Overview
BhuvanApps is an online training company. They currently have on-premise workloads which they want to migrate to Azure. They have offices in Mumbai and Hyderabad. They also use Microsoft Exchange Online for email.

On-premise environment

- They have a VMWare vSphere infrastructure that is used to host virtual machines
- The virtual machines themselves run Windows Server 2016
- The virtual machines are members of an Active Directory forest named bhuvanapp.com
- The Mumbai office has an IP address space of 10.0.0.0/16 and the Hyderabad office has an IP address space of 10.10.0.0/16
- The offices connect by using a VPN.
- Each office also has one Azure ExpressRoute circuit that gives access to Azure services and Microsoft Online services.
- Routing is implemented by using Microsoft Peering

Azure Environment
The Azure environment has the following infrastructure

Name	Type	Azure region
bhuvanappvault1	Azure Site Recovery vault	East US
bhuvanappvault2	Azure Site Recovery vault	West US
bhuvanappgateway1	Azure Application Gateway (internal)	East US
bhuvanappgateway2	Azure Application Gateway (Internet-facing)	West US
bhuvanapproute1	ExpressRoute circuit	East US
bhuvanapproute2	ExpressRoute circuit	West US

- The bhuvanappgateway1 has two backend pools named bhuvanapppool1 and bhuvanapppool2.
- The bhuvanappgateway2 has two backend pools named bhuvanapppool3 and bhuvanapppool4.
- The company plans to migrate the virtual machines from the Mumbai office to the East US region by using Azure Site Recovery

Requirements

- A new web application named bhuvanappapp1 needs to be deployed. This web application will process all course purchases. Inbound and Outbound communications to this application must be controlled via Network Security Groups.
- A storage account named bhuvanappappstore would be created. This storage account only needs to be accessed from the virtual network hosting the virtual machines.
- A Kubernetes cluster would also need to be deployed which would be used to deploy new container-based applications. The Kubernetes cluster would need to have monitoring enabled.
- The Azure application gateways must load balance traffic in the following manner
  - Traffic to http://bhuvanapps.com/video/* needs to be load balanced across the bhuvanapppool1 pool
  - Traffic to http://bhuvanapps.com/images/* needs to be load balanced across the bhuvanapppool2 pool
  - Traffic to http://course-bhuvanapp.com needs to be load balanced across the bhuvanapppool3 pool
  - Traffic to http://quiz-bhuvanapp.com needs to be load balanced across the bhuvanapppool4 pool