# 3 Tier Environment in Azure

* **Web tier.** Handles incoming HTTP requests. Responses are returned through this tier.
* **Business tier.** Implements business processes and other functional logic for the system.
* **Data tier.** Provides persistent data storage.

1. **Create Resource group:**

az group create --name RG1 --location westus

1. **Create Virtual network with subnet**

az network vnet create \

--name VNet1 \

--resource-group RG1 \

--subnet-name subnet1 \

--ddos-protection-plan myDDoSPlan \

--ddos-protection true

**3. Create virtual machine**

az vm create \

--resource-group RG1 \

--name frontvm \

--image Win2022AzureEditionCore \

--public-ip-sku Standard \

--admin-username azureuser

**4. Create nsg and associate with subnet**

az network nsg create --resource-group RG1 --name myNSG1

az network vnet subnet update --resource-group RG1 --vnet-name myVNet --name mySubnet --network-security-group myNSG1

* 1. **Add security rule in NSG**

az network nsg rule create --resource-group RG1 --nsg-name myNSG1 --name RDP-rule --priority 300 \

--destination-address-prefixes '\*' --destination-port-ranges 3389 --protocol Tcp --description "Allow RDP"

**6. Create Frontdoor**

az group create --name myRGFD --location centralus

* 1. Create Azure Frontdoor Profile

az afd profile create \

--profile-name contosoafd \

--resource-group myRGFD \

--sku Premium\_AzureFrontDoor

**Create App Service Plan:**

az appservice plan create \

--name myAppServicePlanCentralUS \

--resource-group myRGFD \

--location centralus

az appservice plan create \

--name myAppServicePlanEastUS \

--resource-group myRGFD \

--location eastus

**7. Create two instances of a web app**

az webapp create \

--name WebAppContoso-01 \

--resource-group myRGFD \

--plan myAppServicePlanCentralUS

az webapp create \

--name WebAppContoso-02 \

--resource-group myRGFD \

--plan myAppServicePlanEastUS

**8.Add an endpoint**

az afd endpoint create \

--resource-group myRGFD \

--endpoint-name contosofrontend \

--profile-name contosoafd \

--enabled-state Enabled

**9. Create an origin group**

az afd origin-group create \

--resource-group myRGFD \

--origin-group-name og \

--profile-name contosoafd \

--probe-request-type GET \

--probe-protocol Http \

--probe-interval-in-seconds 60 \

--probe-path / \

--sample-size 4 \

--successful-samples-required 3 \

--additional-latency-in-milliseconds 50

Add an origin group to endpoint 1

az afd origin create \

--resource-group myRGFD \

--host-name webappcontoso-01.azurewebsites.net \

--profile-name contosoafd \

--origin-group-name og \

--origin-name contoso1 \

--origin-host-header webappcontoso-01.azurewebsites.net \

--priority 1 \

--weight 1000 \

--enabled-state Enabled \

--http-port 80 \

--https-port 443

**Add second origin**

az afd origin create \

--resource-group myRGFD \

--host-name webappcontoso-02.azurewebsites.net \

--profile-name contosoafd \

--origin-group-name og \

--origin-name contoso2 \

--origin-host-header webappcontoso-02.azurewebsites.net \

--priority 1 \

--weight 1000 \

--enabled-state Enabled \

--http-port 80 \

--https-port 443

**9. Add route**

az afd route create \

--resource-group myRGFD \

--profile-name contosoafd \

--endpoint-name contosofrontend \

--forwarding-protocol MatchRequest \

--route-name route \

--https-redirect Enabled \

--origin-group og \

--supported-protocols Http Https \

--link-to-default-domain Enabled

**10. Create a WAF policy**

az network front-door waf-policy create \

--name contosoWAF \

--resource-group myRGFD \

--sku Premium\_AzureFrontDoor \

--disabled false \

--mode Prevention

**11. Assign manage rule to WAF policy**

az network front-door waf-policy managed-rules add \

--policy-name contosoWAF \

--resource-group myRGFD \

--type Microsoft\_DefaultRuleSet \

--version 1.2

az network front-door waf-policy managed-rules add \

--policy-name contosoWAF \

--resource-group myRGFD \

--type Microsoft\_BotManagerRuleSet \

--version 1.0

**11. Create Security policy**

az afd security-policy create \

--resource-group myRGFD \

--profile-name contosoafd \

--security-policy-name contososecurity \

--domains /subscriptions/mysubscription/resourcegroups/myRGFD/providers/Microsoft.Cdn/profiles/contosoafd/afdEndpoints/contosofrontend \

--waf-policy /subscriptions/mysubscription/resourcegroups/myRGFD/providers/Microsoft.Network/frontdoorwebapplicationfirewallpolicies/contosoWAF

**Now we can Access our frontdoor Urls.**