an end-to-end solution that seamlessly handles the configuration, hosting, operations, and lifecycle management of the underlying cloud infrastructure. This enabled the rapid deployment of VMware-based cloud computing environments at scale. IBM Cloud enabled users to provision environments in minutes, complete with pre-configured compute and storage resources, providing an on-demand experience to test and validate VMware services and capabilities.

In addition to supporting the 2024 HOLs, IBM Cloud will introduce their own lab to familiarize customers with the new version of their service with modern automation, along with both improved performance and consumption features. They have a 24*7 support team to ensure the networking, storage and compute performance meets expectations and they use VMware management tools to quickly address any potential issues.

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