**Overview**  
  
Cisco Intersight Service for HashiCorp Terraform (IST) addresses the challenge of securely connecting and configuring on-premises environments to work with Terraform Cloud Business..  
  
Bridge the gap between your cloud-first IaC strategy and your on-premises infrastructure with the Integration of Cisco Intersight platform and HashiCorp Terraform For Cloud. A joint solution that simplifies your IaC strategy across your hybrid cloud operations, securely integrating your on-premises environment with Terraform Cloud Business - the enterprise-grade SaaS version of the open-source Terraform distribution.   
  
[Diagram, timeline

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/IntersightTerraform.jpg)  
  
This sandbox allows users to access a dedicated Terraform workspace and deploy VMs to a private sandbox ESXi environment. Users are automatically added to the Terraform account on startup and removed at the end of a reservation. Users are also provided read-only access to the InterSight.com account, where the configuration and setup for this sandbox can be viewed. Note that a Cisco CCO account is required to access the Intersight cloud.   
  
**Sandbox Architecture**  
  
The diagram below shows the Architecture of the Sandbox.  
  
  
  
**DevNet Learning Labs:**  
  
This sandbox is closely aligned with the following learning lab. To make the most of this sandbox, users are encouraged to follow the learning lab step by step with an active reservation

**Terraform Cloud**  
  
Terraform Cloud is HashiCorp's managed service offering that eliminates the need for unnecessary tooling and documentation to use Terraform in production. Provision infrastructure securely and reliably in the cloud.   
  
In this sandbox, users will be provisioned access to the the Cisco DevNet Organisation in Terrafrom cloud. From there, VMs can be deployed on the sandbox ESXi infrastructure   
  
Once the sandbox is in an Active state, the user will recieve an email from Terraform. Hit the "Accept Invitation" button to launch. [Graphical user interface, application, Teams

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/terraformemail.png)  
  
  
The Terraform Cloud UI will open. Accept the inviation to CiscoDevNet. A clean new workspace (vmworkspace) is now available for use.   
  
NOTE: Click on th screenshots below to enlarge  
  
[Graphical user interface, text, application, email, Teams

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/ChooseOrganisation.png)  
  
A clean new workspace (vmworkspace) is now available for use.   
  
[Graphical user interface, application, Teams

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/TerraformWorkspace.png)  
  
This worksapce is preconfigured with most variables for connection to the sandbox. However, three variables are available to users to play with during VM deployment.   
  
[Graphical user interface, text, application, Teams

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/TerraformVariables.png)

* vm\_count: The number of VMs deployed to the sandbox ESXi infrastructure
* vm\_cpu: The number of CPU allocated to the deployed VM
* vm\_memory: Amount of RAM (in MB) allocated to the deployed VM

**Cisco InterSight**  
  
Cisco Intersight is the relay between Terraform Cloud and the sandbox infrastructure. A dedicated intersight account has preclaimes targets to Terraform Cloud, Intersight Assist and Vcenter.  
  
Sandbox users does not need to perform any actions on the intersight account. However, it is important to understand how all the pieces of the integration are put together  
  
**NOTE: A Cisco.com Account needed to access Intersight.com**  
  
[Cisco Intersight](https://intersight.com/) requires that all users have a cisco.com account in order to create an Intersight account and claim Sandbox devices.   
  
Create a Cisco Intersight account, visit [Intersight Home Page](https://intersight.com/) to create your account. You must have a valid Cisco ID to create a Cisco Intersight account. If you do not have a Cisco ID, create one [here](https://sso.cisco.com/autho/forms/CDClogin.html)   
  
Once a cisco.com and intersight accounts have been provisioned and the sandbox is reserved and in an "Active" state, goto [Intersight Home Page](https://intersight.com/) and choose "Sign in with Cisco ID". After login, the following screen will be presented. Choose the "IntersightTerraformSandbox" account.   
  
[Graphical user interface, application

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/IntersightLogin.png)  
  
  
On the LHS pane, goto Admin --> Targets.   
  
A list of the targets required for this sandbox is show below.   
  
[A screenshot of a computer

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/Targets.png)

* InterSight Assist: This a deployed virtual machine in the Sandbox. Any device that is supported by Cisco Intersight but does not connect directly with it, will need a connection mechanism. Cisco Intersight Assist provides that connection mechanism, and helps you add devices into Cisco Intersight.
* VMware vCenter: This is the ESXi vsphere environment in the sandbox. Terraform Cloud workspace will deploy VMs into this infrastructure
* Terrafrom Cloud: This is the connection to the Terrafrom Cloud Organisation and Workspace. Sandbox users will deploy from this workspace

**Vcenter and Sandbox Resources**  
  
The DevNet Sandbox provides a nested ESXi Vcenter environment for each reservation. Virtual Hyperflex nodes provides storage with VMware providing RAM and CPU components. Each time a lab is spun up, the Vcenter and HX nodes are cloned. Intersight Assist is not cloned and permanententy connected to the Intersight Cloud.   
  
[Diagram

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/sandboxlab.png)  
  
NOTE: Access to the Intersight Assist Server is not permitted in this sandbox   
  
Once the sandbox is in an Active state, the user will recieve an VPN connection information via email. Connect to the sandbox using the credentails provided. For more information, take a look the VPN tab. Note that VPN information is also located in the output topology Output window.   
  
Once connected to VPN, user can access the resources in the sandbox. See below for IP and credentail information. A CentOS7 devbox is also available. See below for access information. Click to enlarge.   
  
  
  
The vCenter is initailly clean and only contains the CentOS Template. This template is cloned during a Terrafrom Cloud workspace run.   
  
  
[Graphical user interface, text, application, email

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/cleanvcenter.png)  
  
  
Once a new run has been kicked off from the Terraform Cloud workspace, the "Terraform-CentOS7Base" template is cloned. Users can control the number of clones deployed by setting variables. See the Terrafrom Cloud tab for more details.   
  
[Graphical user interface, text, application, email

Description automatically generated](https://devnetsandbox.cisco.com/sandbox-instructions/Terraform/vcenterfull.png)  
  
VMs will be automatically boot and take an IP from DHCP. The deployment is complete.   
  
Note that all VMs are deleted on teardown. Users do not have destroy privileges on the Terrafrom Cloud side.