Provisioning VMware vSphere 7 VM using Terraform in a Standalone ESXi Environment

Problem Description

Terraform requires a resource_pool_id when provisioning a VM in a VMware environment. However, in a standalone ESXi setup, the feature to create a resource pool ID is not available, as it is a feature of vCenter Server.

Facing ERROR:

vsphere_virtual_machine.example_vm: Creating...

│ Error: could not find resource pool ID "resgroup-1": ServerFaultCode: The object 'vim.ResourcePool:resgroup-1' has already been deleted or has not been completely created

│

│ with vsphere_virtual_machine.example_vm,

│ on main.tf line 30, in resource "vsphere_virtual_machine" "example_vm":

│ 30: resource "vsphere_virtual_machine" "example_vm" {

Solution

To overcome this limitation, we need to set up a vCenter Server as the backend for our VMware ESXi host. This process involves provisioning a domain controller and connecting the ESXi server to the domain controller, as connecting ESXi to vCenter requires a domain environment.

Steps to Provision VM on VMware vSphere 7 using Terraform

Provision Domain Controller:

- Provision a domain controller.
- Configure DNS settings to ensure proper domain resolution.

Connect ESXi to Domain Controller:

- Join the ESXi host to the domain created by the domain controller.
- Ensure that the ESXi host has proper DNS resolution to the domain controller.

Provision vCenter Server:

- Provision a vCenter Server.

Connect ESXi to vCenter:

- Using the vSphere Client or other methods, connect the ESXi host to the vCenter Server.

Create Resource Pool in vCenter:

- In the vSphere Client, create a resource pool within the vCenter inventory.
- Note down the ID or name of the resource pool.

Update Terraform Configuration:

- In your Terraform configuration, specify the resource_pool_id obtained from the vCenter resource pool.

```
resource "vsphere_virtual_machine" "example_vm" {

  name             = "terraform-vm"

  resource_pool_id = "YourResourcePoolID"  # Update this with the actual ID from vCenter

  datastore_id     = "YourDatastoreID"     # You need to get this value from your ESXi host

  num_cpus         = 2

  memory           = 2048

  # ... other configurations ...

}
```

Run Terraform:

- Execute terraform init and terraform apply to create the VM on the VMware infrastructure.

This solution leverages vCenter Server to provide the necessary features for Terraform. Ensure that all necessary networking configurations are in place for communication between the components.

Conclusion

By provisioning a vCenter Server as the backend for VMware ESXi and connecting it to a domain controller, we can address the resource pool limitation in Terraform for standalone ESXi environments. This solution provides a centralized management platform for virtualized infrastructure using VMware vSphere.