Terraform: Understand Terraform Cloud

➤ **Section 9 : Understand Terraform Cloud and Enterprise Capabilities**

  ➤ Describe the benefits of Sentinel, Registry, and Workspaces

  ➤ Differentiate OSS and TFE Workspaces

  ➤ Summarize features of Terraform Cloud

➤ **Benefits of Sentinel :**

➤ Sentinel is an embedded policy-as-code framework integrated with the HashiCorp Enterprise products.

➤ **What is Policy?**

➤ A **policy** is a statement of intent, and is implemented as a procedure or protocol.

➤ Security policies adopted internally protect data privacy and infrastructure integrity.

➤ Operational policies prevent service outages or degradation.

➤ Treating policy as code requires a way to specify policies and a mechanism to enforce them.

Terraform : *Deployment Automation*

➤ **Benefits of Sentinel :**

➤ Sentinel provides a simple policy-oriented language to write policies, and integrates with our tools like Terraform and enforce them.

➤ Sample Policy - <u>Require VPCs to have DNS hostnames enabled</u>

```
# This policy uses the Sentinel tfplan/v2 import to require that all VPCs support DNS so that EC2 instances
created in them will have public DNS if they have public IPs

import "tfplan-functions" as plan

# Get all VPCs
allVPCs = plan.find_resources("aws_vpc")

# Filter to VPCs with violations
violatingSupportVPCs = plan.filter_attribute_is_not_value(allVPCs,
            "enable_dns_support", true, true)
violatingHostnameVPCs = plan.filter_attribute_is_not_value(allVPCs,
            "enable_dns_hostnames", true, true)

# Main rule
validated = length(violatingSupportVPCs["messages"]) is 0 and length(violatingHostnameVPCs["messages"])
is 0
main = rule {
  validated
}
```

➤ **Module Registry :**

➤ Terraform Cloud's private module registry helps you share Terraform modules across your Organization.

➤ Registry can be Private or Public.

➤ Modules in Registry can be Versioned and searched easily.

➤ **Benefits of Workspace :**

➤ Workspaces are how Terraform Cloud organizes infrastructure.

➤ Working with Terraform involves managing collections of infrastructure resources, and most organizations manage many different collections.

➤ Terraform Cloud manages infrastructure collections with workspaces instead of directories.

➤ Each workspace retains backups of its previous state files.

➤ Terraform Cloud manages a workspace's Terraform runs, it retains a record of all run activity.

➤ **Summarize features of Terraform Cloud :**

➤ Terraform Cloud is an application that helps teams use Terraform together.

➤ Terraform Cloud manages Terraform runs in a consistent and reliable environment.

➤ Terraform Cloud is available as a hosted service at https://app.terraform.io

➤ Terraform offer free accounts for small teams.

➤ Paid plans with additional feature sets for medium-sized businesses.

➤ Large enterprises can purchase Terraform Enterprise, HashiCorp self-hosted distribution of Terraform Cloud.

See you in next lecture …