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Create subnet lab guide

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## Exercise 1: Creating a Runbook

1. Logged into Calm with the given credentials, and click on the **Runbook** tab.
2. Click on **+ Create Runbook**
3. For the **Name** field input “**CREATE SUBNET user<Number>**”
4. (Optional) Provide a description for the runbook
5. Select your respective project “**user<Number>\_project**”
6. Click **Proceed**

## Exercise 2: Adding a Task

This exercise allows you to add one or many task inside a runbook to execute scripts.

1. Click on the **+ Add Task**
2. Input the name **“Print Hello World”** under the **Task Name** field
3. Expand the **Type** dropdown field and select **Execute**
4. Expand the **Script Type** and select **Escript**
5. Click on **Save**

## Exercise 3: Running a Runbook

Credentials allows you to preset the username and password for the VM itself.

1. Under the script field, write a simple print Hello World code

print("Hello World")

1. Under **Version** select **Python 2** (Might not be required depending on Calm Version)
2. Click on **Save**
3. Click on **Execute**
4. You will see the “Hello World” text under the task output

## Exercise 4: Runbook Configuration

### Task 1: Adding Credential

1. Click on the Configuration tab, and click on **“Add/Edit Credentials”**
2. Click on **+ Add Credential**
3. Under the **Name** field, name it **pc\_cred**
4. Under **Username** and **Password** field, key in the Prism Central Admin username and password provided in the lab sheet variable table
5. Click **Done**

### Task 2: Adding Prism Central IP Variable

1. Click on the configuration tab, and click on “**Add/Edit Variables**”
2. Click on **+ Add Variable**
3. Under the **Name** field, name the variable **ip\_pc**
4. Under the Value field, key in the provided Prism Central IP provided in the lab sheet variable table
5. Click **Done**
6. Click **Save**

### Task 3: Adding VPC UUID Variable

1. Click on **+ Add Variable**
2. Under the **Name** field, name the variable **vpc\_uuid**
3. Under the **Value** field, key in the uuid of the VPC that was created from the previous lab
4. Click **Done**
5. Click **Save**

### Task 4: Adding Subnet Name Variable

1. Click on **+ Add Variable**
2. Under the **Name** field, name the variable **subnet\_name**
3. Click on “**Show Additional Options**”
4. Under “**Label”** field, name it “**Name Of Subnet”**
5. Click on the **Running Man Logo** to enable runtime prompt for the variable
6. Click **Done**
7. Click **Save**

### Task 6: Adding IP Prefix Length Variable

1. Click on **+ Add Variable**
2. Under the **Name** field, name the variable **ip\_prefix\_length**
3. Click on “**Show Additional Options**”
4. Under “**Label”** field, name it “**IP CIDR Prefix Length”**
5. Click on the **Running Man Logo** to enable runtime prompt for the variable
6. Click **Done**
7. Click **Save**

### Task 7: Adding Starting IP Variable

1. Click on **+ Add Variable**
2. Under the **Name** field, name the variable **ip\_subnet**
3. Click on “**Show Additional Options**”
4. Under “**Label”** field, name it “**Start IP”**
5. Click on the **Running Man Logo** to enable runtime prompt for the variable
6. Click **Done**
7. Click **Save**

### Task 8: Adding Gateway IP Variable

1. Click on **+ Add Variable**
2. Under the **Name** field, name the variable **ip\_gateway**
3. Click on “**Show Additional Options**”
4. Under “**Label”** field, name it “**IP Gateway”**
5. Click on the **Running Man Logo** to enable runtime prompt for the variable
6. Click **Done**
7. Click **Save**

### Task 9: Adding IP Pool Range Variable

1. Click on **+ Add Variable**
2. Under the **Name** field, name the variable **ip\_pool\_range**
3. Click on “**Show Additional Options**”
4. Under “**Label”** field, name it “**IP Pool Range”**
5. Click on the **Running Man Logo** to enable runtime prompt for the variable
6. Click **Done**
7. Click **Save**

## Exercise 5: Writing the Add Subnet Task

### Task 1: Adding a New Task

1. Click on the **+ Add Task**
2. Input the name **“Create Subnet”** under the **Task Name** field
3. Expand the **Type** dropdown field and select **Execute**
4. Expand the **Script Type** and select **Escript**
5. Click on **Save**

### Task 2: Variable Declaration

1. Click on the newly created “**Create Subnet**” task in the editor
2. Under **Type** field, select **Execute**
3. Under **Script Type**, select **EScript**
4. Under **Version**, select **Python 2**
5. Under the **Script** field in the following code

import requests

# Credential and IP for making API Calls

IP\_PC = "@@{ip\_pc}@@"

USER\_PC = "@@{pc\_cred.username}@@"

PASS\_PC = "@@{pc\_cred.secret}@@"

# Network variables for creating subnet

UUID\_VPC = "@@{vpc\_uuid}@@"

OVERLAY\_NAME = "@@{subnet\_name}@@"

OVERLAY\_PREFIX\_LEN = "@@{ip\_prefix\_length}@@"

OVERLAY\_IP = "@@{ip\_subnet}@@"

OVERLAY\_GATEWAY = "@@{ip\_gateway}@@"

OVERLAY\_POOL = "@@{ip\_pool\_range}@@"

### Task 3: Define Subnet Configuration Payload Method

1. Under the **Script** field, type in the following code after the variable declarations

def define\_ip\_config(ip\_prefix\_length, ip\_subnet, ip\_gateway, ip\_pool\_range):

    return {

        "subnet\_ip": ip\_subnet,

        "prefix\_length": int(ip\_prefix\_length),

        "default\_gateway\_ip": ip\_gateway,

        "pool\_list": [{

            "range": ip\_pool\_range

        }]

    }

### Task 4: Create Subnet Method

1. Under the **Script** field, type in the following code after the define\_ip\_config() method

def create\_subnet(ip\_pc, user\_pc, pass\_pc, vpc\_uuid, subnet\_name, ip\_config):

    url = "https://{}:9440/api/nutanix/v3/subnets".format(ip\_pc)

    headers = {

        "Accept": "application/json",

        "Content-Type": "application/json"

    }

    payload = {

        "spec": {

            "name": subnet\_name,

            "resources": {

                "subnet\_type": "OVERLAY",

                "vpc\_reference": {

                    "kind": "vpc",

                    "uuid": vpc\_uuid

                },

                "ip\_config": ip\_config

            }

        },

        "metadata": {

            "kind": "subnet"

        },

        "api\_version": "3.1.0"

    }

    response = requests.request("POST", url, auth=(user\_pc, pass\_pc), headers=headers, data=json.dumps(payload), verify=False)

    print(response.text)

### Task 5: Execute Methods

user\_subnet\_config = define\_ip\_config(OVERLAY\_PREFIX\_LEN, OVERLAY\_IP, OVERLAY\_GATEWAY, OVERLAY\_POOL)

create\_subnet(IP\_PC, USER\_PC, PASS\_PC, UUID\_VPC, OVERLAY\_NAME, user\_subnet\_config)

|  |  |
| --- | --- |
| **Lab Variables** | |
| **Item Name** | **Value** |
| Prism Central IP | 172.16.11.1 |
| Prism Central Admin Username | admin |
| Prism Central Admin Password | P@ssw0rd12345$ |
| Login Username | user<Number>@teamX.lab |
| Login Password | P@ssw0rd12345$ |
| Image to Use | RHELSVR8.8\_Training |
| Rhel Username | root |
| Rhel Password | P@ssw0rd |
| DNS Server | <To Be Updated> |
| Rhel Repo | <To Be Updated> |
| Underlay Name | VPC-Underlay |
| Underlay UUID | 700520b1-aa87-43f7-9b77-2265ee95788e |

|  |  |
| --- | --- |
| **LOGIN CREDENTIALS** | |
| **Item Name** | **Value** |
| Prism Central URL | https://172.16.11.1:9440/dm/infrastructure |
| Calm URL | https://172.16.11.1:9440/dm/self\_service/ |
| Admin Username | admin\_workshop |
| Admin Password | P@ssw0rd |
| Student Username | User<Number>@teamX.lab |
| Student Password | P@ssw0rd |