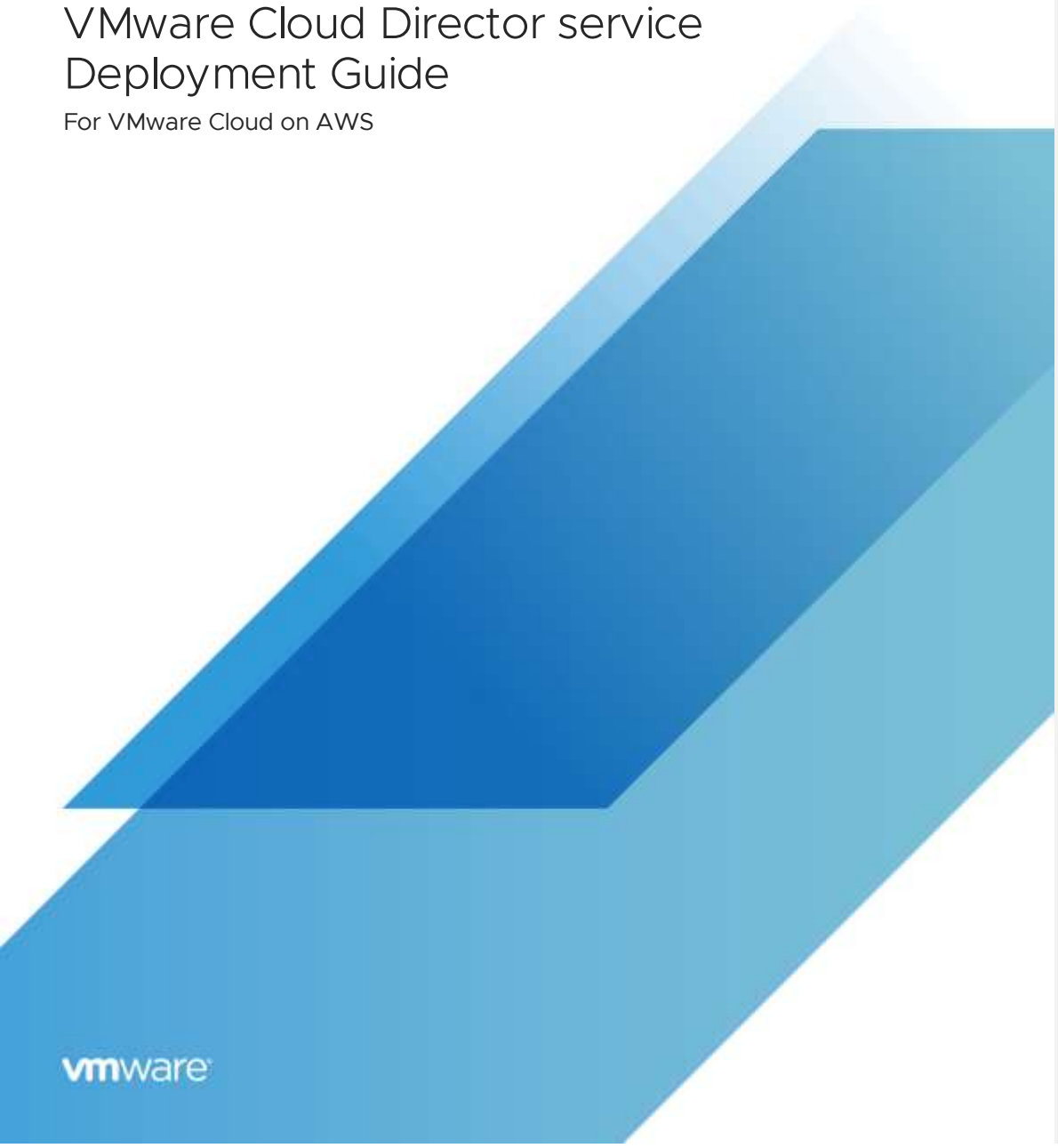
DEPLOYMENT GUIDE–**OCTOBER 2021**

VMware Cloud Director service Deployment Guide

For VMware Cloud on AWS



vmware

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Introduction

VMware Cloud Director™ service enables cloud providers to use VMware Cloud on AWS in multi-tenant modality with enhanced VMware NSX-T support, allowing provisioning of custom-sized, tenant-based, isolated, and secure VMware Cloud resources. This ability to service multiple smaller and medium sized tenants on the same infrastructure, offers flexibility to right-size the VMware Cloud on AWS environments to meet customer needs and requirements of all customer tiers.

VMware Cloud Director service is a container-based SaaS version of the proven VMware Cloud Director on-premises service-delivery platform. The service, available through VMware Cloud Partner Navigator, helps cloud providers gain better economies of scale and generate new value and revenue for their cloud businesses.

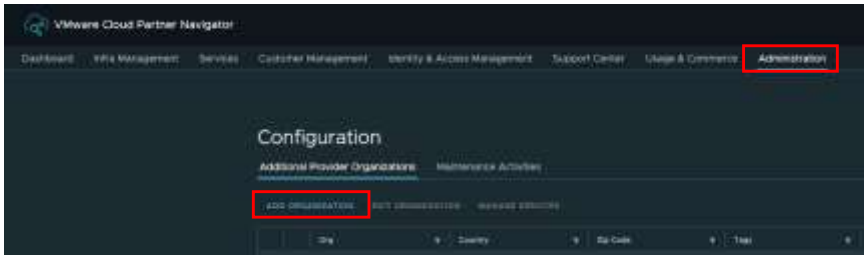
This guide details the process of deploying a VMware Cloud Director service Instance, associating it with a VMware Cloud on AWS SDDC designed for use with VMware Cloud Director service, configuring the Provider Virtual Datacenter to use the resources of the associated VMware Cloud on AWS SDDC, configuring the VMware Cloud on AWS SDDC networking to prepare it for multi-tenant use and deploying the first tenant organization.

Before using this guide, it is necessary to join the *VMware Managed Service Provider Program* and have the require contracts in place to use the VMware Cloud services mentioned in this guide. See the *MSP VMware Cloud on AWS Operations Handbook* and the *Cloud Director service Operations Handbook* for more details.

Prepare a VMware Cloud Partner Navigator Provider Organization

Provision a new VMware Cloud Partner Navigator Organization

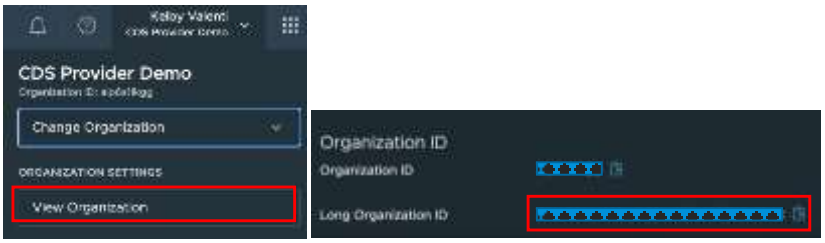
1. Click on **Administration**, then **Add Organization**



2. Fill out the Add Organization form and click **Add Organization**

Request access to VMware Cloud Director service by emailing: *ask_cloud_director_service@VMware.com*

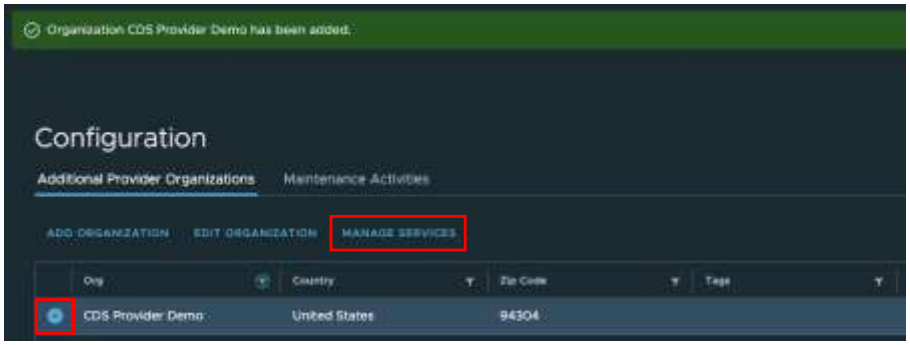
1. Supply the Long ID of the Organization that will be used.



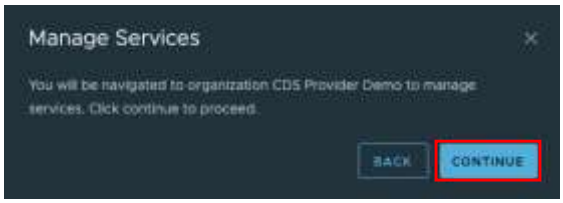
2. A onetime use invitation will be returned to activate VMware Cloud Director service.

Enable the VMware Cloud on AWS and VMware Cloud Director service services in the new Organization

1. Select the new Provider Organization and click **Manage Services**

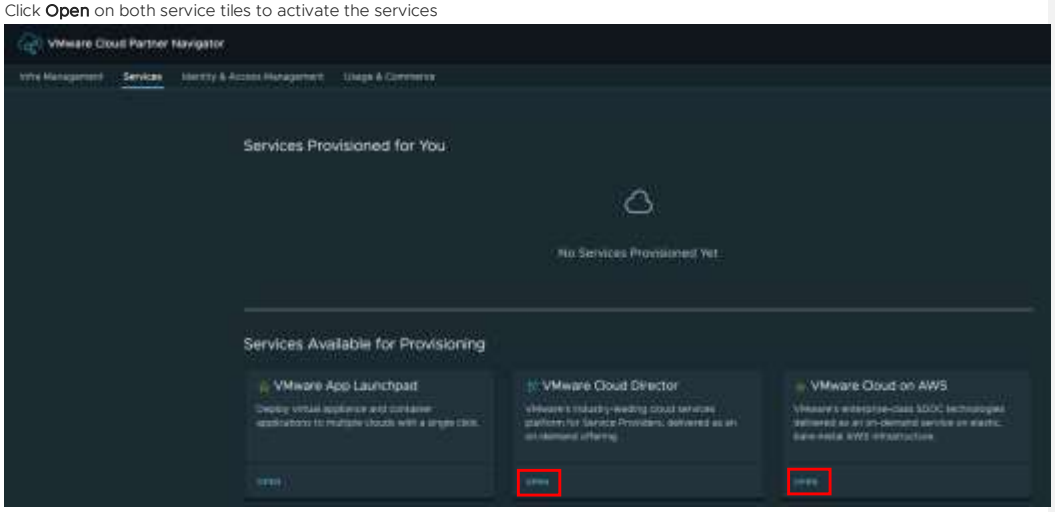


2. Click **Continue**

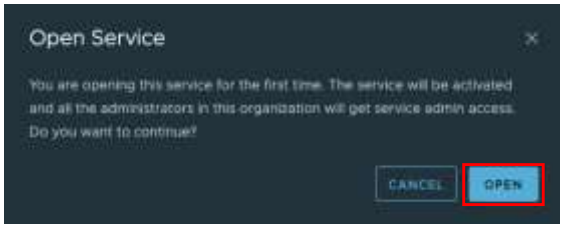


Commented [KL1]: @John Dwyer need some help here on the process to activate IPsec VPN for VMC & CDS

3. Click **Open** on both service tiles to activate the services



4. Click **Open** to continue

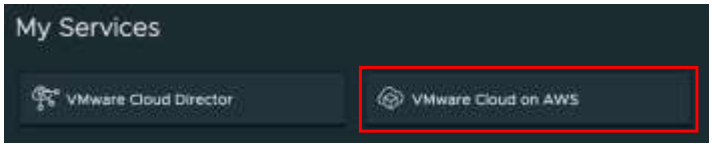


NOTE: It is also acceptable to use an existing Provider Organization enabled for VMware Cloud on AWS which has no SDDCs currently deployed.

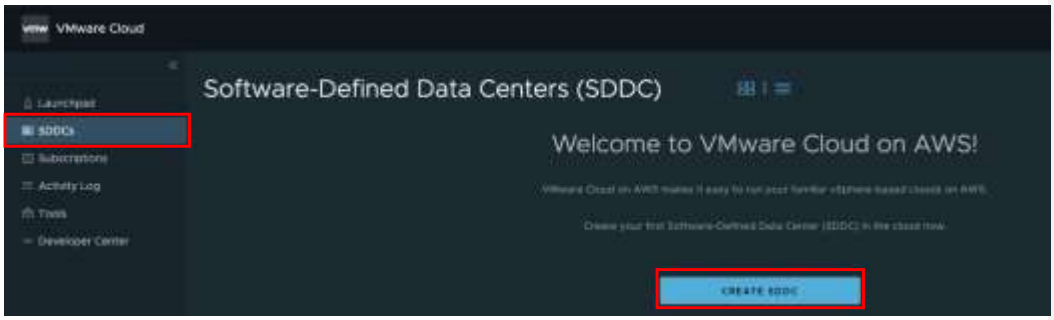
Deploy a SDDC

Deploy the SDDC in the same VMware Cloud Partner Navigator Organization activated above.

1. Select the VMware Cloud on AWS service tile



2. Select SDDCs and click Create SDDC

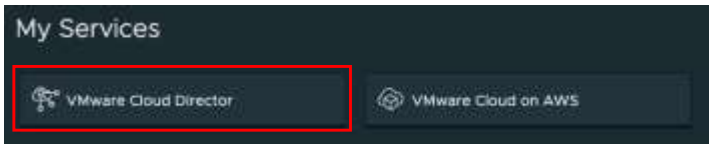


3. Fill out the form to deploy the SDDC according to your requirements. For more details about the deployment process for VMware Cloud on AWS SDDCs see *Deploy an SDDC from the VMC Console*.

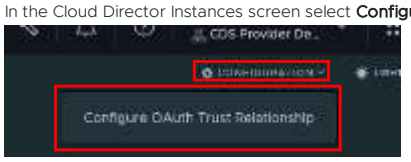
NOTE: All VMware Cloud on AWS SDDCs used with VMware Cloud Director service must be deployed in Organizations that have been enabled for VMware Cloud Director service. SDDCs deployed in other Organizations are not compatible with VMware Cloud Director service.

Deploy VMware Cloud Director service Instance

1. Select the VMware Cloud Director service tile



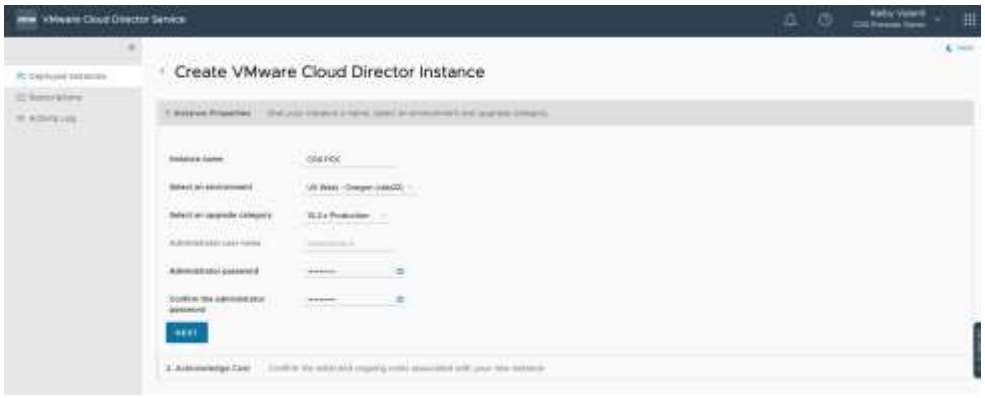
2. If someone other than the Organization Owner will be deploying VMware Cloud Director service Instances the Organization Owner must first establish a trust relationship between VMware Cloud services and VMware Cloud Director service.
    a. In the Cloud Director Instances screen select **Configuration** then **Configure OAuth Trust Relationship**



    b. Select Dismiss once the trust is established

3. Select **Create Instance** to begin the instance deployment process.

4. Enter the data needed in the form and click on **NEXT**



Note: For the Upgrade Category, selecting Preview (if enabled) identifies this Cloud Director service Instance to be patched or upgraded earlier than when Production is selected. Use Preview for service development environments. The Upgrade Category cannot be changed after deployment.

5. Acknowledge costs and then click on **CREATE INSTANCE**

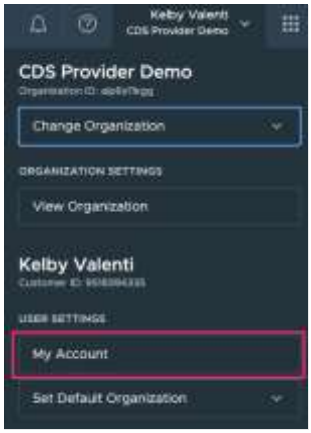
6. Click on Activity Log for detailed information about the deployment progress.

When the VMware Cloud Director instance deployment is complete, its card displays a **Ready** status.

Generate API Token

An API token for the Organization holding the SDDC is used to associate the SDDC with VMware Cloud Director service.

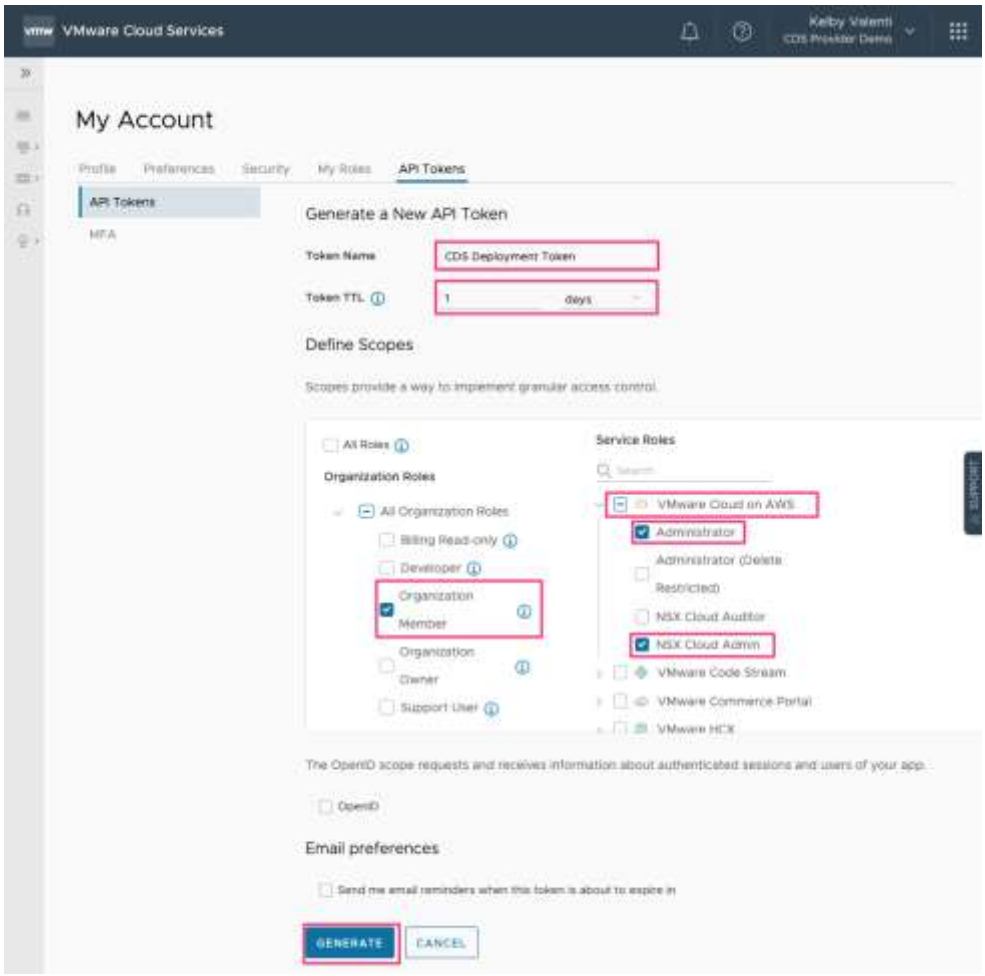
1. Click on your name in the top right and then click on **My Account**



2. Click on **API Tokens**

3. Click on GENERATE TOKEN

4. Enter form fields and then click on **GENERATE**

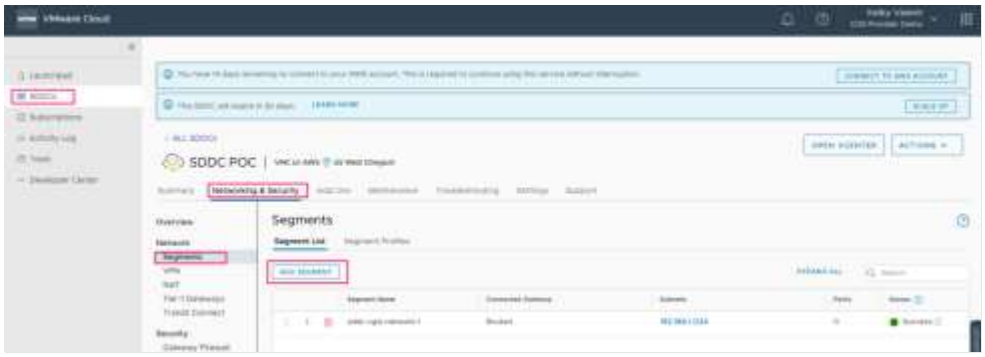


Notes: This token is only used during the association process, so its Token TTL should be short. Minimum required Organization Role is Organization Member. Minimum required Service Roles are VMware Cloud on AWS - Administrator and VMware Cloud on AWS - NSX Cloud Admin. Make sure to store the generated token in a safe place.

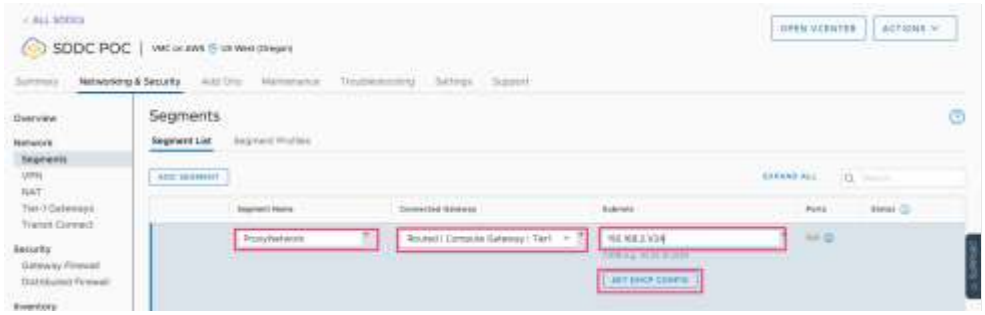
Create a DHCP Network

Need to create a network segment that has routed access to the SDDC management network, provides DHCP service and has a DNS server configured. Note: This step can be skipped if you only have one host in your SDDC.

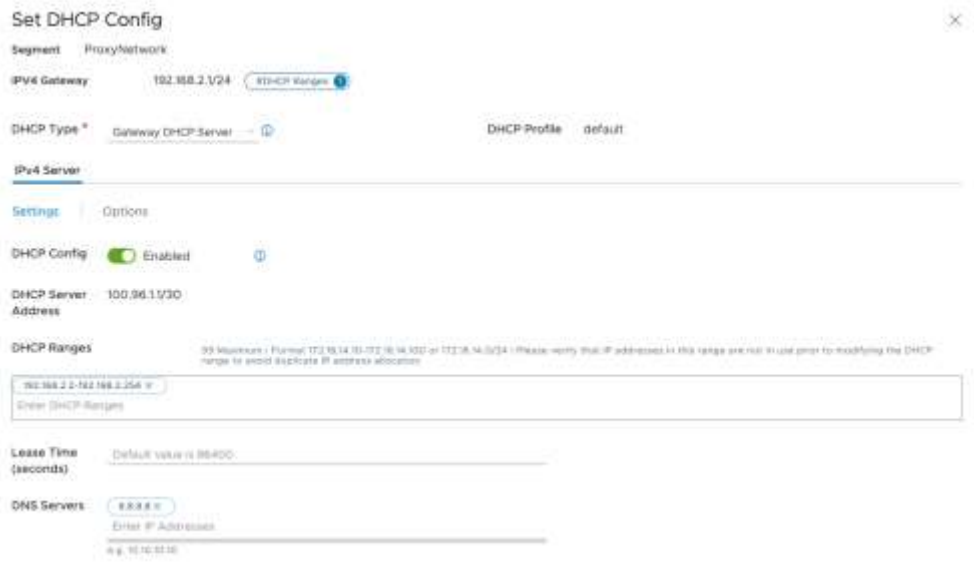
1. Click on **ADD SEGMENT**



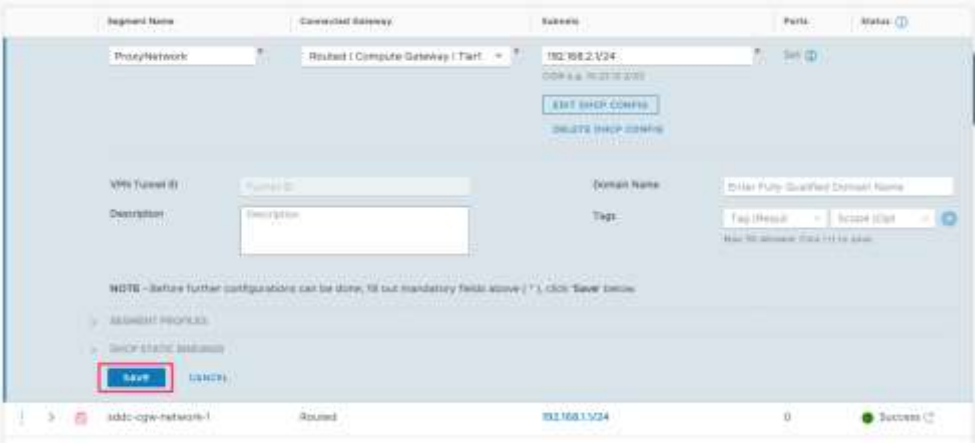
2. Enter segment details and then click on **SET DHCP CONFIG**



3. Enter details and then click on **APPLY**



4. Click **SAVE**



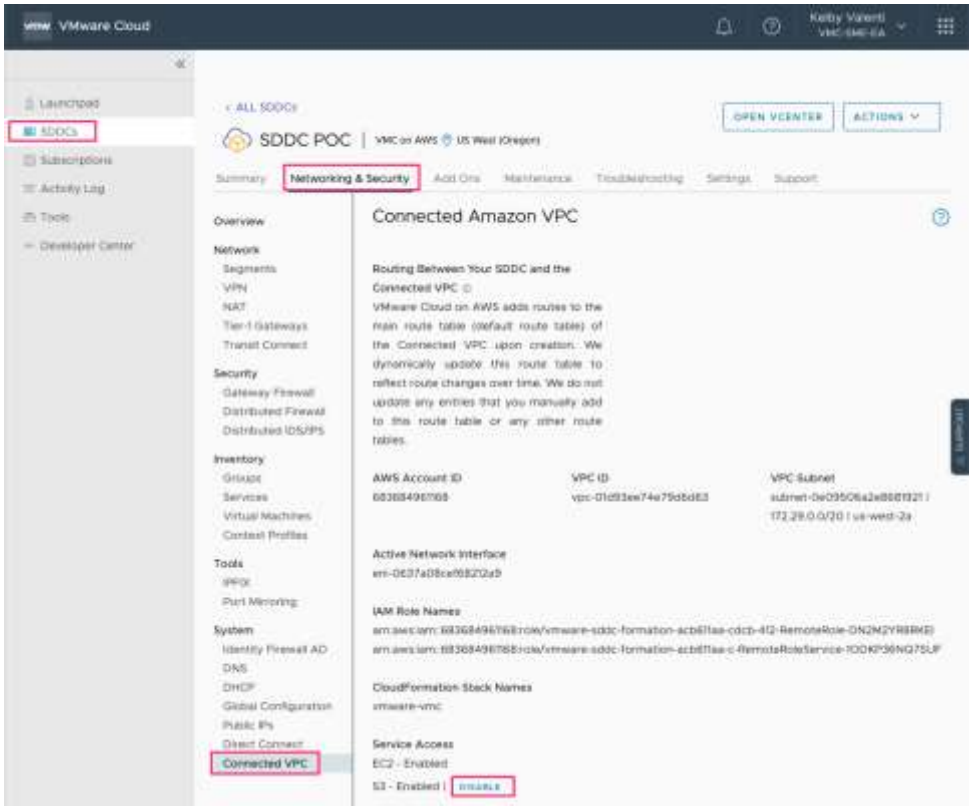
S3 Configuration

If your SDDC is in Oregon (us-west-2), you will need to either disable S3 or configure a S3 VPC endpoint prior to associating the SDDC. If your SDDC is in any other region, this step can be skipped. By default, S3 traffic in the local region fails until either a VPC

endpoint is configured or S3 is disabled. Part of the associate process automatically deploys a proxy appliance into the SDDC. That proxy appliance currently is stored on an S3 bucket in Oregon (us-west-2), which given the default configuration makes it inaccessible.

Disable S3

1. Click **DISABLE**

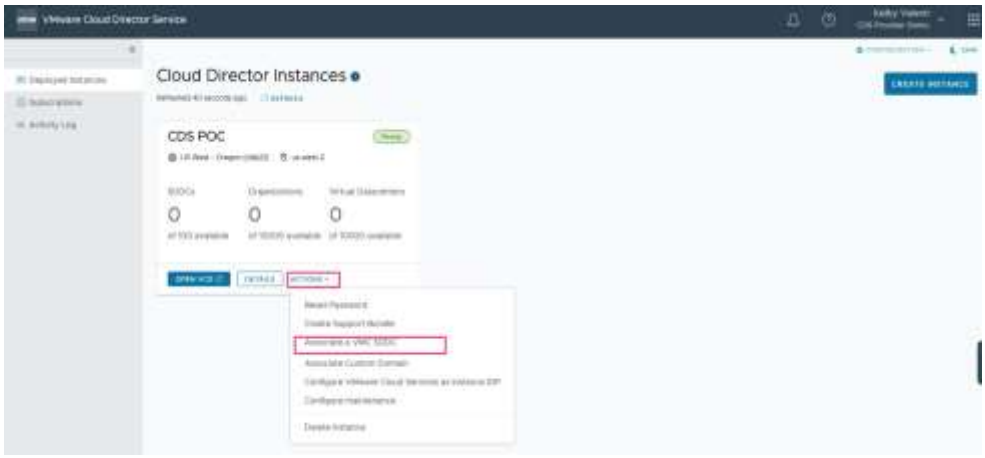


Configure S3 VPC endpoint

See the Amazon Virtual Private Cloud AWS PrivateLink documentation: *Endpoints for Amazon S3*

Associate VMware Cloud Director service Instance

1. Click Associate a VMC SDDC



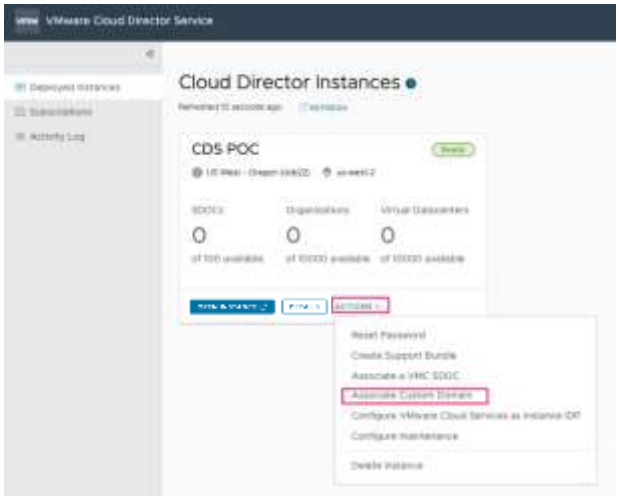
2. Enter fields and then click on **ASSOCIATE a VMC SDDC**

Note: If you only have one host in your SDDC, you can use the predefined network named “sddc-cgw-network-1” for the Proxy VM Network field.

Associate Custom Domain (Optional)

Allows the provider to use their own domain name for VMware Cloud Director service Instances.

1. Click on **ACTIONS** and then click on **Associate Custom Domain**

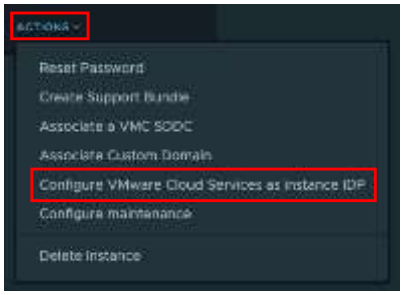


See the VMware Cloud Director service documentation *Customize the DNS and Certificate Settings* for more details.

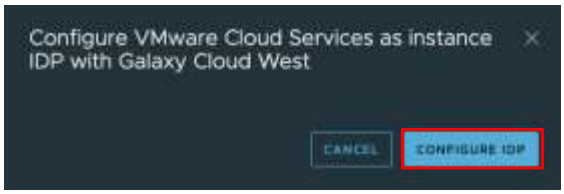
VMware Cloud Director service Instance Configuration

Launch the Provider Portal

1. To use VMware Cloud Services as an Identity Provider for VMware Cloud Director service Instances, select Configure VMware Cloud Services as instance IDP from the Actions menu of each VMware Cloud Director service Instance.



2. Select **Configure IDP**



3. Click on **OPEN INSTANCE**

NOTE: To control user access when VMware Cloud Services is used as the VMware Cloud Director service Instance IDP, use the Role Assignment feature in VMware Cloud Partner Navigator to grant users Admin, Read Only or No Access roles to all IDP enabled VMware Cloud Director service Instances. The Admin role will login to instances with the CDS Provider Admin role. The Read Only role will login to instances with the CDS Provider Admin Read Only role.

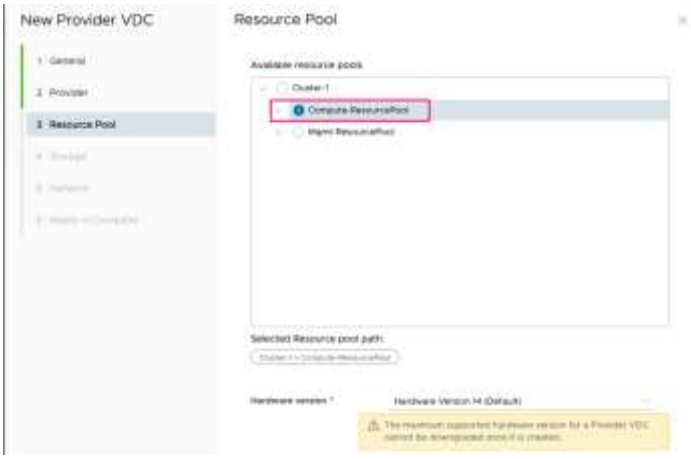
Create Provider VDC

1. Click on **NEW**

2. Enter details and then click on **NEXT**

3. Select vCenter and then click on **NEXT**

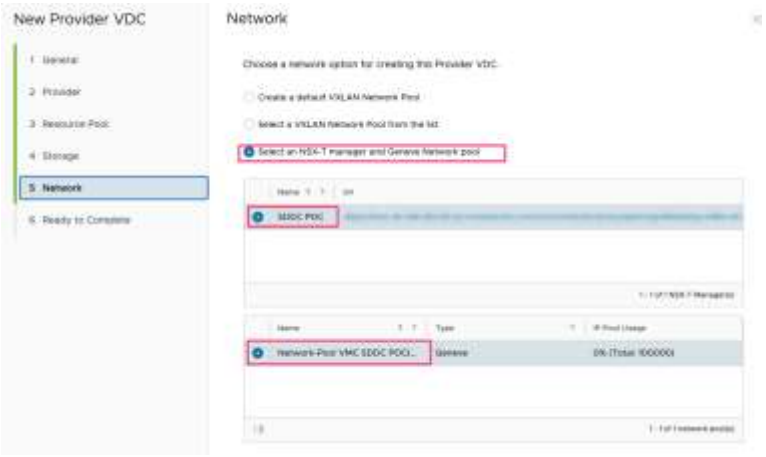
4. Select Resource Pool, Hardware version and then click on **NEXT**



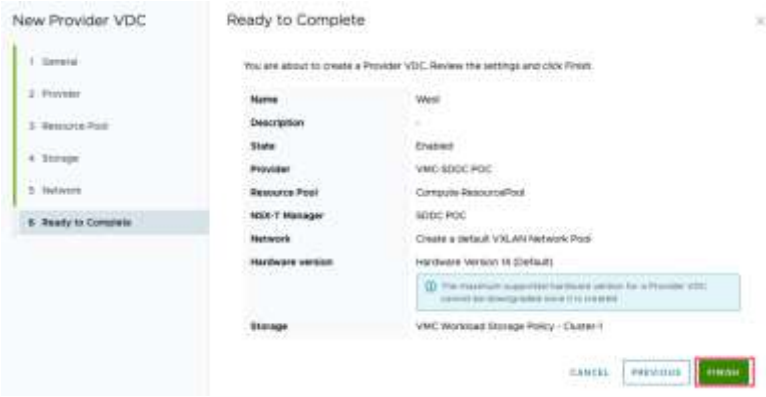
5. Select the VMC Workload Storage Policy – Cluster-1 and then click on NEXT.

Note: Make sure that the other storage policies are left unselected.

6. Select NSX-T manager and Geneve Network pool and then click on Next.

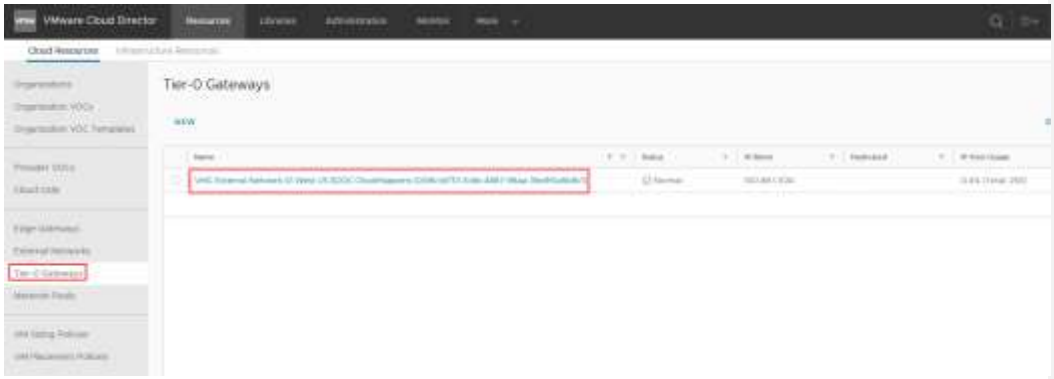


7. Click on **FINISH**



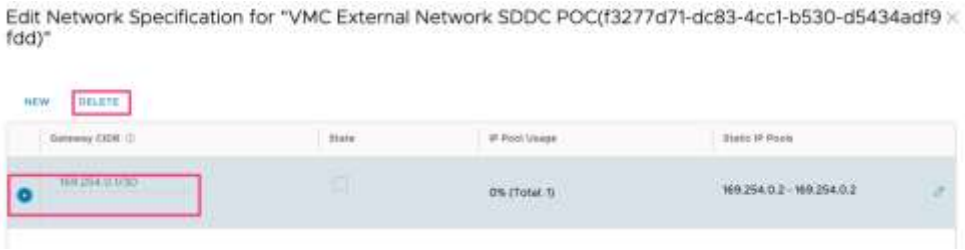
Update External Network with valid IP range

1. Click on Tier-0 Gateways in the left pane and then click the name of the pre-existing External Network.



2. Click on Network specification and then **Edit**.

3. Delete existing network spec by selecting it and then clicking on **DELETE**

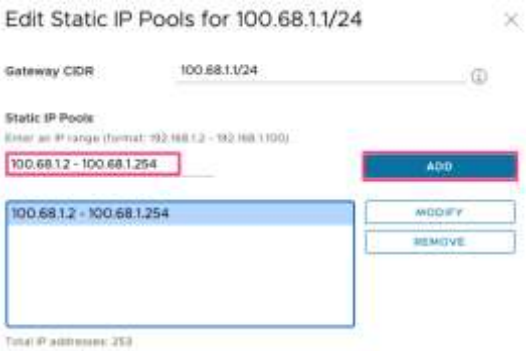


4. Click on **NEW**

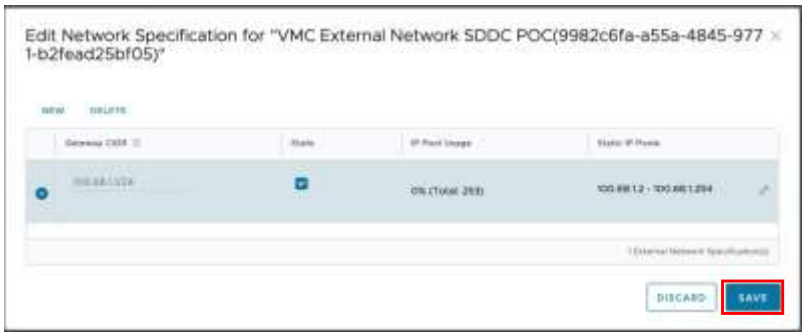
5. Enter **Gateway CIDR** and click on the pencil.

Note: We recommended that you use a subnet in the **100.64.0.0/10** range (RFC-6598 – Carrier-grade NAT) to avoid conflicts with RFC-1918 private address space used in on premises locations and allow for extensive NATing of tenant IPs to the External Network. For example, you may choose 100.68.1.1/24 for the first SDDC deployed and use 100.68.2.1/24 for the second SDDC and so on. It is important to note that NSX-T uses 100.64.0.0/16 for T0-T1 interlink and is not available for use in an NSX-T environment like VMware Cloud on AWS.

6. Enter **Static IP Pools**, click **ADD** and then click on **SAVE**

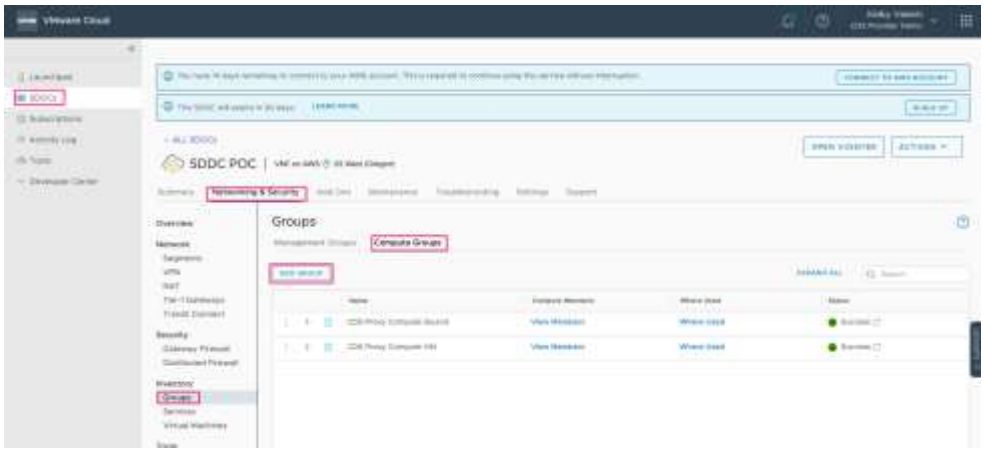


7. Click on **Save**



Create Inventory Group for External Networks

1. Click Add Group



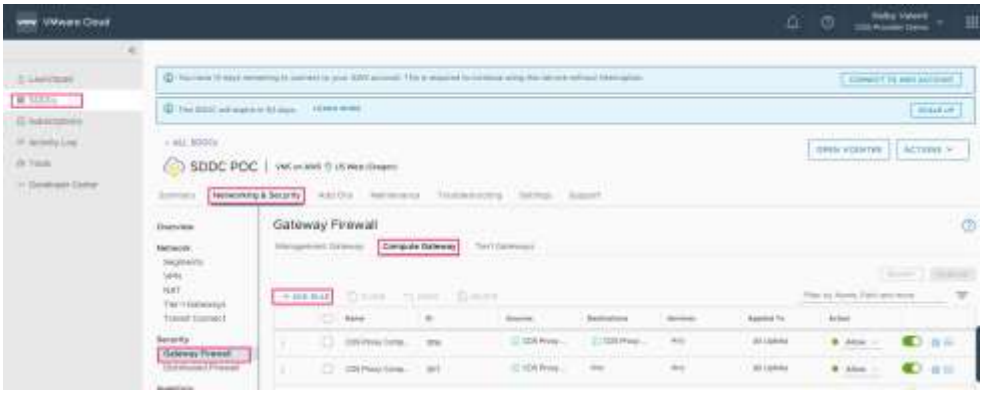
2. Enter Name and click on **Set Members**

3. Click on **IP Addresses**, enter the range associated with the external network previously specified and then click on **APPLY**

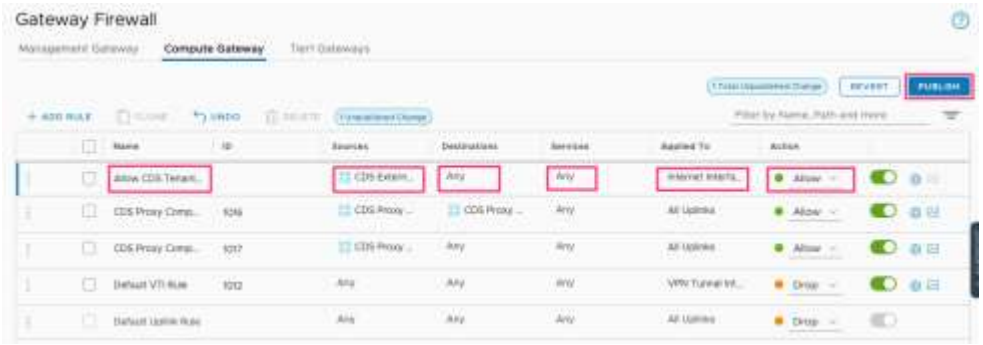
4. Click on SAVE

Create Firewall Rule to Allow VMware Cloud Director service Tenant Traffic

1. Click **Add Rule**



2. Add rule details and then click on **PUBLISH.**



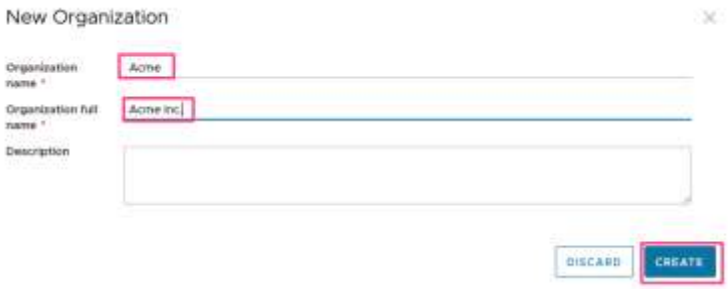
Notes: For Sources, make sure to select the Group created previously (VMware Cloud Director service External Network Ips). For Applied To, make sure to select Internet Interface.

Create First Tenant

Create Organization

1. Click on **New**

2. Fill in details and click on **CREATE**



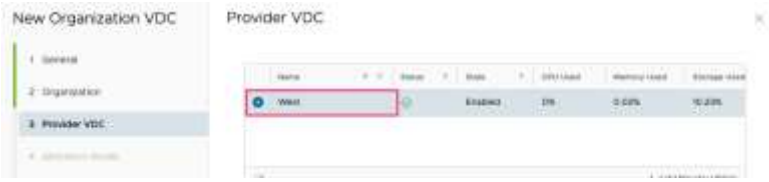
Create Organization VDC

1. Click on **NEW**

2. Fill in General details and click **NEXT**

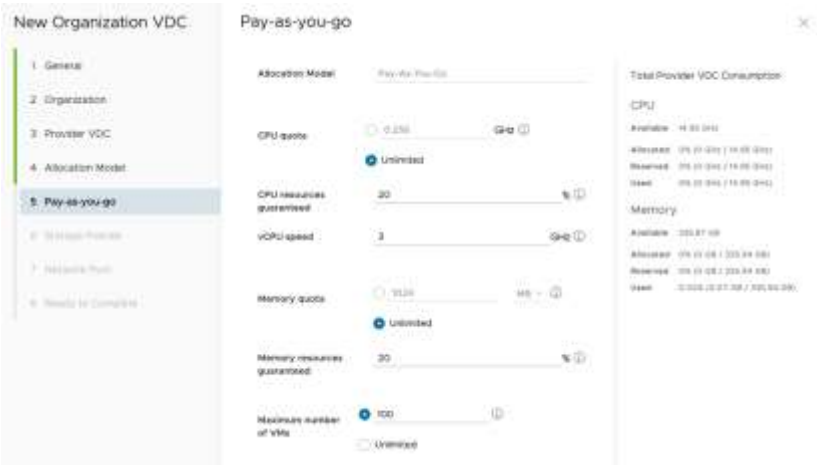
3. Select Organization and click **NEXT**

4. Select Provider VDC and click **NEXT**



5. Select Allocation Model and click **NEXT**

6. Enter details and click **NEXT**

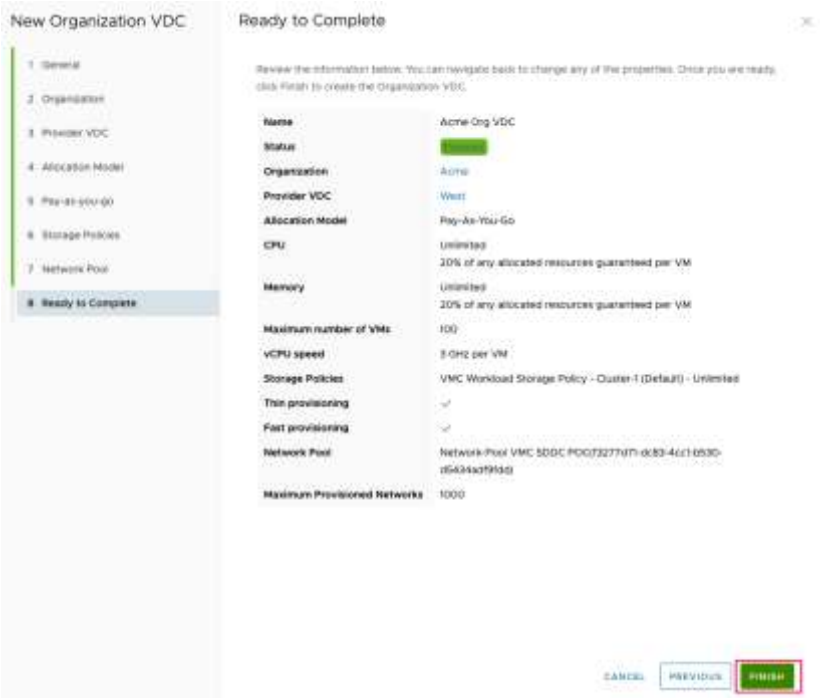


7. Select Storage Policy and click **NEXT**

Note: Thin provisioning and Fast provisioning are recommended, but not required.

8. Select Network Pool and click **NEXT**

9. Confirm and click **FINISH**



Create Edge Gateway

1. Click on **NEW**

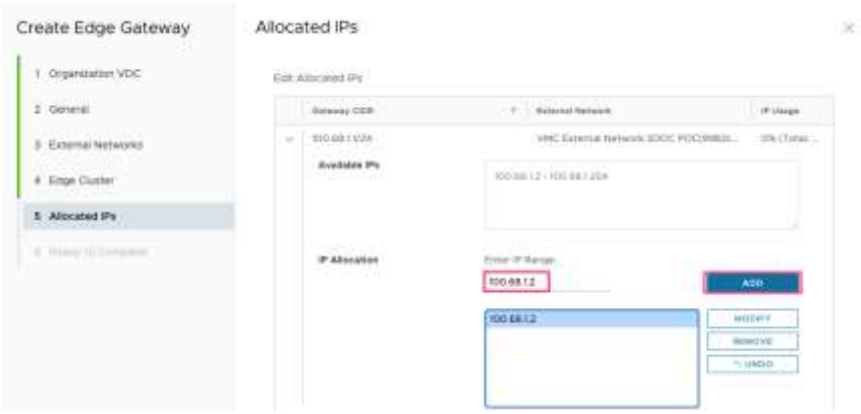
2. Select Organization VDC and click on **NEXT**

3. Enter **Name** and click on **NEXT**

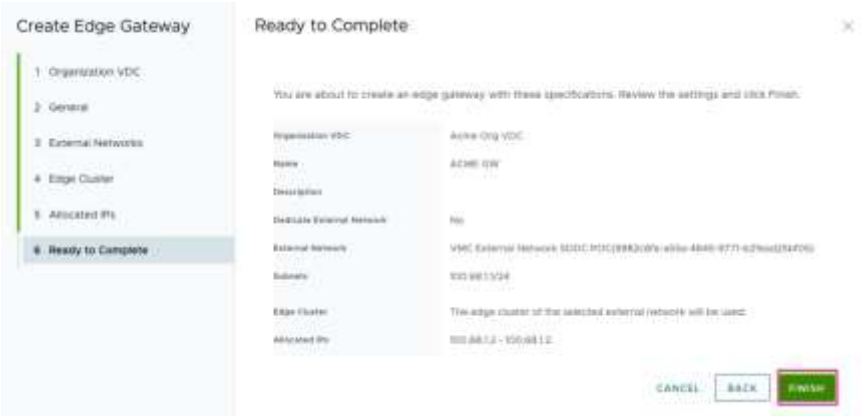
4. Select External Network and click on **NEXT**

5. Select Edge Cluster and click on **NEXT**

6. Add IP Allocation, click **ADD,** then click on **NEXT**

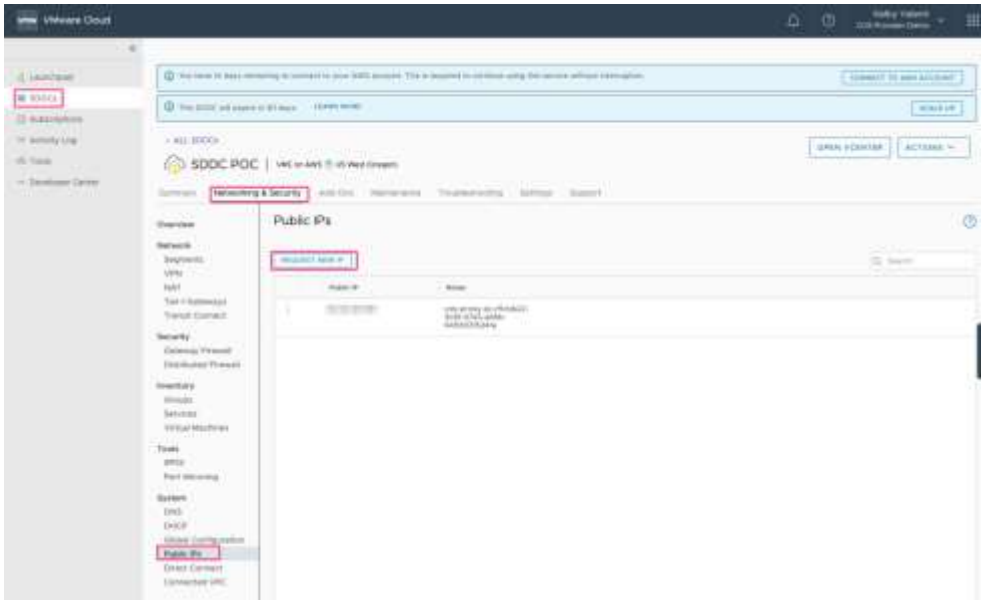


7. Review and click **FINISH**



Request a public IP for Tenant's edge

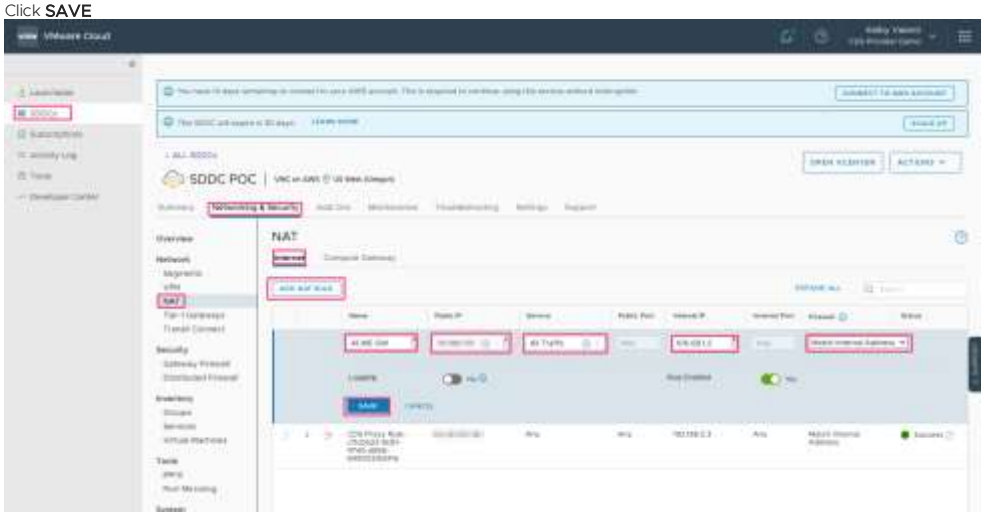
1. Click REQUEST NEW IP



2. Enter **Notes** and then click **SAVE**

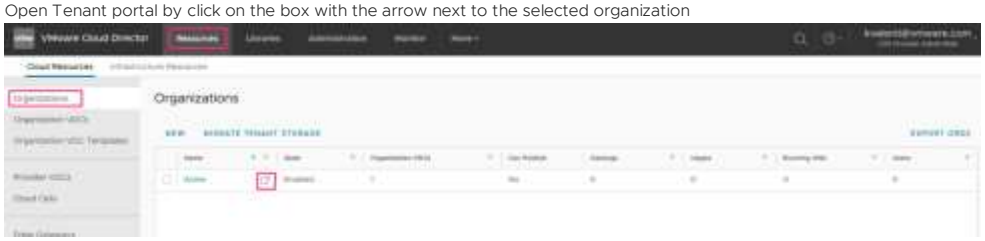
Create a NAT pointing to the tenant's edge gateway

1. Click on **ADD NAT RULE**.
2. Select previously created public IP and make sure that the Internal IP matches the IP assigned to the edge gateway.
3. Click **SAVE**



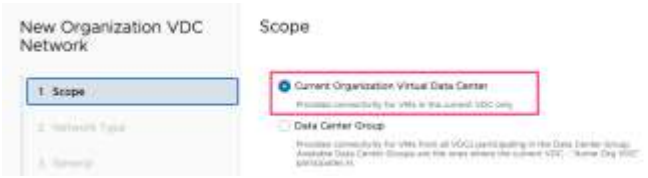
Create Organization network

1. Open Tenant portal by click on the box with the arrow next to the selected organization

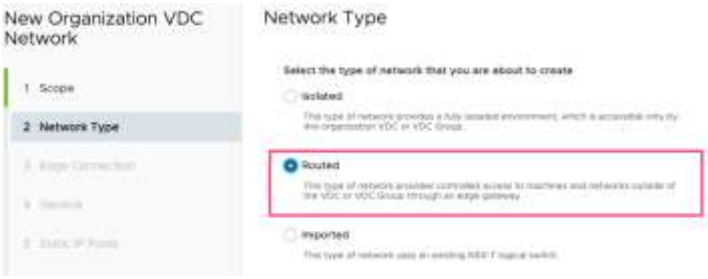


2. Click on **NEW**

3. Select Scope and then click **NEXT**



4. Select Routed and then click **NEXT**



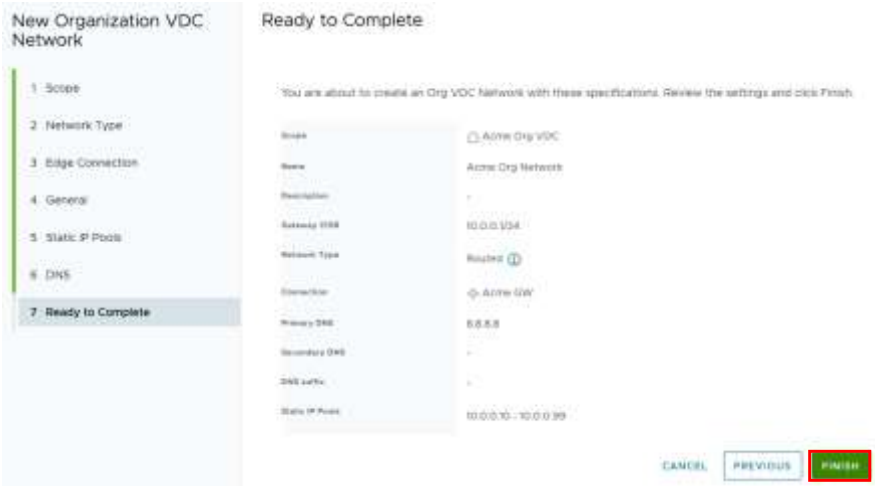
5. Select edge and the click **NEXT**

6. Enter name and CIDR and then click on **NEXT**

7. Enter **Static IP Pool** and then click on **NEXT**

8. Enter DNS and then click on **NEXT**

9. Review and click **FINISH**



Create SNAT to allow outbound traffic

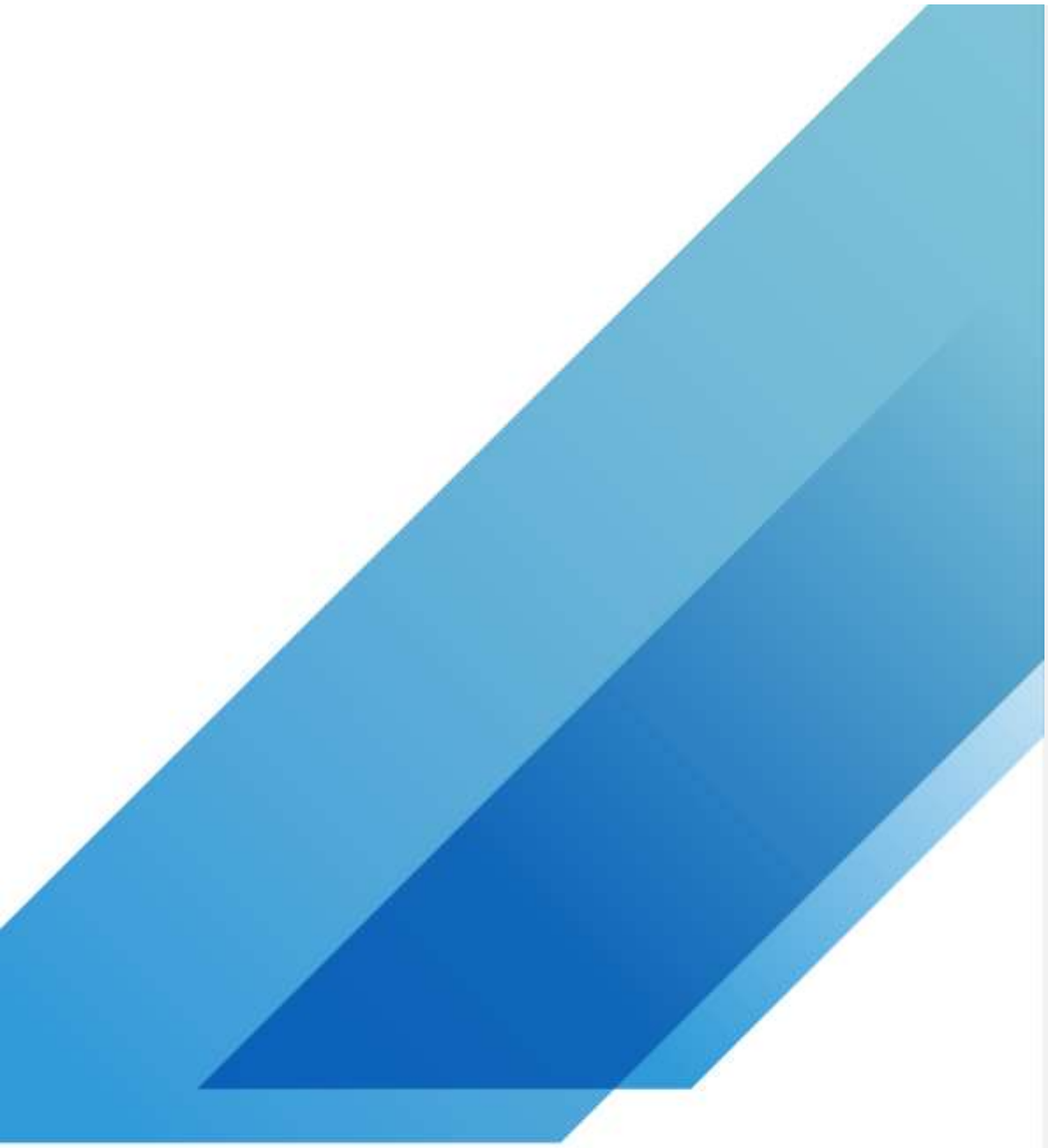
1. Select proper edge gateway and then under NAT click on **NEW**

2. Enter SNAT information and then click on **SAVE.**

Note: Make sure External IP is on the Edge and that the Internal IP matches the org network subnet

Conclusion

At this point, the VMware Cloud Director service Instance is ready to deploy tenant VMs. For more information see the documentation for *VMware Cloud on AWS*, *VMware Cloud Director service* and *VMware Cloud Director*.



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