

Provision Software-Defined Storage Infrastructure at Cloud Scale with Terraform Provider for Cisco Intersight

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Why ??

Why we need Terraform
provider for Intersight

Challenges

Steps to follow

Sequential execution of large number of steps

Errors

Missing a step / mis configuration cause errors

Scale

Challenging when deploying/managing on large number of server

Capabilities

Descriptive

Maintains “Desired Sate”

Create/Manage Intersight resources at scale

Version control

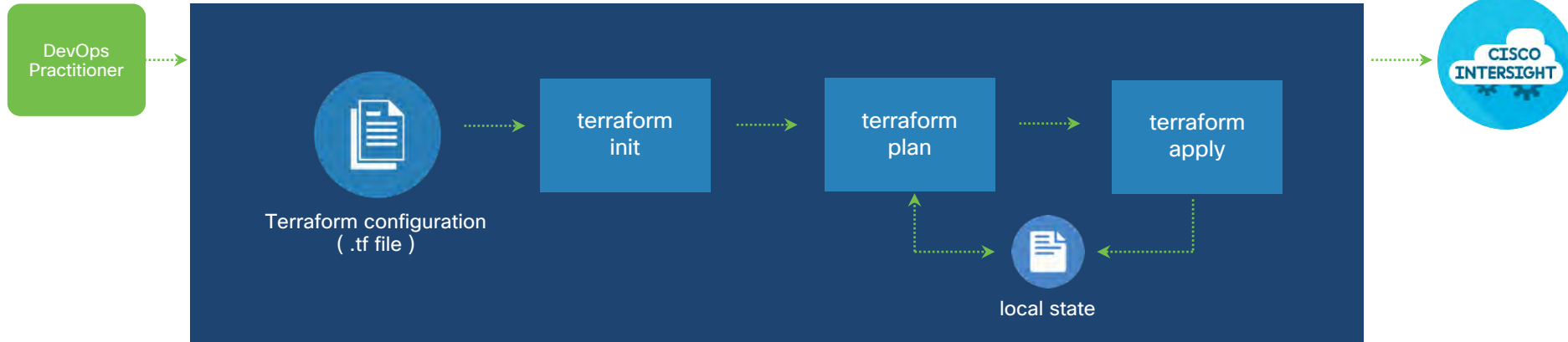
Audit Changes



Agenda

- Understand workflow
- Develop a sample Configuration file for Intersight resource
- Create Terraform environment
- Building Scale-Out storage Solution
 - Update firmware on all storage nodes
 - Create server policies
 - Map policies to server profiles
 - Deploy server profiles for storage nodes
 - Install the operating system on all nodes.

Terraform Workflow





Develop sample Terraform Configuration

API to Backend

Request URL

<https://intersight.com/api/v1/ntp/Policies>

Payload

Name: "test-ntp-policy"

NtpServers: ["time1.google.com",
"time2.google.com"]

Organization: {
Moid: "5de1101d6972652d3363e7e0"
ObjectType: "organization.Organization"
}

Terraform Resource

```
resource "intersight_ntp_policy" "test-ntp-policy" {  
  name      = "test-ntp-policy"  
  enabled   = true  
  ntp_servers = [  
    "time1.google.com",  
    "time2.google.com",  
  ]  
  organization {  
    object_type = "organization.Organization"  
    moid = "5de1101d6972652d3363e7e0"  
  }  
}
```

API to Backend

<https://intersight.com/api/v1/storage/DiskGroupPolicies>

<https://intersight.com/api/v1/vnic/EthQosPolicies>

<https://intersight.com/api/v1/boot/PrecisionPolicies>

<https://intersight.com/api/v1/adapters/ConfigPolicies>

Terraform Resource

`intersight_storage_disk_group_policy`

`intersight_vnic_eth_qos_policy`

`intersight_boot_precision_policy`

`intersight_adapter_config_policy`

API to Backend

<https://intersight.com/api/v1/storage/DiskGroupPolicies>

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Terraform Resource

`intersight_storage_disk_group_policy`

`intersight_vnic_eth_qos_policy`

`intersight_boot_precision_policy`

`intersight_adapter_config_policy`

GitHub Repository

Terraform provider for Intersight

<https://github.com/cisco-intersight/terraform-provider-intersight.git>

- ❑ **Documentation on resources and attributes**
- ❑ **Terraform Provider binary**
- ❑ **Source**



Bring environment up

Bring environment up

- ☐ **Install Terraform**
- ☐ **Clone terraform-intersight-sds**
- ☐ **Complete “provider” definition**
- ☐ **Copy Terraform binary from terraform-provider-intersight**
- ☐ **Define variables**



Build Cloud Scale Scale-Out Storage Solution!

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- ☐ **Create Policies**
- ☐ **Create Server Profiles**
- ☐ **Apply profiles to physical servers**
- ☐ **Update firmware on all storage nodes**
- ☐ **Install operating system on each node**
- ☐ **Deploy Storage Software**

Run commands in each directory

```
>> terraform init  
>> terraform plan  
>> terraform apply
```

Explore More

- ❑ **More details can be found in White Paper**

<https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/2201041-intersight-terrafirma-wp.html>

- ❑ **Terraform provider for the Cisco Intersight on GitHub**

<https://github.com/cisco-intersight/terraform-provider-intersight>

- ❑ **GitHub repository for the solution**

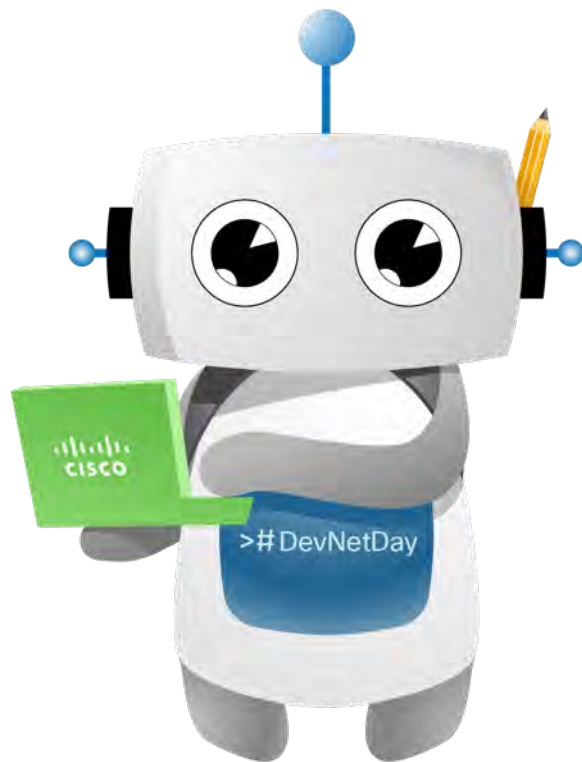
<https://github.com/ucs-compute-solutions/terraform-intersight-sds>

- ❑ **Cisco Intersight online help**

<https://intersight.com/help/home>

- ❑ **Installing Terraform**

<https://learn.hashicorp.com/terraform/getting-started/install.html>



Thank you



Possibilities

#CiscoLive | #DevNetDay