



VMware HCX - Technical Overview

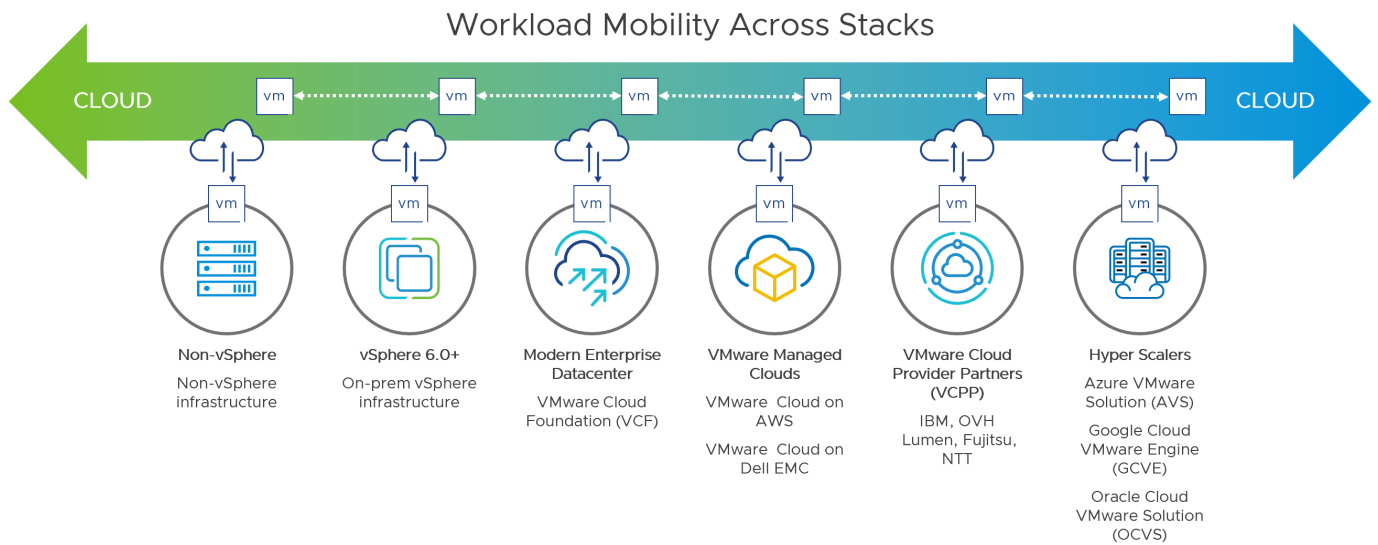
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VMware HCX - Technical Overview

What is VMware HCX?

VMware HCX®, an application mobility platform, simplifies application migration, workload rebalancing, and business continuity across data centers and clouds. VMware HCX enables high-performance, large-scale app mobility across VMware vSphere® and non-vSphere cloud and on-premises environments to accelerate data center modernization and cloud transformation. VMware HCX automates the creation of an optimized network interconnect and extension and facilitates interoperability across KVM, Hyper-V, and vSphere 6.0+ to current vSphere versions. This delivers live and bulk migration capabilities without redesigning the application or re-architecting networks.

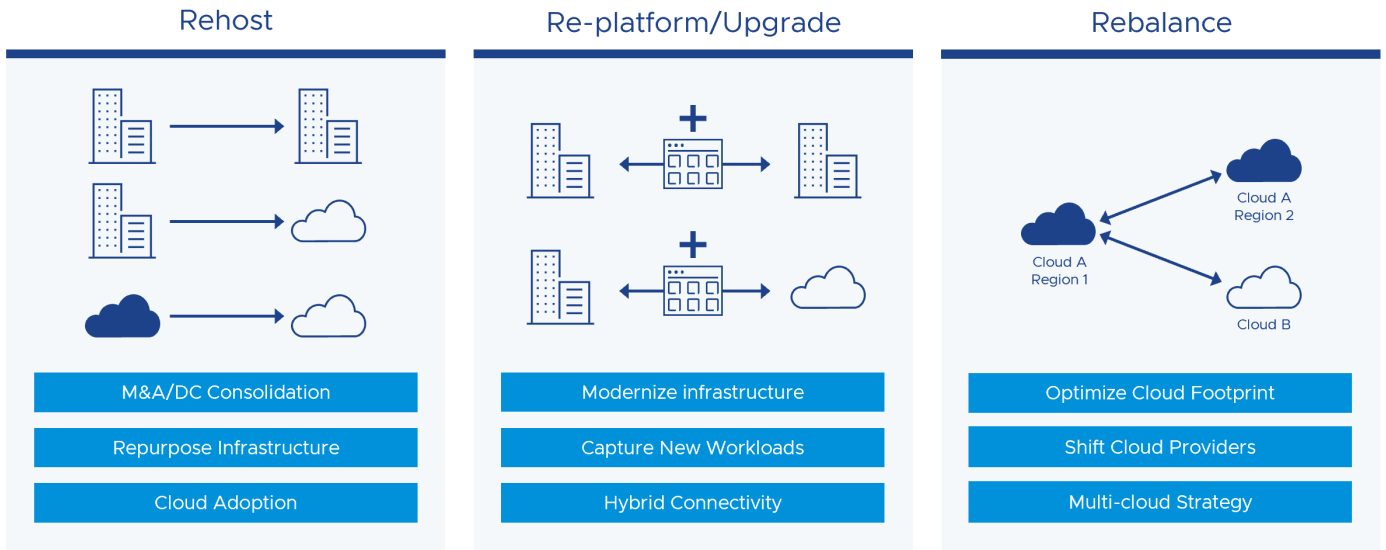


Why VMware HCX?

As organizations adopt hybrid and multi-cloud architectures leveraging VMware infrastructure, they stand up new environments locally and in the cloud to simplify operations and increase business agility. However, the promise of a modern data center or hybrid cloud can't be realized until applications and workloads exist in these new environments. VMware HCX enables data center and cloud transformations by simplifying the process of populating and continually optimizing application placement on modern VMware infrastructure.

VMware HCX unlocks the potential of new environments based on vSphere by building an abstraction layer that links on-premises data centers and clouds. This hybrid interconnects tethers sites so networks can automatically stretch securely across sites, enabling seamless mobility of virtual machines (VMs). VMware HCX enables hybrid capabilities in VMware vCenter® to allow for application migration to populate newly available infrastructure, workload rebalancing for ongoing optimization of cloud and local resources, and simplified disaster recovery by eliminating the need for network provisioning and configuration.

Use Cases



Application migration

Accelerate data center modernization with VMware HCX. Automatically create a hybrid interconnect to easily migrate thousands of vSphere and non-vSphere VMs within and across data centers and clouds without requiring reboot. Once migrated, swing networks without any retrofit/redesign.

Workload rebalancing

Move workloads at any time to meet scale, cost management, compliance, and vendor neutrality goals. Actively rebalance your cloud and on-premises application footprint with VMware HCX as an always-on, secure, highthroughput, WAN-optimized, hybrid interconnect that tethers cloud to on-premises estates for on-demand migration, data center extension, and cloud bursting.

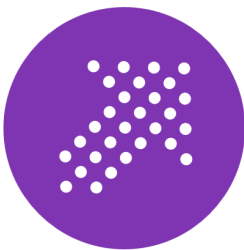
Business continuity and disaster protection

Leverage the VMware HCX hybrid interconnect and rapid migration capabilities to protect workloads by replicating data across common VMware infrastructure in two or more places. Back up critical workloads on demand, or schedule for disaster recovery planning seamlessly and securely with no reconfiguration of IPs. VMware HCX now integrates with VMware Site Recovery Manager™ for advanced use cases.

Key capabilities

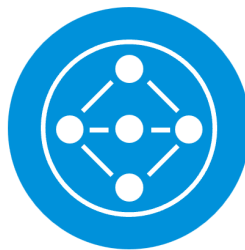
Perform a bulk migration of live VMs - Simply schedule the movement of hundreds of VMs in parallel. Utilize simple migration planning tools - Easily identify the application and workload relationships, and logically group VMs for efficient migration. Enable mobility across data centers and clouds - Move VMs within your data center—from your local data center to the cloud, or across cloud regions or providers—to optimize resource utilization. Migrate with zero downtime - Don't worry about IP re-architecting.

Migrate across any vSphere versions (6.0+) - Eliminate the need to invest in bringing both sites up to parity, enabling you to modernize your data centers with the full software-defined data center (SDDC)/VMware Cloud Foundation™ stack, managed service, or infrastructure as a service (IaaS). Migrate non-vSphere workloads - Migrate KVM and Hyper-V workloads to current vSphere versions compatible with full VMware Cloud™, VMware Cloud Foundation, VMware Cloud Provider™ Program, and IaaS offerings. Work across the WAN and LAN - Enable a unique model of infrastructure with a mix of private, public, and hybrid clouds, based on workload requirements. Seamlessly extend your network and IP space - Extensively reduce complexity and ensure your IP addressing policies, security policies, and administrative boundaries are not broken.



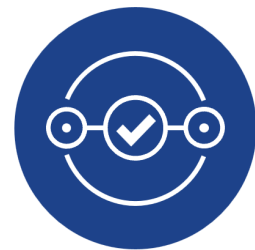
Workload Mobility

- Cold Migration
- Bulk Migration
- vMotion
- Replication assisted vMotion
- OS assisted Migration
- Mobility Groups
- Migration Estimation



WAN Optimization

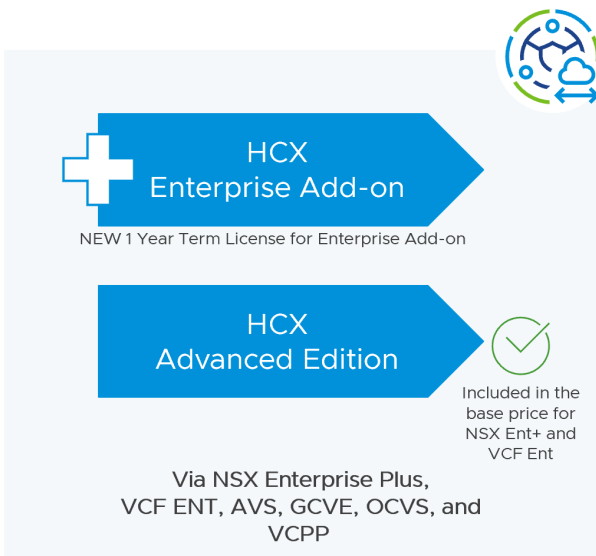
- Data De-duplication
- Line Conditioning



Hybrid Connectivity

- Network Extension (NE)
- NE High Availability
- Traffic Engineering
- Mobility Optimized Networking

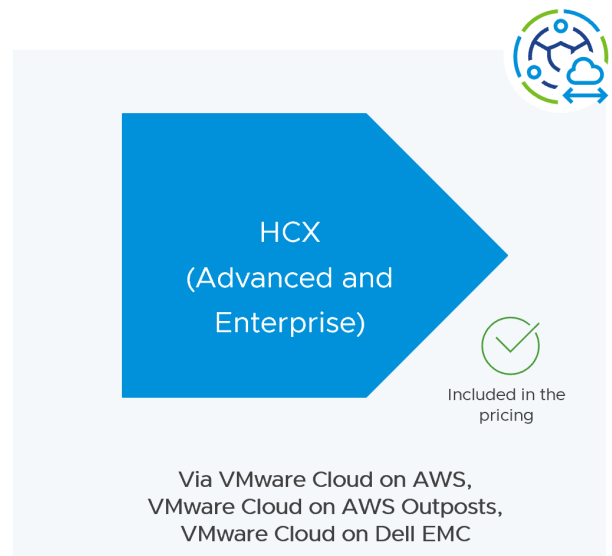
HCX Editions



HCX Enterprise Add-on
NEW 1 Year Term License for Enterprise Add-on

HCX Advanced Edition
Included in the base price for NSX Ent+ and VCF Ent

Via NSX Enterprise Plus, VCF ENT, AVS, GCVE, OCVS, and VCPP



HCX (Advanced and Enterprise)
Included in the pricing

Via VMware Cloud on AWS, VMware Cloud on AWS Outposts, VMware Cloud on Dell EMC

HCX Licenses and Services

ADVANCED



Hybrid Interconnect



HCX Network Extension



WAN Optimization



Disaster Recovery



vMotion Live Migration



Bulk Migration w/reboot



Cloud to Cloud Migration

ENTERPRISE



OS Assisted vMotion



Replication Assisted vMotion



Mobility Groups



Traffic Engineering



Mobility Optimized Networking



Network Extension HA

What is the difference between HCX Advanced and HCX Enterprise

	<p>Activates standard VMware HCX services:</p> <ul style="list-style-type: none"> • Hybrid interconnect • WAN optimization • Legacy vSphere to modern mobility • Bulk migration • Live migration • cloud-to-cloud migration • Disaster protection
	<p>Activates premium VMware HCX services:</p> <ul style="list-style-type: none"> • HCX Replication Assisted vMotion® (bulk, no-downtime migration) • Migrations from KVM and Hyper-V to vSphere • Traffic engineering • Mobility groups • Mobility-optimized networking



Services/ Features	Advanced	Enterprise (Add-on)
Hybrid Interconnect	✓	Included
WAN Optimization <small>Deduplication / Compression</small>	✓	Included
Bulk Migration	✓	Included
Cross-Cloud vMotion	✓	Included
Disaster Recovery	✓	Included
Network Extension	✓	Included
Network Extension HA		✓
Replication Assisted vMotion		✓
OS Assisted Migration		✓
Mobility Groups		✓
Traffic Engineering <small>TCP Flow Conditioning / Application Path Resiliency</small>		✓
Mobility Optimized Networking		✓

VMware HCX bundles and availability

VMware HCX is primarily delivered as a bundled set of functionality in VMware software-defined data center (SDDC) offerings on-premises and in the cloud. See Figure 2 for details on how VMware HCX is made available today within the various bundled SDDC solutions.

Summary and Additional Resources

Conclusion

This document helped you get a high-level understanding and overview of VMware HCX. To learn more about the product explore our hands-on lab and Demos.

Additional Resources

For more information about VMware HCX, explore the [VMware HCX Activity Path](#). The activity path provides step-by-step guidance to help you increase your understanding of the VMware HCX offerings, including articles, videos, and labs.

Additional Resources:

- Videos, Demos, Docs & More: <https://cloud.vmware.com/vmware-hcx>
- Give HCX a Try -with our Hands-on Lab : <https://labs.hol.vmware.com/HOL/catalogs/lab/10288>
- Read our latest VMware HCX blogs : <https://cloud.vmware.com/community/hybrid-cloud-extension/>
- Read VMware HCX documentation: <https://docs.vmware.com/en/VMware-HCX/index.html>
- Check out the HCX Release Notes: <https://docs.vmware.com/en/VMware-HCX/services/rn/VMware-HCX-Release-Notes.html>

Change Log

The following updates were made to this guide:

Date	Description of Changes
2022/04/15	

Authors and Contributors

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