

Migrating Workloads on AWS / VMC

NetApp Solutions

NetApp April 26, 2024

This PDF was generated from https://docs.netapp.com/us-en/netapp-solutions/ehc/aws-migrate-vmware-hcx.html on April 26, 2024. Always check docs.netapp.com for the latest.

Table of Contents

Migrating Workloads on AWS / VMC	1
TR 4942: Migrate Workloads to FSx ONTAP datastore using VMware HCX	1

Migrating Workloads on AWS / VMC

TR 4942: Migrate Workloads to FSx ONTAP datastore using VMware HCX

Author(s): NetApp Solutions Engineering

Overview: Migrating virtual machines with VMware HCX, FSx ONTAP supplemental datastores, and VMware Cloud

A common use case for VMware Cloud (VMC) on Amazon Web Services (AWS), with its supplemental NFS datastore on Amazon FSx for NetApp ONTAP, is the migration of VMware workloads. VMware HCX is a preferred option and provides various migration methods to move on-premises virtual machines (VMs) and their data, running on any VMware supported datastores, to VMC datastores, which includes supplemental NFS datastores on FSx for ONTAP.

VMware HCX is primarily a mobility platform that is designed to simplify workload migration, workload rebalancing, and business continuity across clouds. It is included as part of VMware Cloud on AWS and offers many ways to migrate workloads and can be used for disaster recovery (DR) operations.

This document provides step-by-step guidance for deploying and configuring VMware HCX, including all its main components, on-premises and on the cloud data center side, which enables various VM migration mechanisms.

For more information, see Introduction to HCX Deployments and Install Checklist B - HCX with a VMware Cloud on AWS SDDC Destination Environment.

High-level steps

This list provides the high-level steps to install and configure VMware HCX:

- 1. Activate HCX for the VMC software-defined data center (SDDC) through VMware Cloud Services Console.
- 2. Download and deploy the HCX Connector OVA installer in the on-premises vCenter Server.
- 3. Activate HCX with a license key.
- 4. Pair on-premises VMware HCX Connector with VMC HCX Cloud Manager.
- 5. Configure the network profile, compute profile, and service mesh.
- 6. (Optional) Perform Network Extension to extend the network and avoid re-IP.
- 7. Validate the appliance status and ensure that migration is possible.
- 8. Migrate the VM workloads.

Prerequisites

Before you begin, make sure the following prerequisites are met. For more information, see Preparing for HCX Installation. After the prerequisites are in place, including connectivity, configure and activate HCX by generating a license key from the VMware HCX Console at VMC. After HCX is activated, the vCenter Plug- in is deployed and can be accessed by using the vCenter Console for management.

The following installation steps must be completed before proceeding with HCX activation and deployment:

- 1. Use an existing VMC SDDC or create a new SDDC following this NetApp link or this VMware link.
- 2. The network path from the on-premises vCenter environment to the VMC SDDC must support migration of VMs by using vMotion.
- 3. Make sure the required firewall rules and ports are allowed for vMotion traffic between the onpremises vCenter Server and the SDDC vCenter.
- 4. The FSx for ONTAP NFS volume should be mounted as a supplemental datastore in the VMC SDDC. To attach the NFS datastores to the appropriate cluster, follow the steps outlined in this NetApp link or this VMware link.

High Level Architecture

For testing purposes, the on-premises lab environment used for this validation was connected through a site-to-site VPN to AWS VPC, which allowed on-premises connectivity to AWS and to VMware cloud SDDC through External transit gateway. HCX migration and network extension traffic flows over the internet between on-premises and VMware cloud destination SDDC. This architecture can be modified to use Direct Connect private virtual interfaces.

The following image depicts the high-level architecture.



Solution Deployment

Follow the series of steps to complete the deployment of this solution:

Step 1: Activate HCX through VMC SDDC using the Add-ons option

To perform the installation, complete the following steps:

- 1. Log in to the VMC Console at vmc.vmware.com and access Inventory.
- 2. To select the appropriate SDDC and access Add- ons, click View Details on SDDC and select the Add Ons tab.
- 3. Click Activate for VMware HCX.



- 4. After the deployment is complete, validate the deployment by confirming that HCX Manager and its associated plug-ins are available in vCenter Console.
- 5. Create the appropriate Management Gateway firewalls to open the ports necessary to access HCX Cloud Manager.HCX Cloud Manager is now ready for HCX operations.

For the on-premises Connector to communicate with the HCX Manager in VMC, make sure that the appropriate firewall ports are open in the on-premises environment.

- 1. From the VMC Console, navigate to the HCX Dashboard, go to Administration, and select the Systems Update tab. Click Request a Download Link for the HCX Connector OVA image.
- 2. With the HCX Connector downloaded, deploy the OVA in the on-premises vCenter Server. Right- click vSphere Cluster and select the Deploy OVF Template option.

😑 vSphere Client	Q	C 2 American Apple Coccom	× © Ø>
	* III A300-Cluster	01 Excritions	
- 0 aldo-veradience	Deploy OVF Template	Select an OVF template ×	
 B ADDO DataCan D ADDO Can aDDO Can 	Select an OVE template Select a name and folder	Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.	1714
☐ 2000-81 ☐ 2000-81 > ② 2001-94 > ③ 2007-94	Select a compute resource A Review details Select storage	Local file UPLOAD FILES VMware-HCX-Connector-4: ova	
+ (3. WSANF - (3. HOL,DH (2. HOL (3. HOL) (3. HOL	 Ready to complete 		
8 HOL 8 HOL 6 HOL 8 HOL			
(2) HOL (2) HOL	Protoc.2)	CANCEL NEXT	
A Recent Tasks	Alarms		

- 3. Enter the required information in the Deploy OVF Template wizard, click Next and then Finish to deploy the VMware HCX Connector OVA.
- 4. Power on the virtual appliance manually.For step- by- step instructions, go to VMware HCX User Guide.

After you deploy the VMware HCX Connector OVA on-premises and start the appliance, complete the following steps to activate HCX Connector. Generate the license key from the VMware HCX Console at VMC and input the license during the VMware HCX Connector setup.

- 1. From the VMware Cloud Console, go to Inventory, select the SDDC, and click View Details. From the Add Ons tab, in the VMware HCX tile, click Open HCX.
- 2. From the Activation Keys tab, click Create Activation Key. Select the System Type as HCX Connector and click Confirm to generate the key. Copy the activation key.

vm	VMware HCX								۵ ۵		NetApp * III
Sub	criptions Activation Keys	SDDCs									C DARK
Act	ivation Keys									CR	EATE ACTIVATION KEY
	Activation Key	×	Status y	Subscription	7	System Type	Ŧ	System Id	L	τ.	Created
1	ABIEI	\$3	CONSUMED	VMware Cloud on AWS (HEX Connector		205	73		9/19/22, 9:24 AM
÷	9202	75	CONSUMED	VMware Cloud on AWS (HCK Cloud		201	15321		9/16/22, 9:56 AM
1	100	(846	DEACTIVATED	VMware Coud on AWS		HCX Cloud		202	26		8/11/22, 12:23 PM
											Showing 1 - 3 of 3 entries
											10440



A separate key is required for each HCX Connector deployed on-premises.

3. Log in to the on-premises VMware HCX Connector at https://hcxconnectorIP:9443 using administrator credentials.



Use the password defined during the OVA deployment.

4. In the Licensing section, enter the activation key copied from step 2 and click Activate.



The on-premises HCX Connector must have internet access for the activation to complete successfully.

- Under Datacenter Location, provide the desired location for installing the VMware HCX Manager onpremises. Click Continue.
- 6. Under System Name, update the name and click Continue.
- 7. Select Yes and then Continue.
- 8. Under Connect Your vCenter, provide the IP address or fully qualified domain name (FQDN) and the credentials for the vCenter Server and click Continue.



Use the FQDN to avoid communication issues later.

9. Under Configure SSO/PSC, provide the Platform Services Controller's FQDN or IP address and click Continue.



Enter the vCenter Server's IP address or FQDN.

- 10. Verify that the information is entered correctly and click Restart.
- 11. After complete, the vCenter Server is displayed as green. Both the vCenter Server and SSO must

have the correct configuration parameters, which should be the same as the previous page.



This process should take approximately 10–20 minutes and for the plug-in to be added to the vCenter Server.

- 0		/1/241/294.19/3443/httem	anager-ui/index.htm#;	/dambeard			172.21.254.157	Version: 4.410	9
m HCX Manager	Dashboard	Appliance Summary	Configuration	Administration			- addition of the second second	Type: Connector	admin
O VMware-HCX	-440				0	CPU		Free 688 MHZ	
FODN:	VMware-HCX-440.	ehcdc.com			0	Used 1407 MHZ		Capacity 2095 MHZ	07%
IP Address:	172.2					Memory		Free 2316 MB	
Version:	4.4.1.0				()	Liter 9691MB		Canacity 12008 MB	81%
Uptime:	20 days, 21 hours,	9 minutes	3					capacity according	
Current Time:	Tuesday, 13 Septer	nber 2022 07:44:11 PM UTC	0		\bigcirc	Storage		Free 98G	23%
						Used 29G		Capacity 1276	0
NSX			vCenter			SSO			
			https://a300-vcs	a01.ehcdc.com	•	https://a300-vcsa01.ehcdc.c	om		_
			MANAGE			MANAGE			

Step 4: Pair on-premises VMware HCX Connector with VMC HCX Cloud Manager

1. To create a site pair between the on-premises vCenter Server and the VMC SDDC, log in to the onpremises vCenter Server and access the HCX vSphere Web Client Plug- in.

hortcuts											
nventories											
([])	ð		0			000		$\langle q_{p}^{p} \rangle$	(٢	
Hosts and Clusters	VMs and Templates	Storage	Networking	Content Libraries	Global Inventory Lists	Workload Management	SnapCenter Plug-in for VMware vSphere	Cloud Provider Migration	Site Recovery	нсх	
Ionitoring											
圖		E.	R		\sim						
Task Console	Event Console	VM Customization Specifications	VM Storage Policies	Host Profiles	Lifecycle Manager	ONTAP tools					
dministratio	'n										

2. Under Infrastructure, click Add a Site Pairing. To authenticate the remote site, enter the VMC HCX Cloud Manager URL or IP address and the credentials for the CloudAdmin role.

= vSphere Client Q			C & American precision - Q O-
HCX Distograd Misabluchurs	si si	ite Pairing	C ADD A SITE PAIRING
State Parkage Set Parkage Set and comment Set and comment Set and comment Parkage Parkage Parkage Parkage Parkage Parkage Parkage Parkage Parkage Parkage	*	HCX Cloud - F5xNDemoSDDC Ontgo: 07222233537403 Ontgo: 07222233537403 Ontgo: 07222233537403 Ontgo: 07222234557403 Ontgo: 07222234557403 Ontgo: 07222234557403 Ontgo: 07222234557403 Ontgo: 0722234557403 Ontgo: 0722234557403 Ontgo: 0722234557403 Ontgo: 0722234557403 Ontgo: 0722234557403 Ontgo: 072234557403 Ontgo: 07223455740 Ontgo: 0722345574 Ontgo: 0722345574 Ontgo: 0722345574 Ontgo: 0722345574 Ontgo: 072234557	
System & Administration © Support	*		



HCX information can be retrieved from the SDDC Settings page.

		0 4	NittAce
	(Back	OPEN NSX MANAGER OP	EN VCENTER ACTIONS
Laurchped	FSxNDemoSDDC VMC on AVIS SDDC 🖗 US WWW (Dreport)		
Inventory	Summary Networking & Security Storage Add Ons Maintenance Troubleshooting Settings Support		
Subscriptions			
Activity Log	SDDC		
Tools	> Management Appliances NK		
Developer Center			
Montenance	vCenter Information		
repaired on the second second	Default vCenter User		
	Account		
	3 vSphere Claint (HT36.5)		
	vCenter Server API		
	b RowarCLiConnect		
	N (Parties PDPA)		
	HCX Information		
	C FCX FOON		
	vick Flops Amazeum Amazeum Public (P - read-table from Internet Public (P -	Provis (* 172.30.161.215	a'o
	NSX Information		
	3 NEX Manager button default access		

ladmin@wmc.local

CANCEL



VMware HCX Connector must be able to communicate with the HCX Cloud Manager IP over port 443.

4. After the pairing is created, the newly configured site pairing is available on the HCX Dashboard.

The VMware HCX Interconnect (HCX-IX) appliance provides secure tunnel capabilities over the internet and private connections to the target site that enable replication and vMotion-based capabilities. The interconnect provides encryption, traffic engineering, and an SD-WAN. To create the HCI-IX Interconnect Appliance, complete the following steps:

1. Under Infrastructure, select Interconnect > Multi-Site Service Mesh > Compute Profiles > Create Compute Profile.



Compute profiles contain the compute, storage, and network deployment parameters required to deploy an interconnect virtual appliance. They also specify which portion of the VMware data center will be accessible to the HCX service.

For detailed instructions, see Creating a Compute Profile.

← → C	0&≠	2 P+ https://a300-vcsa01.ehodc.com/ui/app/blu	gin/com.vmware.hybridity/com.vmware.ho	x.hybridConnect		Ŷ		0 =
\equiv vSphere Client O	٤.				2 84	oministrator@EHCDC.COM Ϋ	٢	@~
HCX Deshiboard Infrastructure Ste Paining Network Extension Migration Migration System System System Support	~	Interconnect Multi-Site Service Mesh. Compute Hollies Service Mesh Network P hcxdemo hcxdemo hcxdemo Hold alloo exat0, ends condo host 02022 Minist	rolles Sentinel Management	compute Networks ©VM_3510 Management Network Container Detrains Ex- Petwork Sentainer United	(vignere ili tension Applia ed)		OUTE PRO	DFILE
		Compute Pristler is bong used in 2 Server	CauMemory Reservations (2 100%) IES 100% Medigent					

- After the compute profile is created, create the network profile by selecting Multi-Site Service Mesh > Network Profiles > Create Network Profile.
- 3. The network profile defines a range of IP address and networks that will be used by HCX for its virtual appliances.



This will require two or more IP address. These IP addresses will be assigned from the management network to virtual appliances.

\equiv vSphere Client Q						C &	Administrator@EHCDC.COM	~ ©	0
HCX Dashboard Infrastructure Site Pairing Infractionnect Transport Analytics Services	×	Interconnect Multi-Site Service Mesh Compute Profiles Service Mesh	Notwork Profiles Senti	net Management			Q. C. CREATE	NETWORK P	ROFILE
Network Extension Migration Disaster Recovery System So Administration So Support	~	Network Details Dacking VM_3510 show more	MTU 9000	P Pools P Ranges 172.21.254.80 - 172.21.254.95	IP Usage(Used/Total) 4/16	Prefix Longth 24	Gateway 172-21-254-230		
		EDIT DELETE							

For detailed instructions, see Creating a Network Profile.



If you are connecting with an SD-WAN over the internet, you have to reserve public IPs under the Networking and Security section.

4. To create a service mesh, select the Service Mesh tab within the Interconnect option and select onpremises and VMC SDDC sites.

The service mesh establishes a local and remote compute and network profile pair.

vm VMware HCX		()- administrator-
O Dashboard Infrastructure Stre Paring Infrastructure Transport Analytics Services On Network Edemson	Interconnect Multi-Site Service Mesh Compute Profiles Service Mesh Network Profiles Service Management	Q. C CREATE SERVICE MESH
n Migration	100007	
Obsaster Recovery Administration As System Updates Troubleshooting Audit Logs	Sta Faren VMAnaze-HCC-440 Readp Numer Numer Numer Statemen	,
 O Activity Logs Q Alerts ● DICE 	VIEW APPLIANCES RESYNC EDIT DELETE MORE-	



Part of this process involves deploying HCX appliances that will be automatically configured on both the source and target sites, creating a secure transport fabric.

5. Select the source and remote compute profiles and click Continue.

Palast Constants Parties					
Select Compute Profiles	the behindly applying. The balance	and the state of the	e automo Metta di Machines a	will be white to charge one birth participant	
Select Source Compute Profile (naximo)	and showed services, one testor	Select Period	Compute Profile V Comp	putePrinte(conterc)	
A HIGH \$300 - ecold anoth sample hold \$2521 is in critical (red) state for service of	ngute				
A Host above exclutiences completions 3292) is in orms (red) state for deproyme	nt container compose				CONT
			0	0202000	
			SUDE distances		
		12000000	P agent dansar		
	O hadens	0088900			
	all the second second				
			A		
			El Manaprint un	• <u> </u>	

6. Select the service to be activated and click Continue.

Edit Service Mesh		1 2 3 4	51		×
Select Services to be activated					
OS Assisted Migration Service carit to SRM Integration Service cannot be set	e selected as one or both the compute profiles sele lected as they are not licensed with this HCK install	icted in previous step doesn't have these services ac ation.	tivated.		
Hybra interconnect (WAN Optimization @	Cross-clause Vetcherskipration (3)		Replication Assisted VMOdon Megration (j)	Network Extension (2)
Electropowerg		US Availables Magazitiek @			
AD-Iducine	North deserver of a weaking strates produced as an Example of the standard of				CONTINUE



An HCX Enterprise license is required for Replication Assisted vMotion Migration, SRM Integration, and OS Assisted Migration.

7. Create a name for the service mesh and click Finish to begin the creation process. The deployment should take approximately 30 minutes to complete. After the service mesh is configured, the virtual infrastructure and networking required to migrate the workload VMs has been created.

≡ viphere Glent Q								C 2		
	1 in	tercon	nect							
Openhant .			and lotest							
effedructies	· · ·									
🖉 Lite Paring		Corpus Por	a monthe monthem [benetingent]							
1. Transport AAAAIss		+	KC0007 V						CON SERVICE	
Services.	휘드	Atterne	BARPINER CTURE							
Co Austriació (bitarialian										
C Migration			And American Streem	1. 2 Assessed Table 12 of Address		Turnet Inner	Darrente Manager	distant result		
System A elementation O Support	×	0.	00007-0-0 er 1059-07-0-126-07-0000 000056-0506 Kannaue ADDO-DURION Manage ADDO-DURION		(international)	•	4422	A418		
Chaun		9.38	COULD HE IN IN UPDAY INTO ANY ARXIV DETAILS CARD Consume XXXX, VYY, 2010 Temper XXXX, VYY, 2010 Memory Memory Cold Self/Clif Internet Research State	Station 722048 (manage		۲	4420	****		
			00001-005-0 w 6.8817749-7895-set54-set56-e(3.88-862566 Formave 3.790-0-005660 Sormays 4.500-3473_05054	Compare and the second			1234	N/A		
										1.00
		Applianc	es on hox.liebf1b0b76d14cc68e3f85 westeurope.a	ni.adum.com-doud						
		Addresse	1210	Approved Type - Children					Career.	
		0000140						88.01		
		-00307 H	4.0	69 Control Tilling					48.0.1	P.
		100001 W	o in	Comas or					7.141	

Step 6: Migrating Workloads

HCX provides bidirectional migration services between two or more distinct environments such as onpremises and VMC SDDCs. Application workloads can be migrated to and from HCX activated sites using a variety of migration technologies such as HCX bulk migration, HCX vMotion, HCX Cold migration, HCX Replication Assisted vMotion (available with HCX Enterprise edition), and HCX OS Assisted Migration (available with HCX Enterprise edition).

To learn more about available HCX migration technologies, see VMware HCX Migration Types

The HCX-IX appliance uses the Mobility Agent service to perform vMotion, Cold, and Replication Assisted vMotion (RAV) migrations.



The HCX-IX appliance adds the Mobility Agent service as a host object in the vCenter Server. The processor, memory, storage and networking resources displayed on this object do not represent actual consumption on the physical hypervisor hosting the IX appliance.

\equiv vSphere Client Q	
<u>n</u> 19 e q	Interview Interview Actions Summary Monitor Configure Permissions VMs Resource Pools Datastores Networks Updates
 ✓ Ø a300-ucsa01ebccc.com ✓ 图 A300-DataCenter > 图 A300-Duster01 > 图 TempCluster > 图 172.21254.80 > 图 172.21254.82 	Hypervisor: V/Mware ESX0, 7.0.3, 20305777 Model: V/Mware Mobility Platform Processor Type: V/Mware Mobility Platform Logical Processor: 769 NICk: 8 Virtual Machines: 0 State Connected Uptime: 29 days

VMware HCX vMotion

This section describes the HCX vMotion mechanism. This migration technology uses the VMware vMotion protocol to migrate a VM to VMC SDDC. The vMotion migration option is used for migrating the VM state of a single VM at a time. There is no service interruption during this migration method.



Network Extension should be in place (for the port group in which the VM is attached) in order to migrate the VM without the need to make an IP address change.

1. From the on-premises vSphere client, go to Inventory, right- click on the VM to be migrated, and select HCX Actions > Migrate to HCX Target Site.

= vSphere Client O, no	Actives - HCX_Photon_34 Power Garet CS	5 0	noton 14	> 0 0	₫ 82 Jactons			С	A American State Concerns	- e o	
0 8 8 8	Shapahots	2	ontor carb	gure Permis	more patantores Networks						
A 300-Vessol amore com A 300-DataCenter Cli A 300-Castardit	dit Migrate Clone	,		Durnt OS Compatibility	VMeans Photon OS (54-bit) EDD 6.7 and later (VM version M)				1 W	OPU ULALE	
🕼 e300-eset01ahoac.com	Pault Tolerance	7		Ohis Name	 Burring, version millib (buest Manual work pers) processor 			85 20			
artiti-execting encode come	VM Policies		INSOLE	PASSFLIPL	VEW ALL 2 IP ADDRESSES				E	3106408 USAGE	
ANF_HOLDenio AntThenio	Template Compatibility	2	I COMBOLE D	0 IS	e300-weed1abcdc.com						
 G washing 	Export System Logs					^	Notes			*	
A HOLDER	dji buk Settings.			100 E 21	000 08. 0.02 08 memory active		Custom Attributes				
@ HCX_Proton_17-166300	Move to folder			2.08			Alliade				
(B. HCK/Hotol.)/B	Edit Notes		hapter 1 tve t	VWU Deco	Nicereand:						
₫ HCKJHNNH_JO	1495 & GARDER ALLENGERS	-		4.508							
(B. HCK/Hosse,24	B HCK,Incor,31 Add Permetion B HCK,Incor,36 Allerts		te Device on th support for		ce on the virtual machine PIG but that p port for the virtual machine communicat	the virtual machine PO bus that provides or the virtual machine communication interface				The North In District of	
HCX_Proton_27	Annual Date Statemy			Asse	Coral Hardware						
Tack Name T Tacget			* Ovten	24	T Mater T	Samed 7	start.free a T	Campleton Title T	Service	÷.	
Delete falser D HCK_the Reconfigure virtual mach. (2) HCK_the	vSAN ton_34_xK, TNetApp SnapCenter	ſ	Alignate to H	ica: Target Site	PHCOC COMPAGNINGTIAN	1m 2m	09/13/2022, 4 #5 37 P 09/13/2022, 4 #5 05	09/13/2022, # 45:37 P, 09/15/2022, # 45:00 -	a300-veca01 abodo com a300-veca01 abodo com		
Move entities (D) VML mgr	Mart te ctar	-	HI ROLECT OF H	Co rangee sale	COC COM Agriculture	4 /78	09/13/2022 4:45:04	09/13/2022 4 45-04	a303-vçaldt enclat.com	4.00	

2. In the Migrate Virtual Machine wizard, select the Remote Site Connection (target VMC SDDC).

 Select Connection (there are 2 records found) 				C Reload	Connecti
Source: VMware-HCX-440 / VC a300-	vcsa01.ehcdc.com Destination: (select)				
OT 100 156 8	/ VC 172.30.156.2				
✓ Transfer and Placement:					
	(Mandatory: Storage)		(Migration Profile)		~
	Same format as source	~	(Optional: Switchover Schedule)		0
> Switchover:					
Extended Options: Edit Extended Options					
O selected				9	
VM for Migration	Disk / Memory / vCPU		Migration Info		
C Loading data					

3. Add a group name and under Transfer and Placement, update the mandatory fields (Cluster, Storage, and Destination Network), Click Validate.

Source: VMware-HCX-440 / V → Ø Destination: HCX Cloud - FSx https://doc.org/10.1000/000000000000000000000000000000	C a300-vcsa01.eho NDemoSDDC / V	:dc.com © vcenter.sddc-54-188-6-128.vmware	mc.com		C Relaad Connecti
oup Name: vMotion-vm14-2-vmc			Batch size: 1vm	/ 2GB/ 2GB/ 1	cru 🖀 Select VMs for Migratio
 Transfer and Placement: 					·
Compute-ResourcePool		DemoDS01 (II644GB/1018)		vMotion	~
Workloads		Same format as source	~	(Optional: Switchover Scher	oule) O
Switchover:					
Force Power-off VM Extended Options:		Remove Snapshots Force unmount ISO images			
Force Power-off VM Extended Options: Edit Extended Options Petals	шс	Remove Snapshots Force unmount ISO Images Disk / Memory / vCPU		Migration Info	Q.
Force Power-off VM Extended Options: Edit Extended Options Retain	шс)	Remove Snapshots Remove Snapshots Porce unmount ISO Images Disk / Memory / vCPU 2.58 2.068 Jun PU		Migration Info	Q.
	ыс) •	Remove Snapshots Porce unmount ISO Images Disk / Memory / vCPU 2 GB / 1 vCPU December / vCPU C D December / vCPU		Migration Info	a.
Force Power-off VM Extended Options: East Extended Options Pectals 1 M for Migration + HCX_Photon_14 Compute-ResourcePool Workloads	•	Remove Snapshots Porce unmount ISO Images Disk / Memory / vCPU 2 GB / 2 GB / 1 vCPU DemoDS01 (BE4GB/1978) At Same format as source		Migration Info	

4. After the validation checks are complete, click Go to initiate the migration.



The vMotion transfer captures the VM active memory, its execution state, its IP address, and its MAC address. For more information about the requirements and limitations of HCX vMotion, see Understanding VMware HCX vMotion and Cold Migration.

5. You can monitor the progress and completion of the vMotion from the HCX > Migration dashboard.

		101													- 6
ex Distributes		* *	figration = Tracking	E Management	() WORATE) (I) (e]								
🖉 Site Parrys		20	Name		¥964/ \$144	age/ Marmer	d UPSN		Property		Mart		D4	Status	
12 Transport Analytics			* a300-vc	sa01.ehcdc.com 🔶	 vcenter.s 	ddc-54-18	18-6-128.v	mwarevno	ic.com						
 Matwork Estanaion 		38	v vikinos entit	2 vmc	4.	108	2.66 (100% Northy	- GaftNgani			Č.	0	8
Migrature			0 .Qm	includ											
Disalder Recovery			" D.YHOUR	una,14 😋		2.08	2.06.1		Designed and		04:55 Hz			Datibuter stated	
C. Solari			Orsthater Myrator	Tuiler (D Vishlaads Sillers (Balan Mac) (Ba	nive (BCs)	VM_2601-3	1505-a0041a	м		Maleitenam Service M	e Weslew : ED P roh Narres - VMC C 4	ter Schude	Art		
				C MOS						T min age	that Gal	incling tand	rce details		
			> Cont22-21	0.000		8 GE -	108 1		() Mgutan	Levitchurar Create 1 train agu Complete	that Gal	inclog saw	rce details		
			> Cont22.25	0 1000	4	8 C.0. 8 C.0.	8-08- 4 8-08- 4		() Mgatan () Mgatan	seitchuner Exercite 1 I mit age Complete Complete	that ca	ucting sand	rce details		
			> Cierzz 25 > VM/E-0 > VM/S	0.000	4	8 CB - 8 CB - 2 CE -	8.08 4 8.08 4 2.08 1		O Mayatan O Mayatan O Mayatan	Leithnia: Eierle 1 teit age Complete Complete Complete	ther Cal	ecting ww	rce details		
			> Cont22-25 > VMME-49 > VMME > 2022-00-12-20	etiveo	4 4 1	1.0E- 1.0E- 1.0E- 1.0E- 1.0E-	8.08 4 8.08 4 2.08 1 2.08 1		O Myster O Myster O Myster	Lonithouse Counter 2 mile age Complete Complete Complete Complete	that Call	inching sand	rce betalls		
			> Cont22.25 > VMME-49 > VMME > 2022 00 12 20	ativio	4	8 08 9 08 2 08 2 08 2 08	8.08 4 8.08 4 2.08 1 2.08 1 2.08 1		O Mayatan O Mayatan O Mayatan O Mayatan	Longhile Conglete Conglete Conglete Conglete	But Cat	ecting une			
 Recent Taska Alarma 			> Coer22-25 > VMME-49 > VMME > 2022-00-12-20	etryo	4 4 1 1	3.08- 3.08- 3.08- 3.08- 3.08-	8.08 4 8.08 4 2.08 1 2.08 1 2.08 1		O Mayatan O Mayatan O Mayatan O Mayatan	Unitidade (Einste 1 mili age Complete Complete Complete Complete	But Gat	erSing save	ree details		
V. Recent Table Alarme are None T Target	•	Status	> Cont22-28 > VMME-49 > VMME5 > 2022-01-12-20 	ETVPO Driels	4 4 1 1	8 GE 1 GE 2 GE 2 GE	8.08 4 8.08 4 2.08 1 2.08 1 2.08 1	Ť Danot	O Mayatan O Mayatan O Mayatan O Mayatan O Mayatan	Landitud (Centre 1 mili age Complete Comple	Burt Call	erstog sove	rce details		
V. Recent Tasks Alarms tosk Name Y Tester bocket virtual maches @ M	T Jinston_14	Entre	> Cont22.25 > VMME-49 > VMME > 2022.06.12.26 	EFVPO Delets Mapating Vehal Naciona a	4 4 5 5 5 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	206-706-706	8 08 4 8 08 4 3 08 1 3 08 1 3 08 1 3 08 1	• Dunvel Far 3 ms	O Mayatan O Mayatan	Initialized Constant 1 militage Compiles Compiles Compiles Tons é T C 3/2022, 419.08	that Call	enting save	ree details	· · · · · · · · · · · · · · · · · · ·	

VMware Replication Assisted vMotion

As you might have noticed from VMware documentation, VMware HCX Replication Assisted vMotion (RAV) combines the benefits of bulk migration and vMotion. Bulk migration uses vSphere Replication to migrate multiple VMs in parallel—the VM gets rebooted during switchover. HCX vMotion migrates with no downtime, but it is performed serially one VM at a time in a replication group. RAV replicates the VM in parallel and keeps it in sync until the switchover window. During the switchover process, it migrates one VM at a time with no downtime for the VM.

The following screenshot show the migration profile as Replication Assisted vMotion.



The duration of the replication might be longer compared to the vMotion of a small number of VMs. With RAV, only sync the deltas and include the memory contents. The following is a screenshot of the migration status—it shows how the start time of the migration is the same and the end time is different for each VM.

			A.F.	ratio																		
HCX			MIG	rabu																		
Dushboerd				0.716	Sing E Million	percent		27 1410	IATE	c) [.;	2										(manifest)	
nhadructure		*																				
C Ste Farry				-					where the	nyn/ Han	arg/ CPGs		111					Start	0	7	States	
Tis transport Analytics					center addc 544	188 6 13	28.Ve	nearenn	nc com	+ ••	300 we	settehodic.com										
P Astrony Extension		*		~ 70RT	,				•	8142	3.03	*	0	-	Complet	e)					<u>این</u>	0
Mgration			i		Que paramet																	
D Disastar Recovery		-		64	HER, Palar, 12			60		2.08	1.08		0	thereine	Complete			83.20 PM		100.000	Meratian completed	
yulam		÷	1	0	HCR, Photon, 52			9		2.08	108	1	0		Certplet			83.25 Av.	85	thine en	Migratur competed	
P toport			0	HOLPHIN, ST			63		2,09	2.08	1	0	-	Cirtum	e0		83,22 me	- 63	44 Per	Mpaint completed		
				0.	HDL/Mile.H		4	-		208	2.00	2.	0		Constant			83.20 me hej 21	82	135 Per	Migration completed	
				> anda	an 22 15:24 1/1774					\$ 09	3 (3)	4	0	-	Constrained	• (
				• #*	center/siddc-54-	85.63	28.vn	warevn	nc com	6 10	300 vc	saOtlehcidic.com										
				> From	872				4	1.02	8.06	4	0	-	Complete		Î	1				
Task Barry T	1.0	erget			Thetes	-		Detterts 1		,	bettatte			(im		Dation		Constantian Time		Server		
leale intus machine	1	Co. Phates, P. States	4		Q-Complement						VMC	OCAL Monenshalor		2.00		0WZ3/2022	4 03 04	09/23/20/22 4 111	0	vental state 54 Kit	+ - OE unsame une com	
regiber orbat machine		D HCk Platin, 1			@ completes						VMCS	DCaL\Administer		2-10		26/25/2023	4 (3 (3	09/25/2022 4 03 0	. 40	venter solds be the	S Of Imagents com	
wheth visitual machine x.		T, retard, XD+			Q-Completed						VMCL	OCAL GARMING AUG		4.71		09/21/2022	40108.	09/35/0022.403.0	. 95	vermine adde 54 mil	- CE empresent com	
elicate virtue machine		B HOL Instan_3			(completed			higiating	Virtual Ma	hen ic.	VHC	OCAL\Administratur		4.00		06/25/2022	4.00.55	06/25/2022 4:01/0	2 2 14	manter addo 34 mil	6.428 semale and care	
veste vitue machine		B sooc-balakerter			@-Companies						1MCL	OCAL/Agreenation		3.64		08/23/0022	31042	00/35/0022 5 58 4	ù	vianter and: 64 mil	14.51 marente corr	
																						4

For additional information about the HCX migration options and on how to migrate workloads from onpremises to VMware Cloud on AWS using HCX, see the VMware HCX User Guide.



VMware HCX vMotion requires 100Mbps or higher throughput capability.



The target VMC FSx for ONTAP datastore must have sufficient space to accommodate the migration.

Conclusion

Whether you are targeting all-cloud or hybrid cloud and data residing on any type/vendor storage in onpremises, Amazon FSx for NetApp ONTAP along with HCX provide excellent options to deploy and migrate the workloads while reducing the TCO by making the data requirements seamless to the application layer. Whatever the use case, choose VMC along with FSx for ONTAP datastore for rapid realization of cloud benefits, consistent infrastructure, and operations across on-premises and multiple clouds, bidirectional portability of workloads, and enterprise-grade capacity and performance. It is the same familiar process and procedures used to connect the storage and migrate VMs using VMware vSphere replication, VMware vMotion or even NFC copy.

Takeaways

The key points of this document include:

- You can now use Amazon FSx ONTAP as a datastore with VMC SDDC.
- You can easily migrate data from any on-premises datacenter to VMC running with FSx for ONTAP datastore
- You can easily grow and shrink the FSx ONTAP datastore to meet the capacity and performance requirements during migration activity.

Where to find additional information

To learn more about the information described in this document, refer to the following website links:

VMware Cloud documentation

https://docs.vmware.com/en/VMware-Cloud-on-AWS/

Amazon FSx for NetApp ONTAP documentation

https://docs.aws.amazon.com/fsx/latest/ONTAPGuide

VMware HCX User Guide

• https://docs.vmware.com/en/VMware-HCX/4.4/hcx-user-guide/GUID-BFD7E194-CFE5-4259-B74B-991B26A51758.html

Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at http://www.netapp.com/TM are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.