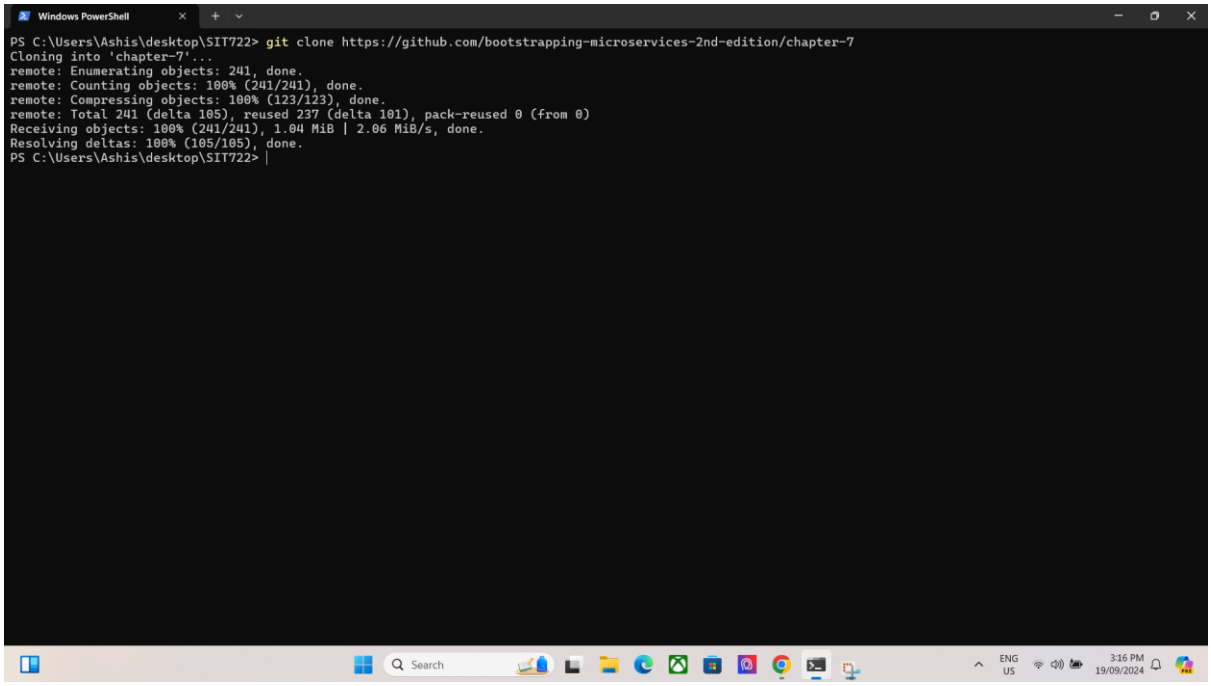
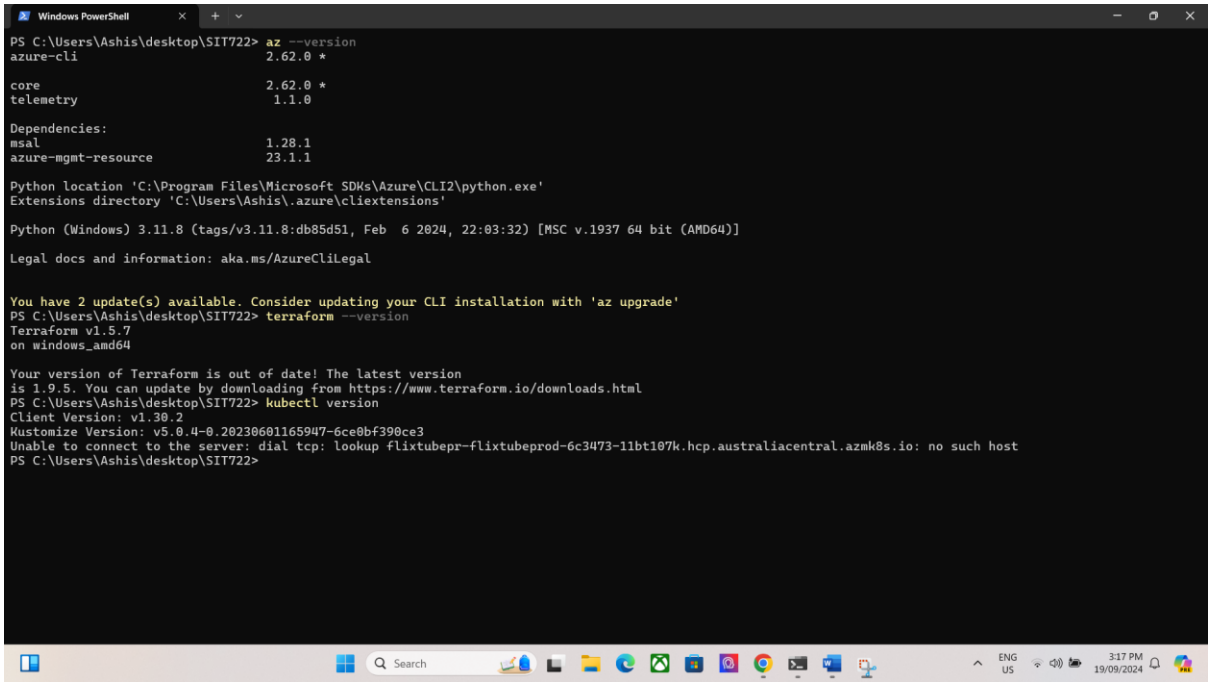
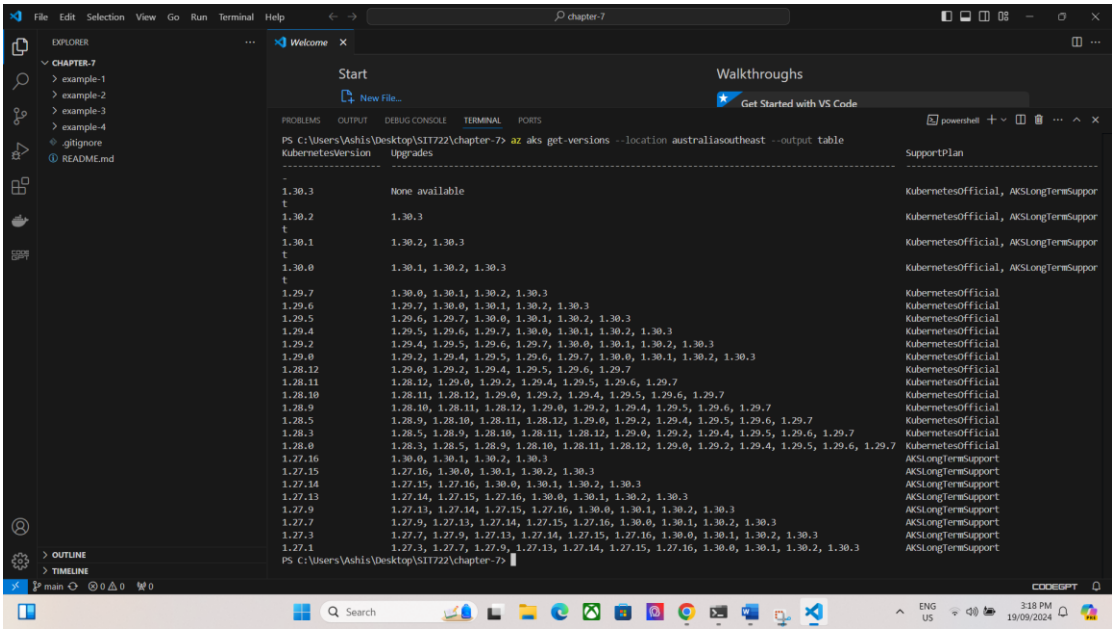
1. Git clone chapter-7



2. Az –version , terraform –version and kubectl --version

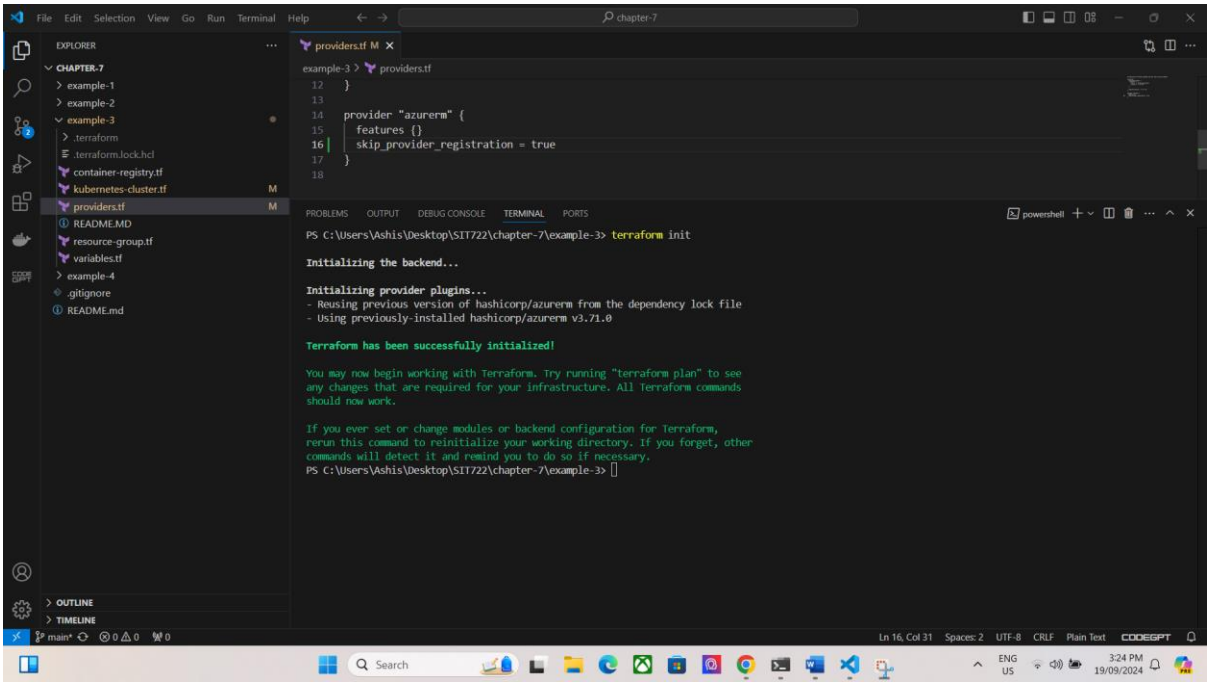


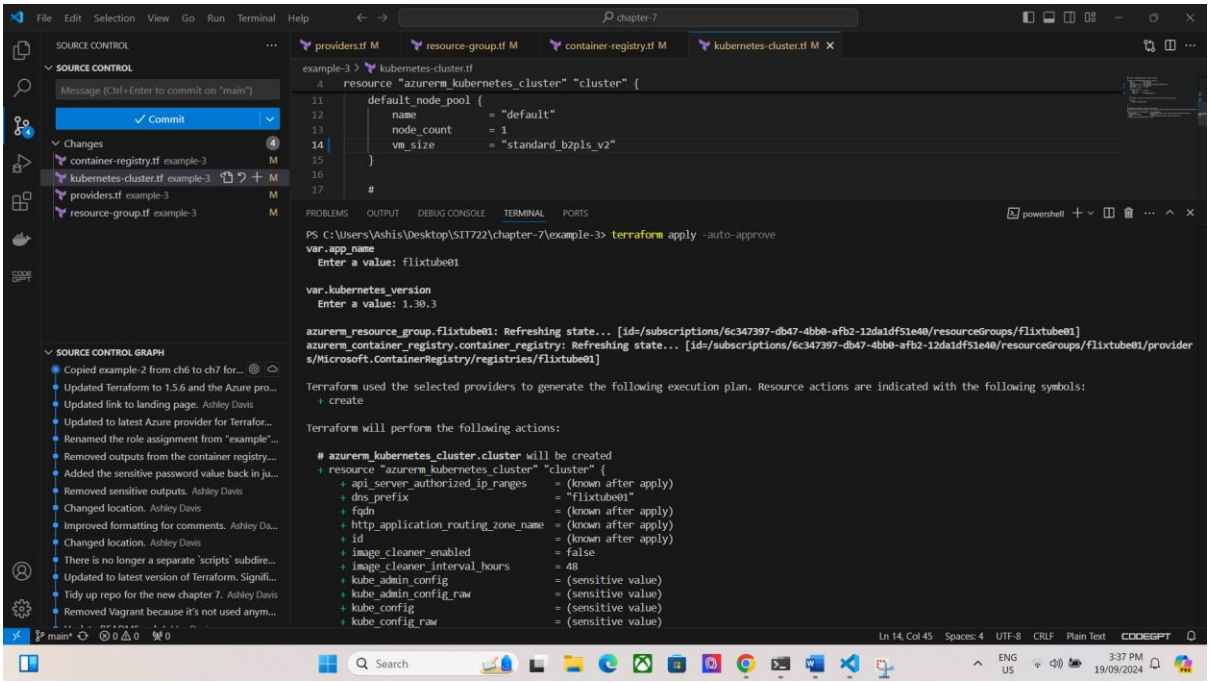
3. Get Kubernetes version by region

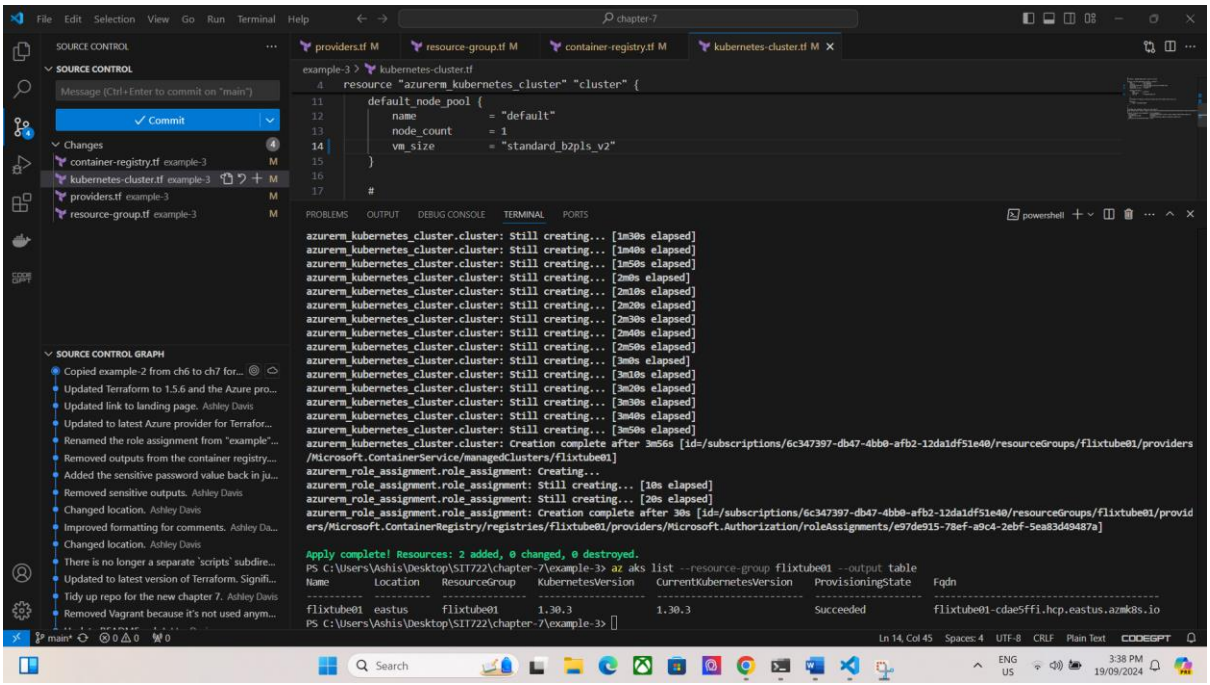


```
PS C:\Users\Ashis\Desktop\SIT722\chapter-7> az aks get-versions --location australiasoutheast --output table
KubernetesVersion    Upgrades                                                
```

5. Terraform commands




File Edit Selection View Go Run Terminal Help
chapter-7
providers.tf M
resource-group.tf M
container-registry.tf M
kubernetes-cluster.tf M
SOURCE CONTROL
Message (Ctrl+Enter to commit on "main")
Commit
Changes
container-registry.tf example-3 M
kubernetes-cluster.tf example-3 M
providers.tf example-3 M
resource-group.tf example-3 M
SOURCE CONTROL GRAPH
Copied example-2 from ch6 to ch7 for...
Updated Terraform to 1.5.6 and the Azure pro...
Updated link to landing page. Ashley Davis
Updated to latest Azure provider for Terrafor...
Renamed the role assignment from "example"...
Removed outputs from the container registry....
Added the sensitive password value back in ju...
Removed sensitive outputs. Ashley Davis
Changed location. Ashley Davis
Improved formatting for comments. Ashley Da...
Changed location. Ashley Davis
There is no longer a separate `scripts` subdire...
Updated to latest version of Terraform. Signifi...
Tidy up repo for the new chapter 7. Ashley Davis
Removed Vagrant because it's not used anym...
example-3 > kubernetes-cluster.tf
resource "azurerm_kubernetes_cluster" "cluster" {
default_node_pool {
name = "default"
node_count = 1
vm_size = "standard_b2pls_v2"
}
#
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
powershell
PS C:\Users\Ashis\Desktop\SIT722\chapter-7\example-3> terraform apply -auto-approve
var.app_name
Enter a value: flixtube01
var.kubernetes_version
Enter a value: 1.30.3
azurerm_resource_group.flixtube01: Refreshing state... [id=/subscriptions/6c347397-db47-4bb0-afb2-12da1df51e40/resourceGroups/flixtube01]
azurerm_container_registry.container_registry: Refreshing state... [id=/subscriptions/6c347397-db47-4bb0-afb2-12da1df51e40/resourceGroups/flixtube01/providers/Microsoft.ContainerRegistry/registries/flixtube01]
Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create
Terraform will perform the following actions:
# azurerm_kubernetes_cluster.cluster will be created
+ resource "azurerm_kubernetes_cluster" "cluster" {
+ api_server_authorized_ip_ranges = (known after apply)
+ dns_prefix = "flixtube01"
+ fqdn = (known after apply)
+ http_application_routing_zone_name = (known after apply)
+ id = (known after apply)
+ image_cleaner_enabled = false
+ image_cleaner_interval_hours = 48
+ kube_admin_config = (sensitive value)
+ kube_admin_config_raw = (sensitive value)
+ kube_config = (sensitive value)
+ kube_config_raw = (sensitive value)
Ln 14, Col 45 Spaces: 4 UTF-8 CRLF Plain Text CODEGPT
Search
ENG US
3:37 PM 19/09/2024


File Edit Selection View Go Run Terminal Help
chapter-7
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resource-group.tf M
container-registry.tf M
kubernetes-cluster.tf M
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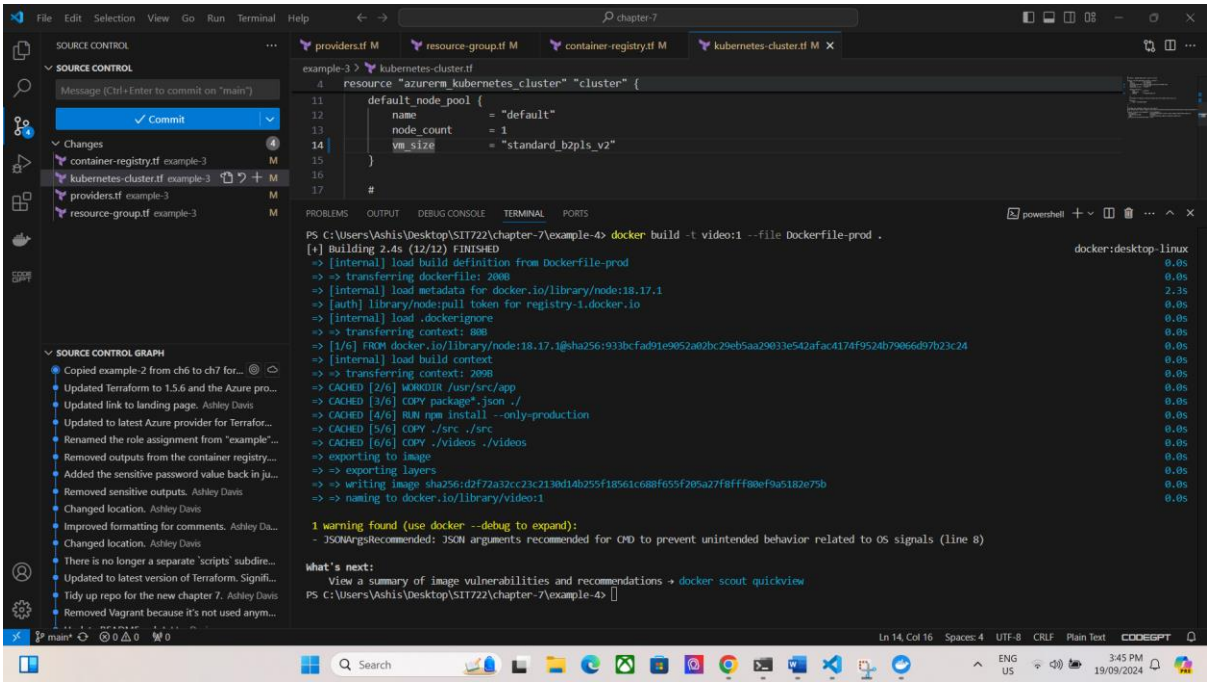
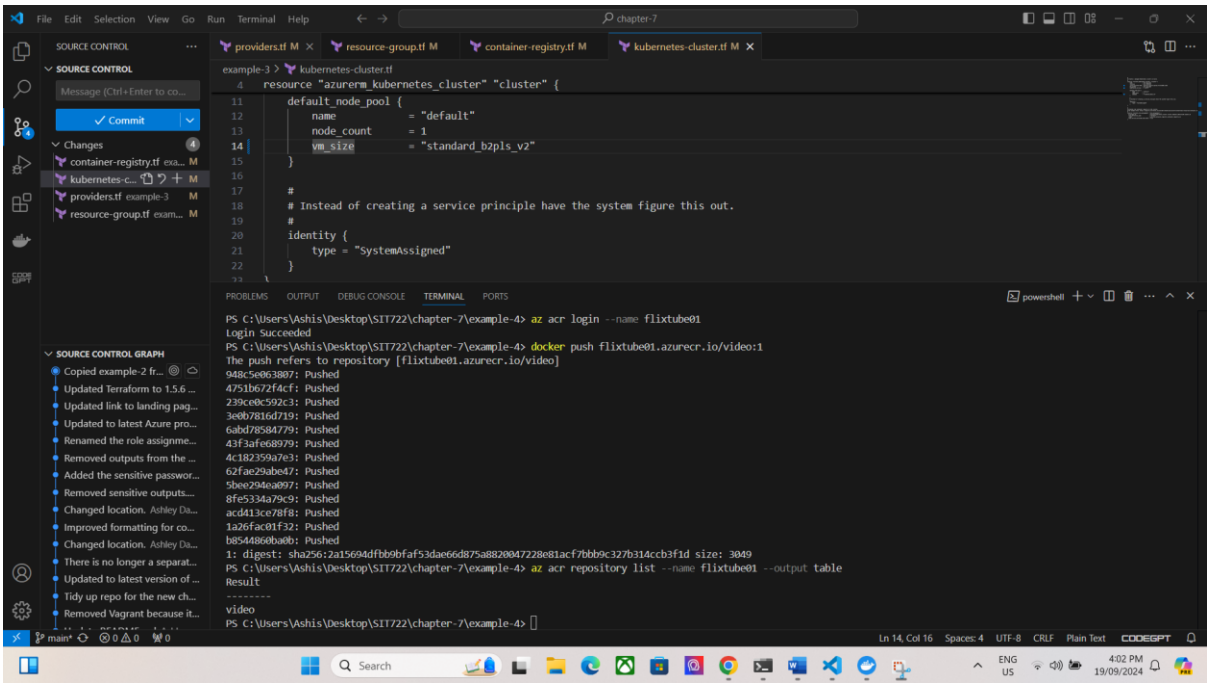
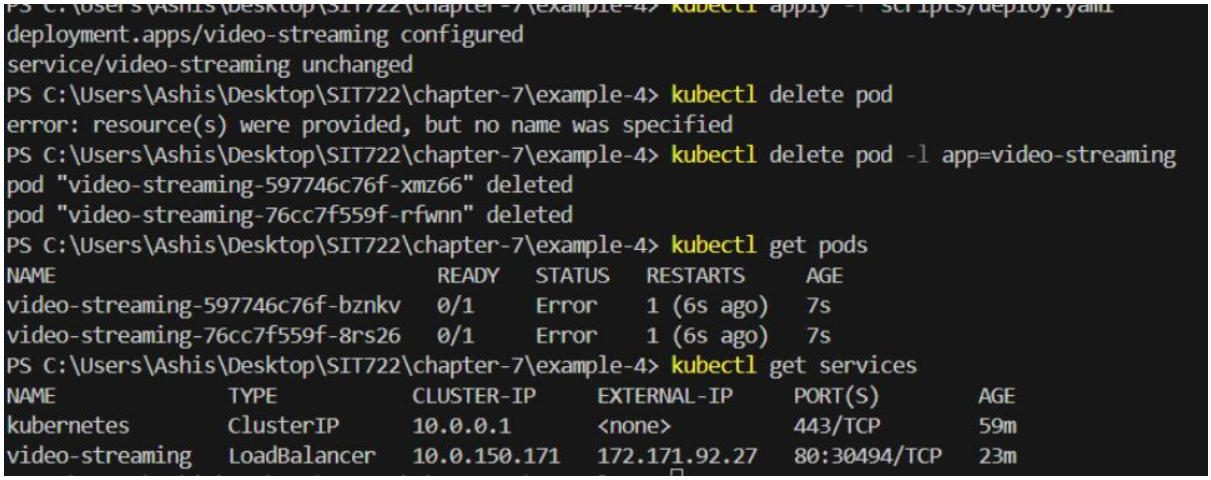
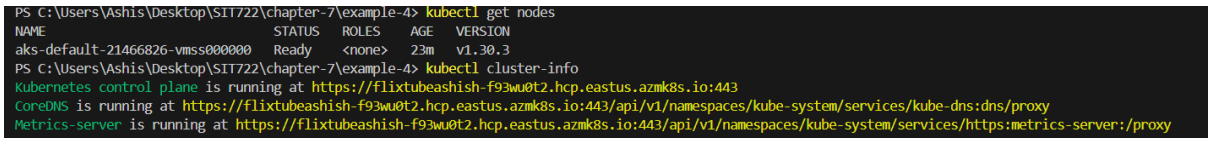
resource "azurerm_kubernetes_cluster" "cluster" {
default_node_pool {
name = "default"
node_count = 1
vm_size = "standard_b2pls_v2"
}
#
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
powershell
azurerm_kubernetes_cluster.cluster: Still creating... [1m30s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [1m40s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [1m50s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [2m0s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [2m10s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [2m20s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [2m30s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [2m40s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [2m50s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [3m0s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [3m10s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [3m20s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [3m30s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [3m40s elapsed]
azurerm_kubernetes_cluster.cluster: Still creating... [3m50s elapsed]
azurerm_kubernetes_cluster.cluster: Creation complete after 3m56s [id=/subscriptions/6c347397-db47-4bb0-afb2-12da1df51e40/resourceGroups/flixtube01/providers/Microsoft.ContainerService/managedClusters/flixtube01]
azurerm_role_assignment.role_assignment: Creating...
azurerm_role_assignment.role_assignment: Still creating... [10s elapsed]
azurerm_role_assignment.role_assignment: Still creating... [20s elapsed]
azurerm_role_assignment.role_assignment: Creation complete after 30s [id=/subscriptions/6c347397-db47-4bb0-afb2-12da1df51e40/resourceGroups/flixtube01/providers/Microsoft.ContainerRegistry/registries/flixtube01/providers/Microsoft.Authorization/roleAssignments/e97de915-78ef-a9c4-2ebf-5ea83d49487a]
Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
PS C:\Users\Ashis\Desktop\SIT722\chapter-7\example-3> az aks list --resource-group flixtube01 --output table
Name Location ResourceGroup KubernetesVersion CurrentKubernetesVersion ProvisioningState Fqdn
flixtube01 eastus flixtube01 1.30.3 1.30.3 Succeeded flixtube01-cdae5ffi.hcp.eastus.azmk8s.io
PS C:\Users\Ashis\Desktop\SIT722\chapter-7\example-3>
Ln 14, Col 45 Spaces: 4 UTF-8 CRLF Plain Text CODEGPT
Search
ENG US
3:38 PM 19/09/2024

6. Docker push









Describe in your own words what are the four example applications(stages) each demonstrating?

Example 1:- This example demonstrates how to deploy a simple application in Kubernetes. It introduces the basic concepts of creating a Kubernetes deployment running a containerized application and exposing it using a service to make it accessible.

Example 2:- This example showcases how to use Terraform to automate the creation of an Azure Container Registry. The registry can then be used to store Docker images which can later be deployed in Kubernetes.

Example 3:- In this example, along with example 2 steps . This gets the infrastructure ready for running apps in containers.

Example 4:- This example shows how to deploy an app to the Kubernetes cluster made in Example 3. It builds the app using a Dockerfile and then uses a YAML file to deploy and manage the app in the cluster.

In this project, the latest **Kubernetes version** used was **1.30.3**.