Design the load balancing architecture for Tyrell Crop in the East US region. Here are the steps to achieve this:

**Step 1: Configure Traffic Manager**

Login to Azure Portal:

Go to the Azure Portal.

Create a Resource Group:

Resource group name: TyrellCropRG

Resource group location: East US

**Create a Traffic Manager Profile:**

Name: TyrellCrop

Routing method: Performance

Resource group: TyrellCropRG

Resource group Location: East US

DNS TTL: Set to 30 seconds for easier failover validation.

**Step 2: Provision Application Gateways**

**Create Virtual Network:**

Name: TyrellCropVNet-USE

Address space: 10.20.0.0/16

Subnet Name: Frontend

Subnet address range: 10.20.0.0/24

**Create Public IP Address:**

Name: TyrellCropAG-USE-IP

IP Address Type: Public

DNS Name: TyrellCrop

**Create Application Gateway:**

Name: TyrellCropAG-USE

Resource Group: TyrellCropRG

Virtual Network: TyrellCropVNet-USE

Subnet: Frontend

Public IP Address: TyrellCropAG-USE-IP

**Configure Backend Pools:**

**Create two backend pools**:

Images Pool: For URLs matching /images/\*

Web Pages Pool: For other content

**Configure Listeners and Rules:**

**Listener for Images:**

Name: AGImageListener

Frontend Port: 8080

**Listener for Web Pages:**

Name: AGWebListener

Frontend Port: 80

**Routing Rules**:

Rule for Images: Direct traffic matching /images/\* to the Images Pool.

Rule for Web Pages: Direct other traffic to the Web Pages Pool.

**Step 3: Add Application Gateways to Traffic Manager**

**Add Endpoints to Traffic Manager:**

Endpoint Type: Azure Endpoint

Target Resource Type: Public IP Address

Target Resource: TyrellCropAG-USE-IP

Endpoint Name: EastUS-Endpoint

**Step 4: Create VM for images and web page, add it to the backend Pool**

**Create VM for web:**

Resource group: TyrellCropRG

Virtual machine name: TYrellVM01

Region: east us

Availability options: Availability set ->TyrellApp-AS

Image: Windows Server 2016 Datacenter-Gen 2

Size: Standard DS1 v2

Username: sysadmin

Password: Wow01qwerty!

Public inbound ports: Allow Selected Ports

Selected Inbound ports:http,rdp

Already have a Windows license? No

OS disk type: Standard HDD

Virtual network: TyrellCropVNet-USE

Subnet name: AppEnd

Public IP: TYrellVM01-ip

NIC Network security group: Basic

Public inbound ports: Allow Selected Ports

Selected Inbound ports:http,rdp

Accelerated networking: Off

Load balancing: No

**Create VM for image:**

Resource group: TyrellCropRG

Virtual machine name: TYrellimageVM-01

Region: east us

Availability options: Availability set ->TyrellApp-AS

Image: Windows Server 2016 Datacenter-Gen 2

Size: Standard DS1 v2

Username: sysadmin

Password: Wow01qwerty!

Public inbound ports: Allow Selected Ports

Selected Inbound ports:http,rdp

Already have a Windows license? No

OS disk type: Standard HDD

Virtual network: TyrellCropVNet-USE

Subnet name: imageEnd

Public IP: TYrellimageVM01-ip

NIC Network security group: Basic

Public inbound ports: Allow Selected Ports

Selected Inbound ports:http,rdp

Accelerated networking: Off

Load balancing: No

**Add the VM’s to the Backend Pools:**

Add Image VM (TYrellimageVM-01) to the Image Backend Pool

Add Web VM (TYrellVM01) to the Web Backend Pool

**Step 5: Validate and Test**

**Validate Configuration:**

Ensure that the Traffic Manager profile is correctly routing traffic to the appropriate Application Gateways based on the user’s location.

This setup ensures that users are served from the closest location with the lowest latency, and the dedicated pools for images and web pages help in efficient content delivery.