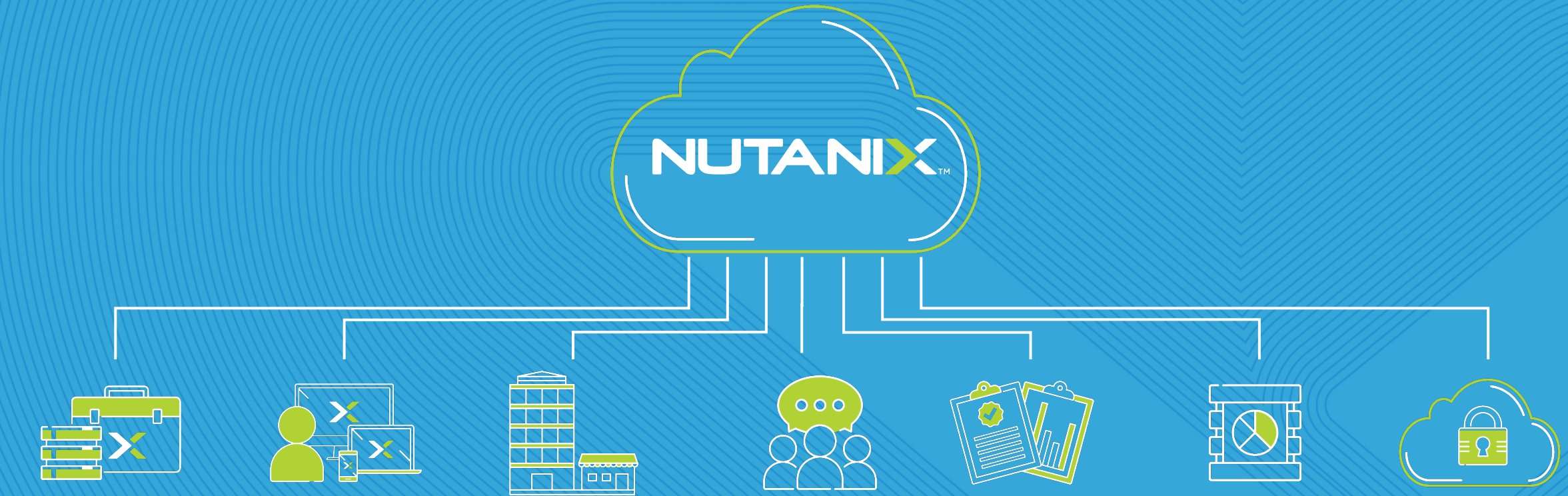
Nutanix Infrastructure as Code
Using Nutanix's Terraform Provider

This Old Cloud

September 2017

@JonKohler

Powering All Workloads and Use Cases



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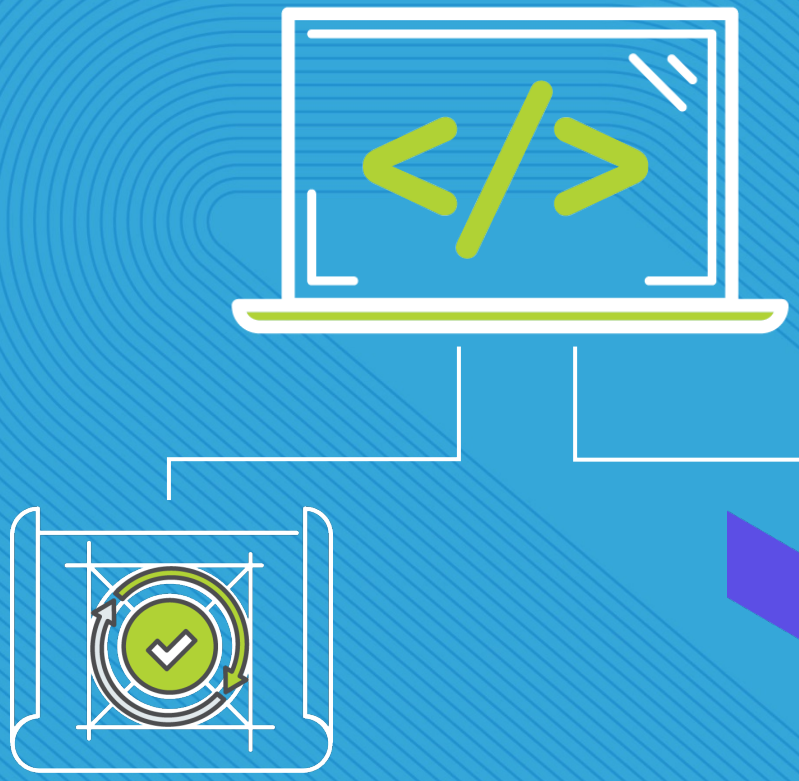
Infrastructure as Code for Nutanix AHV



Nutanix Calm

Nutanix Terraform Provider

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Infrastructure as Code for Nutanix AHV
Nutanix Terraform Provider

Available Features (as of Sept 2017)

- Single resource type: **nutanix_virtual_machine**
- Built using Nutanix v3 Intentful (declarative) API + associated go SDK
- Nutanix will upstream provider (terraform-provider-nutanix)
- Versions Supported
  - Terraform 0.10.5+
  - Nutanix AOS 5.5+
- Heads Up!
  - v3 API's are Tech Preview as of 5.1.2
  - 5.1.2 v3 API tech preview is limited to **Prism Element**
  - As such, pre-GA code for terraform provider will be **Prism Element (5.1.2) only**
  - Once GA, terraform provider will be **Prism Central (5.5+) only**

Demo Time
Sample Workflow

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Sample Workflow: Provision a VM from an Image

Goals

- Provision VM on Nutanix AHV called “ThisOldCloud-TF-Windows”
- Configure 2 vCPU, 2 GB MEM compute resources
- Clone disk Windows disk image from Nutanix Image Service
- Connect VM to existing virtual network
- Power VM up

Sample Workflow: Provision a VM from an Image

Pseudo Code for Terraform TF file

- Define Prism Credentials in provider “nutanix”
- Define resource “nutanix_virtual_machine” for “ThisOldCloud-TF-Windows”
- Define Intent Spec under “ThisOldCloud-TF-Windows”, containing
  - 2 vCPUs across both sockets **and/or** cores
  - 2048 **MiB** memory
  - Virtual network NIC with UUID of network to be used
  - Virtual disk image with UUID of image to be used
  - Simple metadata for any related configuration
- Define any additional steps / outputs / etc (Terraform B.A.U)

Sample Workflow: Provision a VM from an Image

Actual Code for Terraform TF file

- Pseudo Code
  - Define Prism Credentials in provider “nutanix”
- Actual Code

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

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

Sample Workflow: Provision a VM from an Image

Actual Code for Terraform TF file

- Pseudo Code
  - Define resource (with intent spec) under “nutanix_virtual_machine” for “ThisOldCloud-TF-Windows”
- Actual Code
  - Notable Items
    - **vCPU vs Sockets:** Buyers choice!
    - **memory_size_mib:** MiB not MB
    - **nic_list:** UUID from acli net.list
    - **nic_list:** This is an array, so you could provision multiple
    - **disk_list:** UUID from acli image.list
    - **disk_list:** this is also an array, so you could provision multiple, with a disk index to allow ordering
    - **Future:** VG’s will use separate resource type

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```
resource "nutanix_virtual_machine" "ThisOldCloud-TF-Windows" {
    name = "ThisOldCloud-TF-Windows"
    spec {
        description = "Beep Boop I'm a VM"
        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 = "4cf6d903-6e91-46a4-90b2-4d0c0ba3955f"
                    }
                }
            ]

        }
    }

    metadata = {
        kind = "vm"
    }
}
```

Demo Time
Workflow in Action

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Subscribe, Comment, and reach out on Twitter @JonKohler

Chat up Mark Lavi (Nutanix DevOps SME) @ HashiConf in Austin, September 18-20

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