

L08 - SDDC Migration with HCX - Deploy HCX Cloud (Part-1)

Introduction

VMware Cloud on AWS provides a reliable, elastic, and highly scalable solution for customers who want to extend their workloads into the cloud.

However, when it comes to migration or bi-directional workload mobility, software and network incompatibilities between on-premises and cloud environments can complicate your migration process.

VMware Hybrid Cloud Extension (HCX) helps overcome those challenges by building an abstraction layer on top of existing site-specific implementations, allowing you to extend their networks and environments to the cloud seamlessly without the need for extensive reconfiguration and upgrades.

Here are some key benefits of HCX:

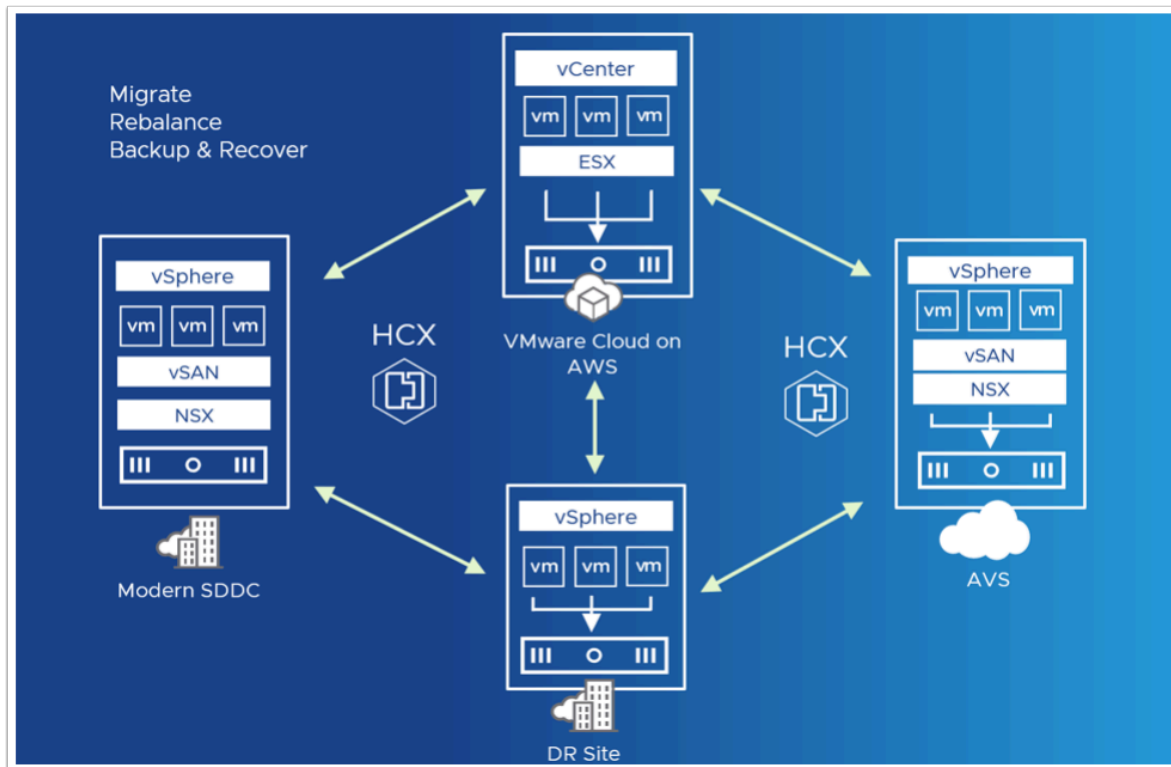
- Ability to migrate workloads across different versions of vSphere (6.0 or later).
- WAN optimization, compression, and de-duplication enable high throughput for faster migrations.
- Network extension enables stretching layer 2 networks between on-premises and VMware Cloud on AWS without the need for complex network reconfiguration. Virtual machines (VM) can be moved between on-premises and cloud environments with no need the change or re-assign IP addresses.

HCX is a software-as-a-service (SaaS) offering, available at no extra cost for VMware Cloud on AWS customers.

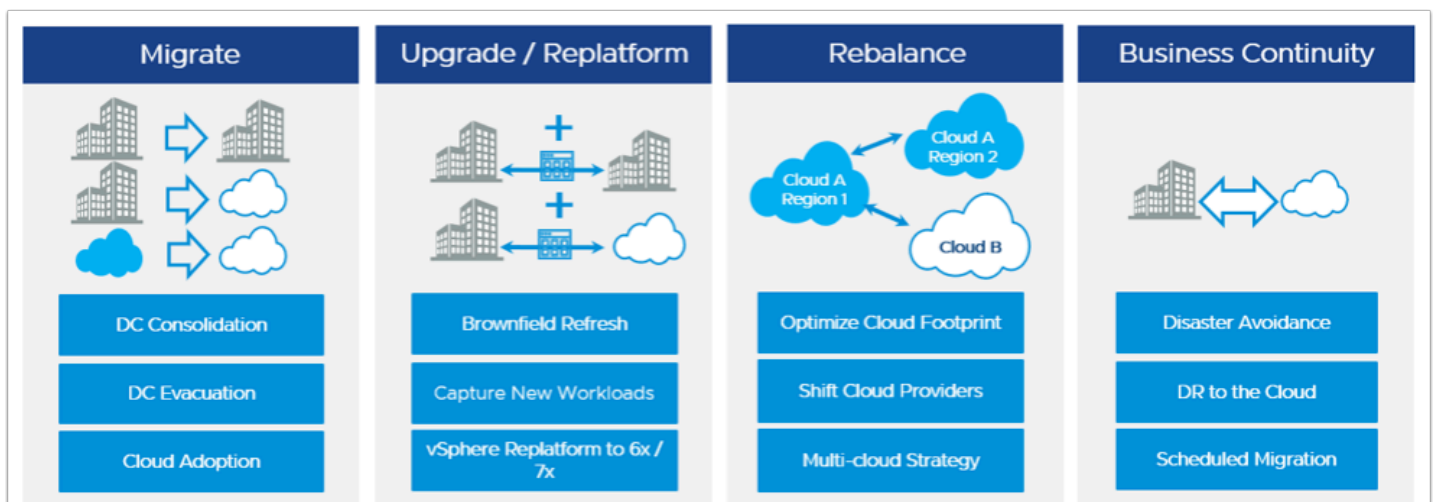
The HCX solution is built out of several component services, each supporting a specific function within the overall solution.

- **HCX Enterprise Manager:** System management component on the on-premises side, which is always deployed as “source.”
- **HCX Cloud Manager:** System management component on the cloud side and is always deployed as “destination.”
- **HCX-IX Interconnect Appliance:** Provides replication and vMotion-based migration capabilities.

- **HCX WAN Optimization Service:** Provides improved network performance by using techniques such as de-duplication and compression to help speed up migrations.
- **HCX Network Extension Service:** Provides layer 2 extension capabilities, enabling VMs to migrate between on-premises and cloud without the need to re-IP.



HCX Use Cases



Older vSphere Versions

HCX allows migrating VMs from older versions of vSphere (6.0 or later) to VMware Cloud on AWS. Hosts in VMware Cloud on AWS are automatically patched, updated, and are thus likely to be running the latest (or near) version of vSphere software. This eliminates the need for customers to perform time-consuming system upgrades in order to prepare for migrations.

Bulk Migrations

In certain situations, customers may want to migrate workloads out of their current data centers in a “lift-and-shift” manner. An example of this is if you have an upcoming lease expiration on the hardware or data center facility. In this situation, when there’s not enough time for migration planning and execution, HCX can help customers migrate thousands of VMs simultaneously with no downtime. HCX, with WAN optimization services, can provide a high throughput connection over which on-premises networks can be extended into the cloud.

Heterogeneous Network Environments

Typically, your current on-premises network environment is one of the most important considerations in the migration planning process. Whether you have VXLANs, NSX for vSphere, NSX-T, or No NSX at all, each of these factors can complicate your migration plan. The good news is that HCX works by abstracting out the underlying network implementation, extending your networks from on-premises to the cloud seamlessly without the need for complex and time-consuming network re-architecture.

Slow/Sub Optimal Network Connectivity

A live vMotion across WAN with vSphere is sensitive to network bandwidth. Typically, a connection speed greater than 250 Mbps is required, but with its advanced WAN optimization capabilities, HCX can migrate live VMs over much slower connection speeds of around 100 Mbps per migration.

In this lab, we will walk through the deployment of HCX, site pairing, Service Mesh configuration Plus migration, and Network extension.

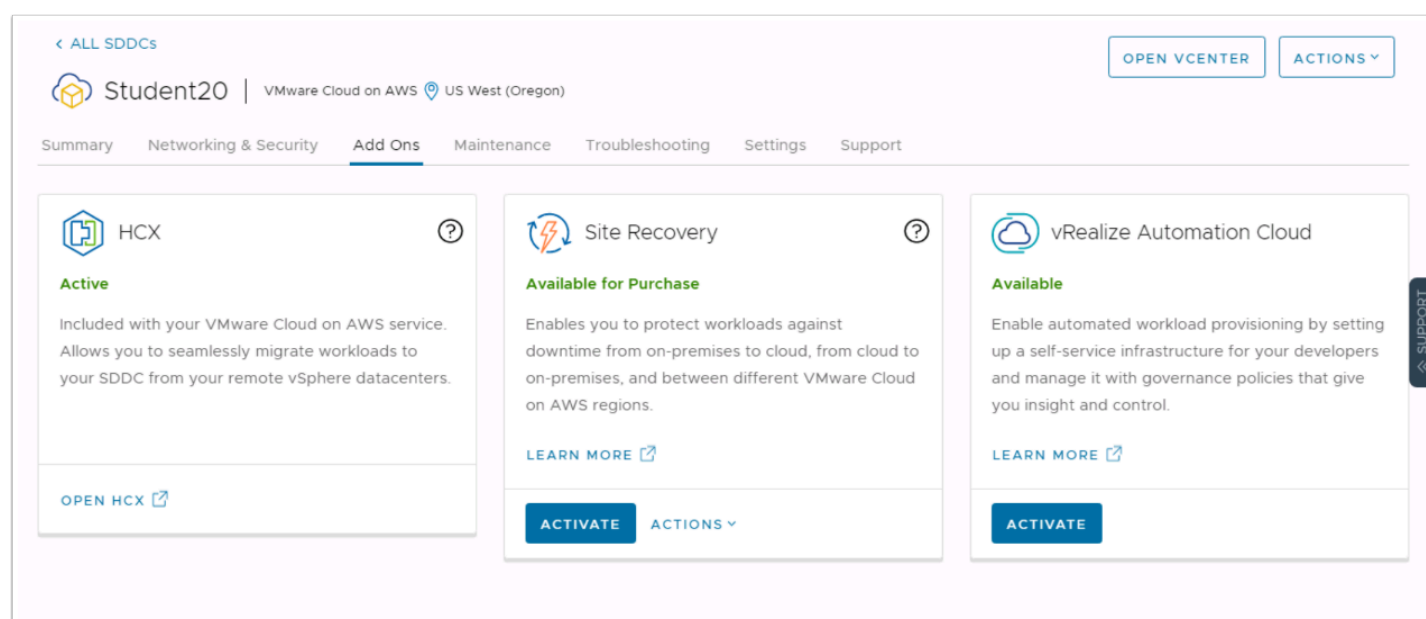
TASKS

Task 1 - Deploy HCX in the SDDC

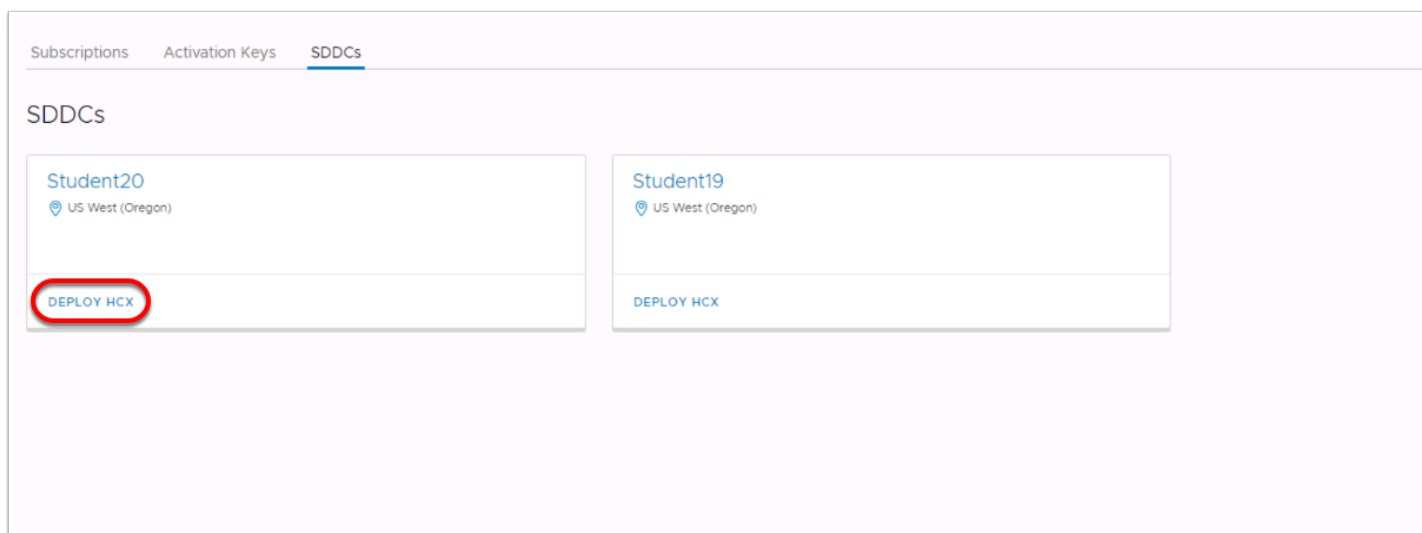
Let's begin with the HCX deployment on the Cloud Side. On the On-premises side, the HCX Manager appliance ovf has already been imported.

From the VDI desktop access your SDDC, Using your SDDC Student account

1. Log in as
2. **vmcexpert{1|2}-##@vmware-hol.com** (where **##** is your student number) i.e **vmcexpert1-02@vmware-hol.com**
3. Click **View Details**
4. Select the **Add-Ons** tab
5. Click **Open HCX**



6. Under <Your Student number> SDDC, Click **Deploy HCX**
7. Click **Confirm** to confirm the subscription
8. Click **Close**
9. Wait for the deployment to complete, this can take up to 25 mins



7. Once Completed, Click **Open HCX**

This will fail because we are attempting to access HCX from the On-Premises environment over the VPN and thus need to use its Private IP address.

We also need to define a firewall policy through the Management Gateway to allow access to HCX

i NOTE: As a Time Management measure, the instructor(s) might ask you to kick off this task and return to the lecture as HCX is deployed in the SDDC. If so, please be sure to notify the instructor that your deployment has started, allowing him to restart the lecture at the most appropriate time.

Conclusion

💡 If working along in a classroom setting the instructor will inform you when you can begin the next task. If you are doing this on your own time, you may continue to the next task once the deployment concludes successfully.