Nutanix Infrastructure as Code
terraform-provider-nutanix: image resource

This Old Cloud

October 2017

@JonKohler

Infrastructure as Code for Nutanix AHV
terraform-provider-nutanix: image resource type

What's New?

- New resource type: **nutanix_image**
- Allows users to:
  - Interact with Nutanix Image Service via terraform
  - CRUD workflow on disk/ISO images
  - Plumb in images to virtual_machine CRUD, to attach disk/ISOs dynamically
- Images can be:
  - ISO's
  - VHD(x), VMDK, RAW, QCOW2
  - Sourced from an URL / file
  - Attached to a VM after creation
- Nutanix Image Service handles:
  - Conversion of formats to Nutanix (X format to raw disk)
  - Creating or validating checksums

Demo Time
Sample Workflow

Sample Workflow: Provision 3x VMs using new images

Goals

- Provision 3x new VM's, leveraging nutanix_image resource

Task List

- Add CentOS 7.3 install ISO
- Add Windows 2016 install ISO
- Add Nutanix VirtIO (windows drivers) ISO
- Add Cirros disk image
- Create three VM's (CentOS, Windows, Cirros)
- Validate VM creation / boot / installer load

Sample Workflow: Provision 3x VMs using new images

Pseudo Code for Terraform TF file

1. Define Prism Credentials in provider “nutanix”
2. Define four resources “nutanix_image”:
   - Centos73-minimal-iso
   - Nutanix-virtio-111-iso
   - Windows-2016-iso
   - Cirros-034-disk
   - Source all from local web server / filer
   - Provide description for future ease of use
3. Define three resources “nutanix_virtual_machine”:
   - tf-centos
   - tf-cirros
   - Tf-windows
   - Create all disks / cd-rom’s by referencing nutanix_image resources dynamically

Sample Workflow: Provision 3x VMs using new images

Pseudo to Actual: Step 1 – Define Provider

- Pseudo Code
  - Define Prism Credentials in provider “nutanix”
- Actual Code (and notables)

```
provider "nutanix" {
    username = "jon"
    password = "superSecretStuff/1234"
    endpoint = "10.5.80.30"
    insecure = true
}
```

  - **username** == Prism User Name
  - **password** == self explanatory
  - **endpoint** == Prism Virtual IP Address
  - **insecure** == Bool, true if using self signed / untrusted certs

Sample Workflow: Provision 3x VMs using new images

Pseudo to Actual: Step 2 – Define nutanix_image resources

- Pseudo Code
  - Define four resources “nutanix_image”
  - Source all from local web server / filer
  - Provide description for future ease of use
- Actual Code

```
 8 resource "nutanix_image" "centos73-minimal-iso" {
 9     name = "centos73-minimal-iso"
10     source_uri = "http://earth.corp.nutanix.com/isos/linux/centos/7/CentOS-7.3-x86_64-Minimal-1611.iso"
11     description = "here is my centos73 image from earth filer"
12 }
13
14 resource "nutanix_image" "nutanix-virtio-111-iso" {
15     name = "nutanix-virtio-111-iso"
16     source_uri = "http://endor.dyn.nutanix.com/GoldImages/virtio/1.1.1/Nutanix-VirtIO-1.1.1.iso"
17     description = "here is my Nutanix-VirtIO-1.1.1.iso image"
18 }
19
20 resource "nutanix_image" "windows2016-iso" {
21     name = "windows2016-iso"
22     source_uri = "http://earth.corp.nutanix.com/isos/microsoft/server/2016/en_windows_server_2016_x64_dvd_9327751.iso"
23     description = "heres a windows iso"
24 }
25
26 resource "nutanix_image" "cirros-034-disk" {
27     name = "cirros-034-disk"
28     source_uri = "http://endor.dyn.nutanix.com/acro_images/DISKs/cirros-0.3.4-x86_64-disk.img"
29     description = "heres a tiny linux image, not an iso, but a real disk!"
30 }
```

Sample Workflow: Provision 3x VMs using new images

Pseudo to Actual: Step 3 – Define nutanix_virtual_machine resources

- Pseudo Code
  - Define three resources “nutanix_virtual_machine”
  - Create all disks / cd-rom’s by referencing nutanix_image resources dynamically
- Actual Code→
- Notables
  - For all images: No need to specify disk vs cdrom
  - For ISO installs, specifying an addl disk in disk_list array, with just size in MiB, will create base disk to install OS to.

```
resource "nutanix_virtual_machine" "tf-windows" {
    name = "tf-windows"
    spec {
        description = "Beep Boop I run windows 2016"
        resources = {
            num_vcpus_per_socket = 1
            num_sockets = 2
            memory_size_mib = 2048
            power_state = "ON"
            nic_list = [
                {
                    subnet_reference = {
                        kind = "subnet"
                        uuid = "bf1168dd-9355-4dc2-b3eb-18c65615bcba"
                    }
                }
            ]
            disk_list = [
                {
                    data_source_reference = {
                        kind = "image"
                        uuid = "${nutanix_image.windows2016-iso.id}"
                    }
                },
                {
                    data_source_reference = {
                        kind = "image"
                        uuid = "${nutanix_image.nutanix-virtio-111-iso.id}"
                    }
                },
                {
                    disk_size_mib = 50000
                }
            ]
        }
    }
}
```

@JonKohler

Demo Time
Workflow in Action

@JonKohler

This Old Cloud

Subscribe, Comment, and reach out on Twitter @JonKohler

Demo TF file and Preso PDF on GitHub/JonKohler

@JonKohler