Table of contents

Introduction ....................................................................................................................................................................... 3
Prerequisites ..................................................................................................................................................................... 3
  Prerequisites ............................................................................................................................................................ 3
Plan and Create Oracle Cloud VMware Solution ................................................................................................................... 3
  Plan the Oracle Cloud VMware Solution .................................................................................................................... 3
  Create the Oracle Cloud VMware Solution ............................................................................................................... 3
  Create a Jumpbox and Allow Network Access ........................................................................................................... 3
Prepare for and Deploy the Reverse Proxy .......................................................................................................................... 4
  Create the CDs Instance (If not already created) ........................................................................................................... 4
  Generate an API Token .................................................................................................................................................. 4
  Generate the Proxy ....................................................................................................................................................... 4
  Prepare the Environment for the Proxy ........................................................................................................................ 8
  Deploy and Connect the Proxy ....................................................................................................................................... 8
Allocate Public IP(s) for Tenant Edges and Create DNAT .................................................................................................. 11
  Allocate Public IP(s) for Tenant Edges ........................................................................................................................ 12
  Create DNAT for Public IP to Tenant Edges .................................................................................................................. 12
Conclusion ........................................................................................................................................................................ 12
Introduction
This white paper is intended for Cloud Services Provider – SaaS who need guidance on how to configure Oracle Cloud VMware Solution with VMware Cloud Director service (CDs). The content below describes the manual deployment process required to setup the deploy a CDs instance (CDI), deploy a Software Defined Data Center (SDDC), associate it to CDs, and using IPSec VPN for connectivity to from Oracle Cloud VMware Solution to OCI VCNs.

Disclaimer
VMware does not endorse, recommend, or support any third-party utility or solution.
A general knowledge of networking and security, as well as on VMware Cloud Director concepts is also required.

Prerequisites
The following is a list of prerequisites required before proceeding. Before proceeding, the projects should be created, and the account used to configure them have the appropriate permission to configure all aspects of the projects.

Prerequisites
- An Oracle Cloud account with VCN created for Oracle Cloud VMware Solution.
- Node quota allocated in Oracle that will be used to create the Oracle Cloud VMware Solution.

Plan and Create Oracle Cloud VMware Solution

Plan the Oracle Cloud VMware Solution
The following section provides links on how the Oracle Cloud VMware Solution architecture works to understand how to plan for the solution that tenants will consume for resources.
- Read and understand the architecture in the following documentation in the link on Understand Deployment Architecture for node size planning, requesting quota, setting up the networking, and other required tasks: Learn About Deploy an SDDC to the Cloud

Create the Oracle Cloud VMware Solution
The following section provides links on how to create the Oracle Cloud VMware Solution (SDDC) that tenants will consume for resources.
- Read and complete the steps in the following documentation in the link on creating and configuring an Oracle Cloud VMware Solution: Deploy the SDDC to the Cloud

Create a Jumpbox and Allow Network Access
The following section provides links on how to create a jumpbox host in Oracle Cloud to use for vCenter and NSX access as well as other potential tasks made easier with local access.
- Read and complete the steps in the following documentation in the link on creating an Oracle jumpbox host: Create the Computes
Prepare for and Deploy the Reverse Proxy

The following section describes the steps required to prepare the environment for the proxy, generate it, and then deploy and associate the proxy to the Oracle Cloud VMware Solution that was created.

Create the CDs Instance (If not already created)

The following steps describe the steps required to create a CDs instance if one does not already exist that the SDDC should be associated to.

- In Partner Navigator, navigate to VMware Cloud Director service and click CREATE INSTANCE.
- Enter the required information and click CREATE INSTANCE.
- The CDs instance will take around 30 minutes to complete.

Generate an API Token

The following describes the steps required to generate an API token to generate the VMware proxy used for the SDDC association task.

- Follow the instructions in the following link to generate an API token to use for the SDDC association task: How Do I Generate an API Token

Generate the Proxy

The following describes the steps required to generate the proxy that will be used for the connection from CDs to the SDDC. These steps are completed from the partner navigator portal and require the CDs instance to already exist.

- On the Oracle based jumpbox, log into Partner Navigator, navigate to VMware Cloud Director service.
- On the CDs instance to associate the SDDC to click Actions and select Generate VMware Reverse Proxy OVA.
Enter the following:

- API Token: API token from your account in Partner Navigator
- Datacenter Name: The name of the datacenter from within vCenter
- vCenter FQDN: Log into OCI to get the FQDN of the VCSA appliance. The FQDN can be found under Hybrid -> VMware Solution -> Software-Defined Data Centers -> SDDC_NAME -> vCenter information:
  - Management IP for vCenter: The IP address of the VCSA appliance, which is the IP in the above screen shot.
- **NSX URL**: URL of the NSX manager. The FQDN for the NSX-T manager can be found by examining the certificate when logging in. The NSX management IP to access the manager is shown below.

![CDs-Validation-3](image)

- **Additional hosts within the SDDC to proxy**: The IP address of the ESXi hosts that are part of the SDDC. Note that each IP MUST be on a separate line. You can find the management IP for the hosts in vCenter by clicking on the ESXi host name -> Configure -> VMkernel Adapters and getting the IP of the adapter with Management enabled. **Note**: To ensure future ESXi host additions are already in the allowed list, it is suggested to use a CIDR notation for this setting, such as 10.31.0.0/24.

- Once the information has been entered, click **GENERATE VMWARE REVERSE PROXY OVA**
The Activity Log on the CDs instance can be monitored for the status of the task. Skip ahead to Prepare the Environment for the Proxy if desired to complete those steps while waiting for the proxy to generate.

Once the task has completed, click the three horizontal dots, and select View Files.

Click the down arrow icon to download the OVF file to the provider jumphost locally.
Prepare the Environment for the Proxy
Before deploying the proxy, ensure you have an available IP address on the vSphere DPG network.

Deploy and Connect the Proxy
The following steps describes the steps required to deploy the proxy and associate it to the CDs instance in Partner Navigator.

- On the Oracle jumpbox, open a browser to the vCenter UI.
- Right click Cluster and select Deploy OVF Template.
- Select Local File and navigate to the reverse proxy OVF that was downloaded, select it and click NEXT.

- Provide a virtual machine name and click NEXT.
- Select the Cluster name and click NEXT.
- Click Next.
- Select the vsanDatastore and click NEXT.
- Select the vSphere DPG VLAN and click NEXT.
- On the Customize Template page, copy and save the root password and click NEXT.
- Click FINISH to being the deployment.
- After deployment, power on the appliance.
- Log into the proxy appliance and verify it has an IP address by running “ip a”.
- Run the command “systemctl status transporter-client.service” and ensure it shows running.
- If the transporter-client.service is showing an error, verify that DNS resolution is working properly and that it can access the Internet. The below screenshot shows an error when DNS is not working.

- Run the command “transporter-status.sh” and verify it shows connected.

- In Partner Navigator, go to the CDs instance the proxy was generated from and click Actions -> Associate a Datacenter via VMware Proxy.
Enter the following:

- **Datacenter name:** Name of datacenter from within vCenter.
- **vCenter FQDN:** VCSA FQDN that was used to generate the proxy
- **NSX URL:** URL of NSX manager that was used to generate the proxy
- **It will attempt an initial connection to the proxy and if it connects, it will display Connection Established**

- **On the Credentials page, enter the following:**
  - **vCenter Username:** `administrator@vsphere.local`
  - **vCenter Password:** The password for the supplied username
  - **Disconnected Network Segment:** Enter the name of the network the proxy is on (Proxy)
- Authentication to NSX Type: Authenticate via NSX Username and Password
- NSX Username: admin
- NSX Password: The password for NSX admin account

Check the box to acknowledge charges will begin and click SUBMIT.

- The Activity Log on the CDs instance can be monitored for the status of the association task.
- It should take about 5 to 10 minutes for the task to completed.
- Once the task has finished, it can take up to 4 hours to show up as an associated SDDC in the CDs instance. Opening the VCD instance to bring up the UI should show the SDDC as a PVCD that can be used to create VDCs for tenants; you do not have to wait for it to show up as associated in the Partner Navigator portal.

Allocate Public IP(s) for Tenant Edges and Create DNAT
Allocate Public IP(s) for Tenant Edges
For inbound Internet access on public IP to workloads behind a Tier 1 gateway, allocate a public IP for the DNAT rule from the Tier 0 to the tenant’s edge. The following section provides links on how to use allocate a public IP in OCI.

- Read and complete the steps in the following documentation in the link on Public IP Addresses: Public IP Addresses

Create DNAT for Public IP to Tenant Edges
Create a NAT on the Tier 0 gateway to the tenant’s Tier 1 edge external network.

- Read the instructions on Managing NSX-T Data Center Edge gateways: Managing NSX-T Data Center Edge Gateways

Create Recommended IPSec Parameter Profiles in NSX-T for OCI VPN Connections
Create Recommended IPSec Parameter Profiles
Create an IKE Profile and IPSec Profile in NSX-T manager for tenant Tier 1 for VPN connections based on Oracle recommendations. Failure to do so may result in unstable VPN tunnel connections.

- Create the profile in NSX-T manager by clicking on the tab for Networking -> Network Services -> VPN and then click on the Profiles tab in the left pane. Beside of Select Profile Type, click the drop down to create an IKE Profile, then switch to IPSec Profiles to create the other one.
- Create the profiles based on the recommended settings in bold on: Supported IPSec Parameters

Conclusion
At this point, the VMware Cloud Director service Instance is ready to deploy tenant VMs. For more information see the documentation for https://docs.vmware.com/en/VMware-Cloud-on-AWS/index.htmlVMware Cloud Director service and VMware Cloud Director.