## Standard Operating Procedure (SOP) to Access VMware Cloud (VMC) on AWS SDDC using vCenter PowerCLI, Python API, pyVmomi, and VMC on AWS API

### Prerequisites

1. \*\*VMC on AWS Account\*\*: Ensure you have access to a VMC on AWS account and a deployed SDDC.

2. \*\*PowerCLI\*\*: Install VMware PowerCLI on your local machine.

3. \*\*Python\*\*: Install Python on your local machine.

4. \*\*VMware vSphere Automation SDK for Python\*\*: Install the SDK using pip.

5. \*\*pyVmomi\*\*: Install pyVmomi using pip.

6. \*\*VMC on AWS API Access\*\*: Ensure you have API access to your VMC on AWS account.

7. \*\*Network Access\*\*: Ensure you have network connectivity to the VMC on AWS SDDC.

### Step-by-Step Procedure

#### 1. Access VMC on AWS SDDC using vCenter PowerCLI

##### 1.1 Install VMware PowerCLI

- Open PowerShell as an Administrator and run:

```powershell

Install-Module -Name VMware.PowerCLI -Scope CurrentUser

```

##### 1.2 Connect to the VMC on AWS vCenter

- Launch PowerCLI and connect to the vCenter server using the following command:

```powershell

Connect-VIServer -Server <vCenter-Server-URL> -User <Username> -Password <Password>

```

##### 1.3 Verify Connection

- Run a command to verify the connection, such as listing the VMs:

```powershell

Get-VM

```

##### 1.4 Perform Operations

- Use various PowerCLI cmdlets to perform desired operations on the SDDC. For example, to get information about a specific VM:

```powershell

Get-VM -Name <VM-Name>

```

##### 1.5 Disconnect from vCenter

- After completing your tasks, disconnect from the vCenter server:

```powershell

Disconnect-VIServer -Server <vCenter-Server-URL> -Confirm:$false

```

#### 2. Access VMC on AWS SDDC using Python API

##### 2.1 Install VMware vSphere Automation SDK for Python

- Install the SDK using pip:

```bash

pip install --upgrade git+https://github.com/vmware/vsphere-automation-sdk-python.git

```

##### 2.2 Set Up Python Script

- Create a Python script to connect to the vCenter server.

##### 2.3 Sample Python Script

- Below is a sample Python script to connect and perform basic operations:

```python

from com.vmware.vsphere.client import create\_vsphere\_client

from vmware.vapi.lib.connect import get\_requests\_connector

import requests

import urllib3

# Disable SSL warnings

urllib3.disable\_warnings(urllib3.exceptions.InsecureRequestWarning)

# Connect to vCenter server

session = requests.session()

session.verify = False # Disable SSL verification

# Create a connector

connector = get\_requests\_connector(session=session, url='https://<vCenter-Server-URL>/sdk')

# Login and create a vSphere client

client = create\_vsphere\_client(server='<vCenter-Server-URL>', username='<Username>', password='<Password>', connector=connector)

# Example: List all VMs

vms = client.vcenter.VM.list()

for vm in vms:

print(vm)

# Logout

session.close()

```

##### 2.4 Run the Script

- Execute the Python script:

```bash

python your\_script.py

```

#### 3. Access VMC on AWS SDDC using pyVmomi

##### 3.1 Install pyVmomi

- Install pyVmomi using pip:

```bash

pip install pyvmomi

```

##### 3.2 Set Up Python Script

- Create a Python script to connect to the vCenter server using pyVmomi.

##### 3.3 Sample Python Script using pyVmomi

- Below is a sample Python script to connect and perform basic operations using pyVmomi:

```python

from pyVim.connect import SmartConnect, Disconnect

from pyVmomi import vim

import ssl

# Disable SSL certificate verification

context = ssl.\_create\_unverified\_context()

# Connect to vCenter server

si = SmartConnect(host='<vCenter-Server-URL>',

user='<Username>',

pwd='<Password>',

sslContext=context)

# Retrieve the content

content = si.RetrieveContent()

# Example: List all VMs

container = content.viewManager.CreateContainerView(content.rootFolder, [vim.VirtualMachine], True)

vms = container.view

for vm in vms:

print(vm.name)

# Disconnect from vCenter server

Disconnect(si)

```

##### 3.4 Run the Script

- Execute the Python script:

```bash

python your\_script\_pyvmomi.py

```

#### 4. Access VMC on AWS SDDC using VMC on AWS API

##### 4.1 Obtain API Token

- Log in to the VMC on AWS Console and navigate to \*\*API Tokens\*\*.

- Generate a new API token with appropriate permissions.

##### 4.2 Install Required Python Libraries

- Install the `requests` library using pip:

```bash

pip install requests

```

##### 4.3 Set Up Python Script

- Create a Python script to interact with the VMC on AWS API.

##### 4.4 Sample Python Script using VMC on AWS API

- Below is a sample Python script to authenticate and perform basic operations using the VMC on AWS API:

```python

import requests

import json

# Define API token and endpoints

API\_TOKEN = '<Your-API-Token>'

ORG\_ID = '<Your-Organization-ID>'

SDDC\_ID = '<Your-SDDC-ID>'

BASE\_URL = 'https://vmc.vmware.com'

# Set headers

headers = {

'Content-Type': 'application/json',

'csp-auth-token': API\_TOKEN

}

# Example: Get SDDC details

sddc\_url = f'{BASE\_URL}/vmc/api/orgs/{ORG\_ID}/sddcs/{SDDC\_ID}'

response = requests.get(sddc\_url, headers=headers)

if response.status\_code == 200:

sddc\_details = response.json()

print(json.dumps(sddc\_details, indent=2))

else:

print(f'Failed to retrieve SDDC details: {response.status\_code} - {response.text}')

```

##### 4.5 Run the Script

- Execute the Python script:

```bash

python your\_script\_vmc\_api.py

```

#### 5. Documentation and References

- \*\*VMware PowerCLI Documentation\*\*: [VMware PowerCLI User's Guide](https://code.vmware.com/web/dp/tool/vmware-powercli)

- \*\*VMware vSphere Automation SDK for Python\*\*: [vSphere Automation SDK for Python Documentation](https://code.vmware.com/apis/1166/vsphere)

- \*\*pyVmomi Documentation\*\*: [pyVmomi GitHub Repository](https://github.com/vmware/pyvmomi)

- \*\*VMC on AWS API Documentation\*\*: [VMC on AWS API Documentation](https://developer.vmware.com/apis/1264/vmware-cloud-on-aws)

### Notes

- Replace `<vCenter-Server-URL>`, `<Username>`, `<Password>`, `<VM-Name>`, `<Your-API-Token>`, `<Your-Organization-ID>`, and `<Your-SDDC-ID>` with appropriate values.

- Ensure you have the necessary permissions to access and manage the vCenter and VMC on AWS resources.

- Always follow security best practices, such as avoiding hardcoding credentials in scripts.

By following this SOP, you should be able to access and manage your VMC on AWS SDDC effectively using vCenter PowerCLI, Python API, pyVmomi, and VMC on AWS API.