Holodeck 9.0

Simplifying VMware Cloud Foundation Lab Deployments for Testing and Training Purpose

Project URL

https://vmware.github.io/Holodeck/

Features

Nested VCF lab environment

Self-provision networking services

Automated global configuration for VCF deployment specification

Deployment orchestration

Idempotency

Use Cases

VCF training and enablement

Hands on Labs

Proof of Concept (POC)

Testing and Development

Download

In today's fast-moving landscape, the ability to validate new technical capabilities with speed and confidence is no longer optional—it's essential. Traditionally, standing up VMware Cloud Foundation (VCF) environments for labs, education, and Proof of Concept (PoC) scenarios has been possible but often slowed down by manual steps, complex configurations, and significant hardware demands.

Holodeck changes that equation. It delivers a fully automated, self-contained, and repeatable environment that accelerates how customers, partners, and internal teams test, validate, and train on VCF. Whether it's integration and security testing, API and automation development, destructive testing, or hands-on training and certification enablement, Holodeck provides a safe and efficient way to explore, experiment, and learn.

For partners, Holodeck simplifies solution validation and joint procedure testing, enabling faster go-to-market readiness. For internal field and technical marketing teams, it provides a consistent, scalable framework for demo creation, education enablement, and PoC standardization. The result: faster testing cycles, reduced infrastructure overhead, and a smarter, repeatable path to innovation and knowledge building across the entire VMware Cloud Foundation ecosystem.

Significantly Reduced Hardware Requirements: Holodeck allows you to deploy VCF on a nested environment, enabling you to run a complete VCF environment on a single ESX host or a vSphere cluster with sufficient capacity. A typical VCF 9.0 deployment (four node management domain and three node virtual infrastructure (VI workload domain) can be nested with approximately 30 CPU cores, 325 GB memory, and 2 TB of storage.

Self-Contained Services: Holodeck comes with built-in common infrastructure services like NTP, DNS, BGP, and DHCP, making each environment truly independent and requiring only a single external IP. The holodeck also comes with an option of webtop that allows you to access the holorouter ui. The provision of BGP allows the creation of dual site as well, thus enabling the validation of replication and DR scenarios.

Isolated and Conflict-Free Networking: Eliminate the need for complex VLAN and BGP connections in your network during early testing phases. Holodeck can

Empowering the VMware Cloud Foundation Partner Ecosystem

The Broadcom partner ecosystem plays a vital role in driving innovation, interoperability, and customer success across the cloud infrastructure landscape. At Broadcom, we recognize that our partners are key to extending the value of VMware Cloud Foundation (VCF) through integrated solutions, validated designs, and specialized services.

Holodeck empowers our partners by simplifying the solution validation process on VCF. It provides a fully automated, preconfigured, and easily reproducible environment that partners can use to:

Validate Integration

Solution Interoperability with VCF

Upgrade and Lifecycle Validations

API Integration Testing

VCF Enablement and Certification

provide isolated networking, preventing conflicts with existing configurations and allowing for multiple, completely self-contained nested environments.

Automation and Repeatability: Deploying nested VCF environments with Holodeck is nearly hands-off and easily repeatable. This means your teams can spin up new testing environments quickly and consistently, accelerating your understanding and adoption of VCF's powerful features across various use cases.

Holodeck is your ideal partner for gaining a deeper understanding of how VCF functions. Holodeck 9.0 supports deploying both VCF 5.2.x and VCF 9.0.x environments.

Pre-requisites

1. **Holorouter appliance**: Holodeck is a set of PowerShell modules, runtime configuration files, and self-provisioning infrastructure services such as DNS, DHCP, Firewall, BGP, and NTP. packaged together in an OVA appliance called Holorouter. Download the Holorouter appliance from the Broadcom Support Portal.
2. **VCF Binaries**: You need the ESX host ISO image and the VCF installer (VCF 9.0) or VMware Cloud Builder appliance (for VCF 5.2.x) OVA. Other than these appliances you also need binaries for the rest of the VCF components. Holodeck supports both online and offline installation.
    a. **Download token**: The default deployment mode in Holodeck is online installation, and it requires a download token to fetch the VCF binaries from the Broadcom depot. Follow the instructions to obtain the download token here.
    b. **Offline depot (Optional)**: You can also use the offline depot or set up your own offline depot. Follow the steps to set up an offline depot here.
3. **Physical Environment, aka Target Environment**: Holodeck needs the underlying physical environment on which the nested VCF environment can be deployed. This is referred to as the target host in Holodeck. The following environments are supported as target hosts:
    a. **vCenter Server:** Needs to have a vSphere cluster. Holodeck 9.0 supports portgroups backed by Standard vSwitch, Distributed vSwitch, and NSX backed portgroups.
    b. **Standalone ESX host:** A single standalone ESX host (Version 8u3 and above) is supported.

    Note: If you have a single host but part of vCenter server then please ensure that it is added in a vSphere cluster and provide vCenter server url as the target host detail. A vSphere cluster with a single host is also supported.

Why Holodeck for VCF lab deployments?

Built-In Pre-Checks

Deploy with confidence! Automated validations ensure all prerequisites are met before deployment begins.

Global Configuration

A single source of truth! Manage all your VCF deployment configs through a single config file.

Idempotent Deployments

No more starting from scratch. Resume failed deployments exactly where they left off with smart state tracking.

Network Manager

Zero-touch network setup with built-in infrastructure services! VLANs, IPs, BGP, and DNS are auto-configured using a default or custom CIDR.

4. **Resource requirements**

Holodeck – Compute, Network, Storage Requirements				
Site	**CPU**	**Memory**	**Storage**	**Network**
Single Site	24	384 GB	2 TB	Trunk Port Group – VLAN IDs for Site-A (0, 10-25)
Dual Site	32	1 TB	4 TB	Trunk Port Group – VLAN IDs for Site-A (0, 10-25) and VLAN IDs for Site-B (40-58)

Getting Started with Holodeck 9.0

Deploy Holorouter Appliance

Building a nested VCF lab is a fairly simple process with Holodeck 9.0. The deployment begins with installing the Holorouter appliance. Once the appliance is up and running, you can use the Holodeck PowerShell modules to deploy the nested lab instance. Follow the deployment and installation instructions here.

Create Global Config

Once the Holorouter appliance is deployed, you need to create a global configuration which will act as the single source of truth for the entire deployment. To create a global config, you need to specify the target host FQDN or IP address, username and password to authenticate the same. Run the below command to create the global configuration.

New-HolodeckConfig -Description "*Friendly description*" -TargetHost "xx.xx.xx.xx" -Username "Someuser" -Password "xxxxx"

Deploy VCF Instance

Deploying VCF Instance using Holodeck is simply a single line powershell command, i.e. New-HoloDeckInstance. Check out the detailed command usage here.

Supported Options

Following are supported deployment options.

Supported options and parameters	
vSAN Mode	OSA and ESA
VI Domain Type	Management domain and Workload domain
NSX Edge Cluster	Support for both management and workload domain
Supervisor Cluster	Yes, option to deploy supervisor cluster is available
VCF Automation	Yes
Add additional host	Yes
Add additional cluster	Yes
Dual Site	Yes

View the detailed documentation here.

Summary

Holodeck 9.0 redefines how you deploy and manage nested VCF lab environments. With a centralized configuration system, intelligent idempotent workflows, and fully automated networking, Holodeck simplifies the nested VCF deployments. Whether you're testing, training, or learning VCF, Holodeck is your launchpad for faster, smarter, and a more resilient VCF experience.