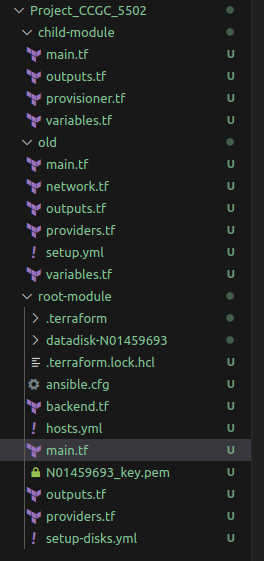
**CCGC 5502 Automation**

**Project**

**Student: Kate Karakow**

**Environment:**

****

**Terafform code for the main.tf in root that created 2 linux vms and 1 windows vm:**

**variable "location" {**

**description = "The Azure location where resources will be created"**

**default = "eastus"**

**}**

**variable "resource\_group\_name" {**

**description = "The name of the resource group"**

**default = "N01459693-group"**

**}**

**# Resource Group**

**resource "azurerm\_resource\_group" "main" {**

**name = var.resource\_group\_name**

**location = var.location**

**}**

**# Virtual Network and Subnet**

**resource "azurerm\_virtual\_network" "main\_vnet" {**

**name = "vmVNet"**

**address\_space = ["10.0.0.0/16"]**

**location = azurerm\_resource\_group.main.location**

**resource\_group\_name = azurerm\_resource\_group.main.name**

**}**

**resource "azurerm\_subnet" "main\_subnet" {**

**name = "vmSubnet"**

**resource\_group\_name = azurerm\_resource\_group.main.name**

**virtual\_network\_name = azurerm\_virtual\_network.main\_vnet.name**

**address\_prefixes = ["10.0.1.0/24"]**

**}**

**# SSH Public Key Data Source**

**data "azurerm\_ssh\_public\_key" "main\_key" {**

**name = "N01459693\_key"**

**resource\_group\_name = var.resource\_group\_name**

**}**

**# Public IPs for all VMs**

**resource "azurerm\_public\_ip" "vm\_public\_ip" {**

**count = 3 # Total VMs = 2 Linux VMs + 1 Windows VM**

**name = "vmPublicIP-${count.index + 1}"**

**location = azurerm\_resource\_group.main.location**

**resource\_group\_name = azurerm\_resource\_group.main.name**

**allocation\_method = "Dynamic"**

**}**

**# Network Interface for all VMs**

**resource "azurerm\_network\_interface" "vm\_nic" {**

**count = 3 # Total VMs = 2 Linux VMs + 1 Windows VM**

**name = "vmNIC-${count.index + 1}"**

**location = azurerm\_resource\_group.main.location**

**resource\_group\_name = azurerm\_resource\_group.main.name**

**ip\_configuration {**

**name = "internal"**

**subnet\_id = azurerm\_subnet.main\_subnet.id**

**private\_ip\_address\_allocation = "Dynamic"**

**public\_ip\_address\_id = azurerm\_public\_ip.vm\_public\_ip[count.index].id**

**}**

**}**

**# Linux Virtual Machines**

**resource "azurerm\_linux\_virtual\_machine" "linux\_vm" {**

**count = 2**

**name = "N01459693-c-vm${count.index + 1}"**

**resource\_group\_name = azurerm\_resource\_group.main.name**

**location = azurerm\_resource\_group.main.location**

**size = "Standard\_B1s"**

**admin\_username = "adminuser"**

**network\_interface\_ids = [element(azurerm\_network\_interface.vm\_nic.\*.id, count.index)]**

**os\_disk {**

**caching = "ReadWrite"**

**storage\_account\_type = "Standard\_LRS"**

**disk\_size\_gb = 10**

**}**

**source\_image\_reference {**

**publisher = "OpenLogic"**

**offer = "CentOS"**

**sku = "8\_2"**

**version = "latest"**

**}**

**admin\_ssh\_key {**

**username = "adminuser"**

**public\_key = data.azurerm\_ssh\_public\_key.main\_key.public\_key**

**}**

**}**

**# Windows Virtual Machine**

**resource "azurerm\_windows\_virtual\_machine" "windows\_vm" {**

**name = "N01459693-w-vm1"**

**resource\_group\_name = azurerm\_resource\_group.main.name**

**location = azurerm\_resource\_group.main.location**

**size = "Standard\_B1s"**

**admin\_username = "adminuser"**

**admin\_password = "AComplexP@ssw0rd!"**

**network\_interface\_ids = [azurerm\_network\_interface.vm\_nic[2].id]**

**os\_disk {**

**caching = "ReadWrite"**

**storage\_account\_type = "Standard\_LRS"**

**disk\_size\_gb = 10**

**}**

**source\_image\_reference {**

**publisher = "MicrosoftWindowsServer"**

**offer = "WindowsServer"**

**sku = "2019-Datacenter"**

**version = "latest"**

**}**

**}**

**# Network Security Group to allow ICMP (ping)**

**resource "azurerm\_network\_security\_group" "allow\_icmp" {**

**name = "allow-icmp-nsg"**

**location = azurerm\_resource\_group.main.location**

**resource\_group\_name = azurerm\_resource\_group.main.name**

**security\_rule {**

**name = "allow-inbound-icmp"**

**priority = 100**

**direction = "Inbound"**

**access = "Allow"**

**protocol = "Icmp"**

**source\_port\_range = "\*"**

**destination\_port\_range = "\*"**

**source\_address\_prefix = "\*"**

**destination\_address\_prefix = "\*"**

**}**

**# Add SSH rule**

**security\_rule {**

**name = "allow-inbound-ssh"**

**priority = 110 # Ensure this is unique and not conflicting with other priorities**

**direction = "Inbound"**

**access = "Allow"**

**protocol = "Tcp" # SSH uses TCP**

**source\_port\_range = "\*"**

**destination\_port\_range = "22" # Default SSH port**

**source\_address\_prefix = "\*"**

**destination\_address\_prefix = "\*"**

**}**

**security\_rule {**

**name = "allow-inbound-rdp"**

**priority = 120 # Ensure this is unique and not conflicting with other priorities**

**direction = "Inbound"**

**access = "Allow"**

**protocol = "Tcp" # RDP uses TCP**

**source\_port\_range = "\*"**

**destination\_port\_range = "3389" # Default RDP port**

**source\_address\_prefix = "\*" # Allow any IP to access**

**destination\_address\_prefix = "\*"**

**}**

**}**

**# Associate NSG with Network Interface of VMs**

**resource "azurerm\_network\_interface\_security\_group\_association" "vm\_nic\_nsg\_association" {**

**count = 3 # Assuming 3 VMs as per your setup**

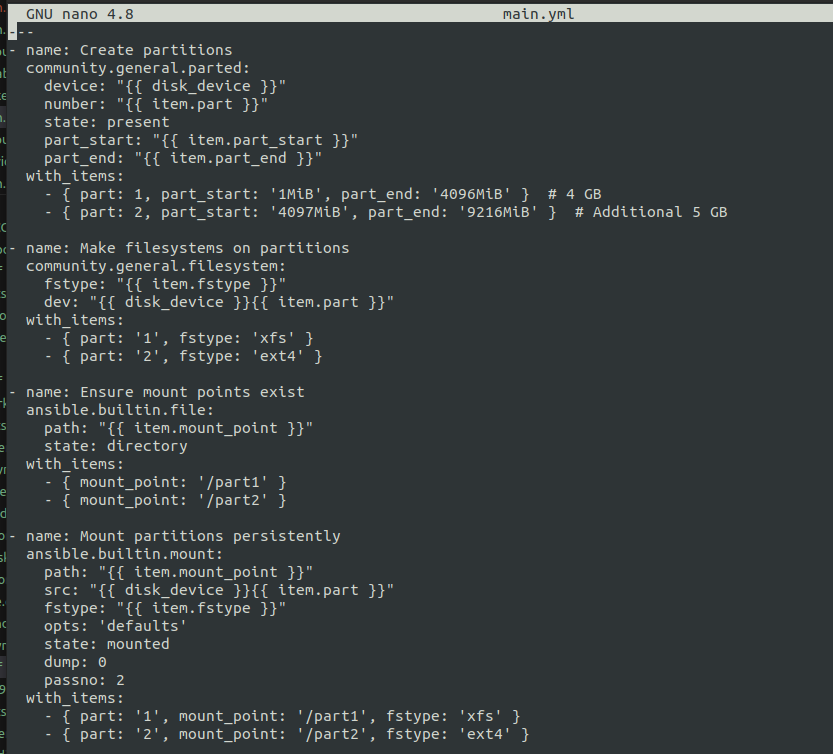
**network\_interface\_id = azurerm\_network\_interface.vm\_nic[count.index].id**

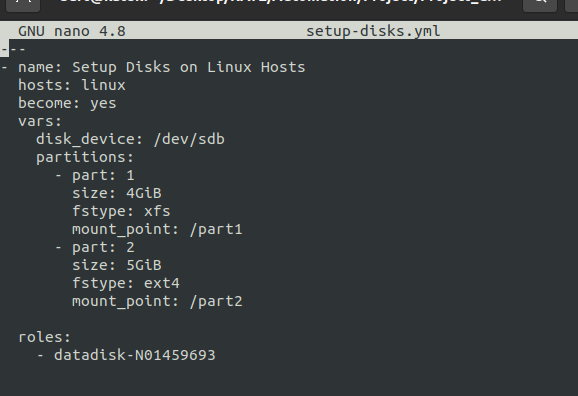
**network\_security\_group\_id = azurerm\_network\_security\_group.allow\_icmp.id**

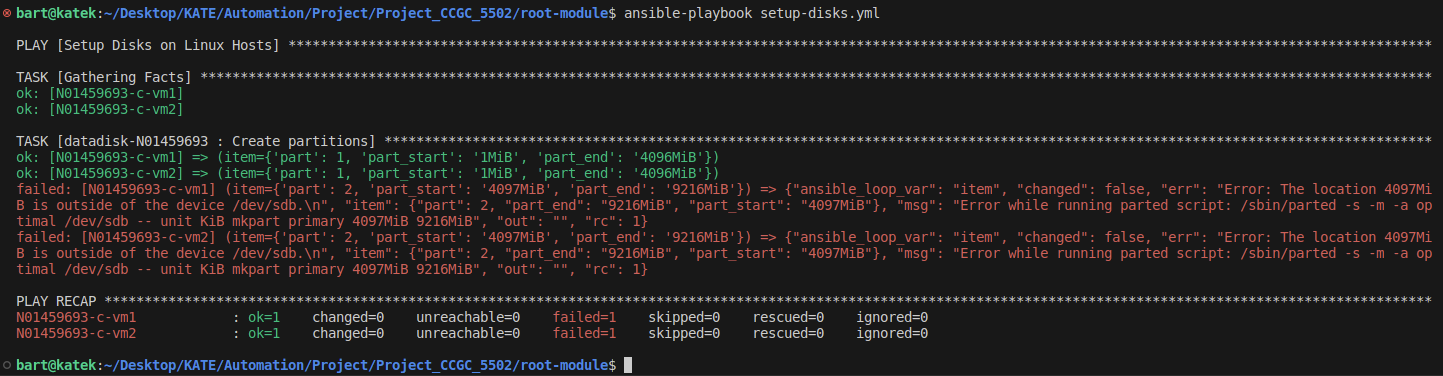
**}**

**Phase I – Development**

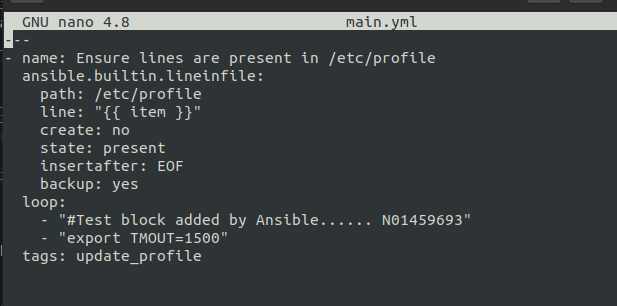
**Develop a Role for Disk Configuration:**

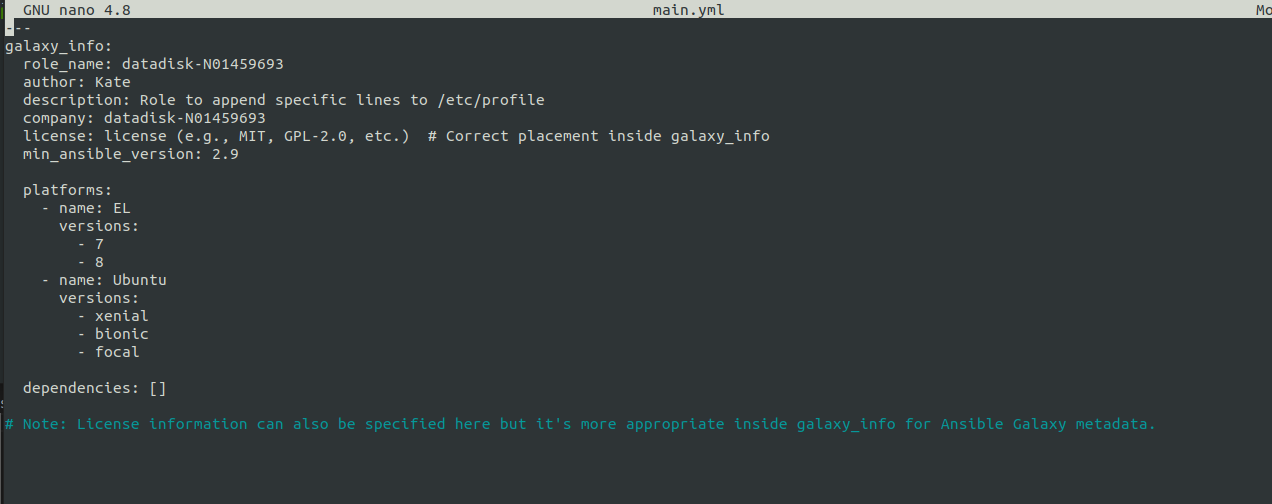
****

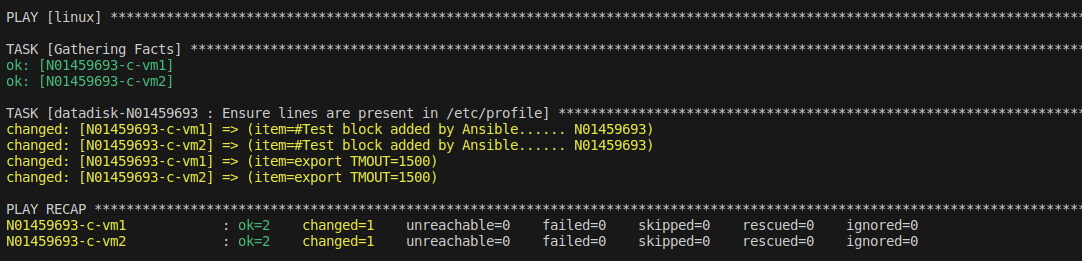
****

**I was not able to create the second partition.**

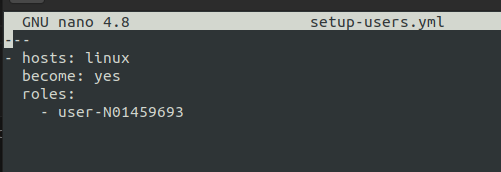
**Develop a Role for File Update:**

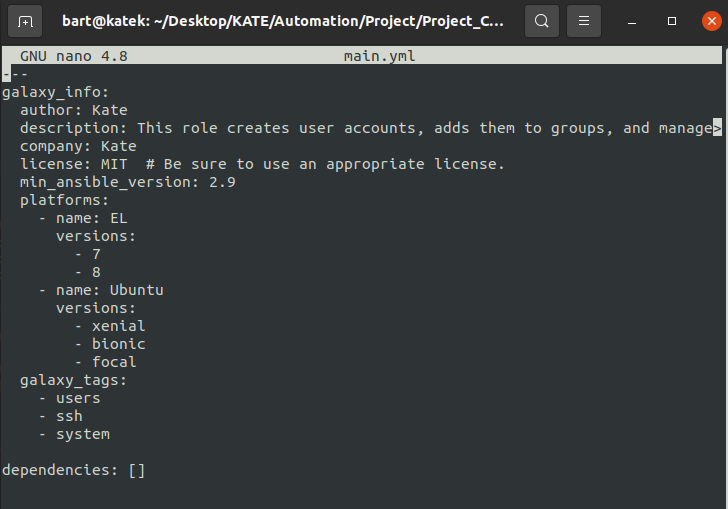
****

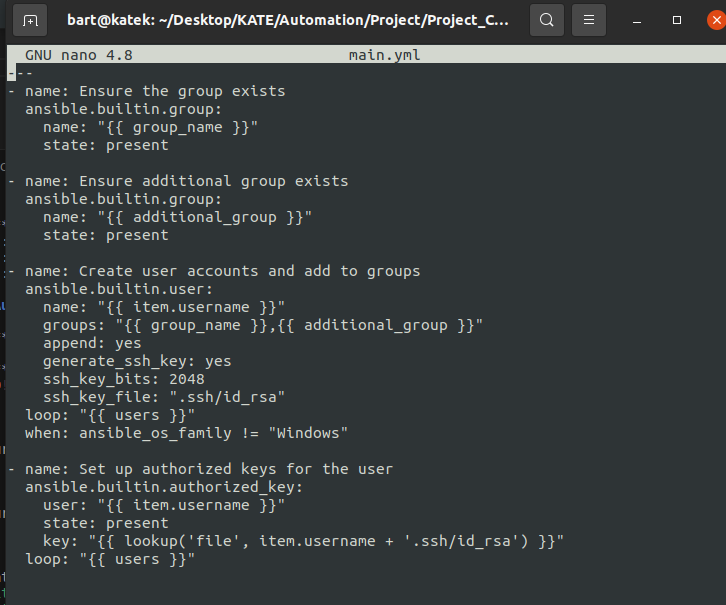
****

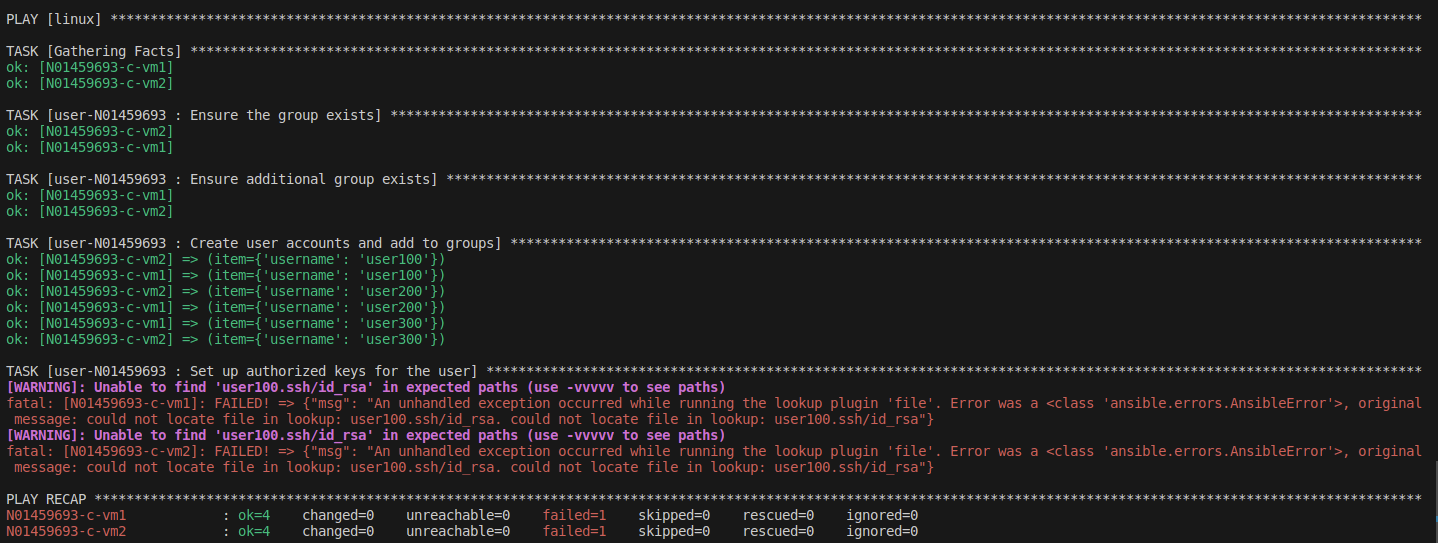
**dd**

**Develop a Role for User/Group Creation:**

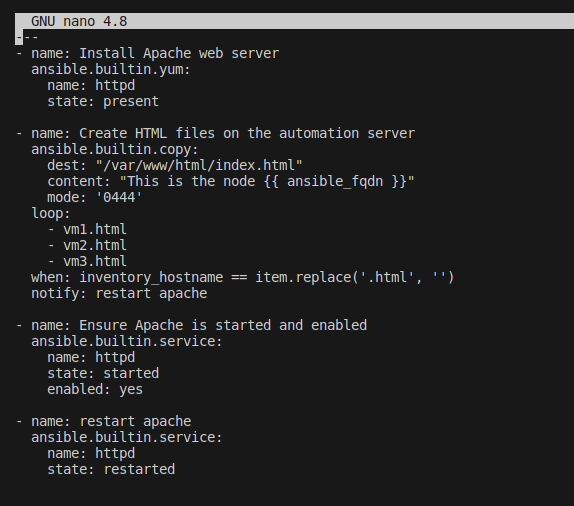
****

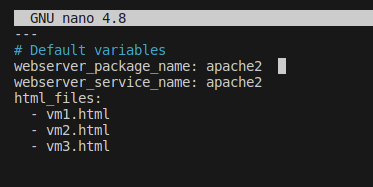
****

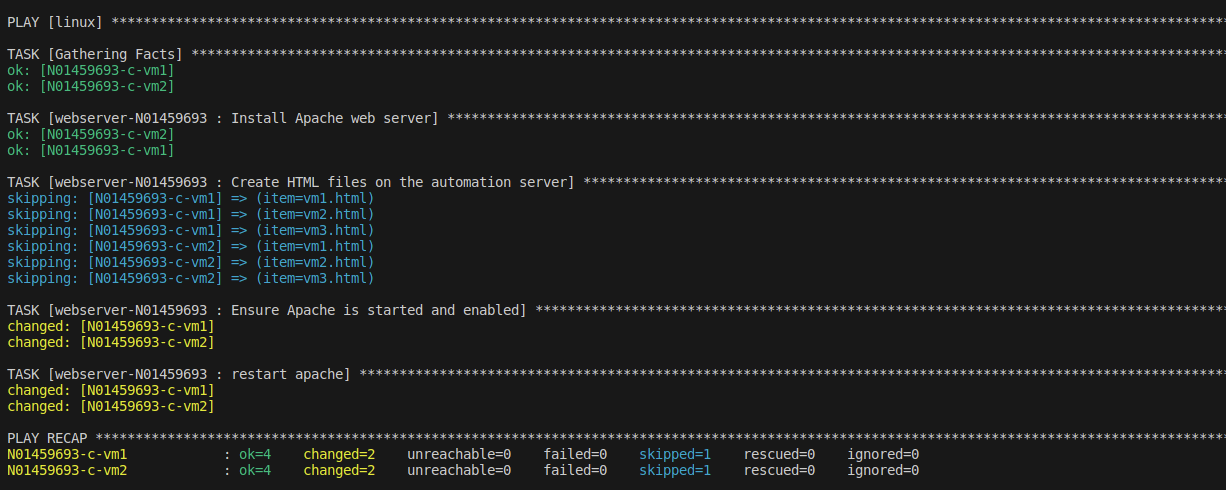
****

**kl**

**Develop a Role to Configure a Load-Balanced Website:**

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