

# Windows Image Creation Using Packer on Microsoft Azure

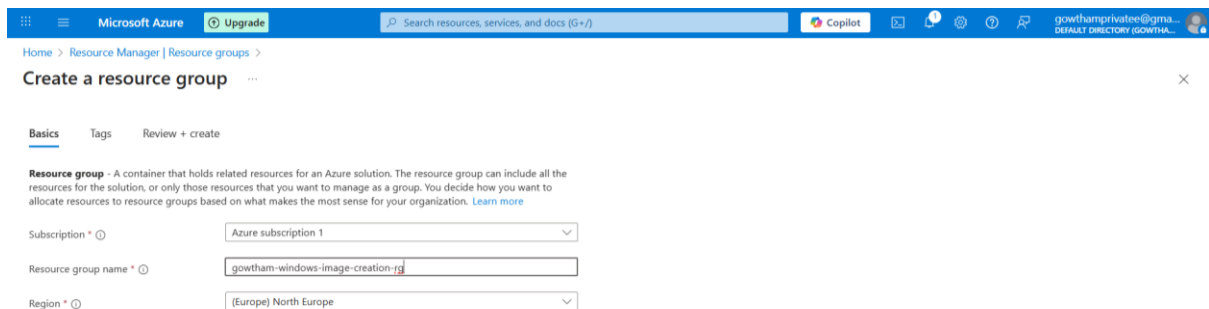
## PROJECT OVERVIEW

**Project Title:** Windows Image Creation Using Packer on Microsoft Azure

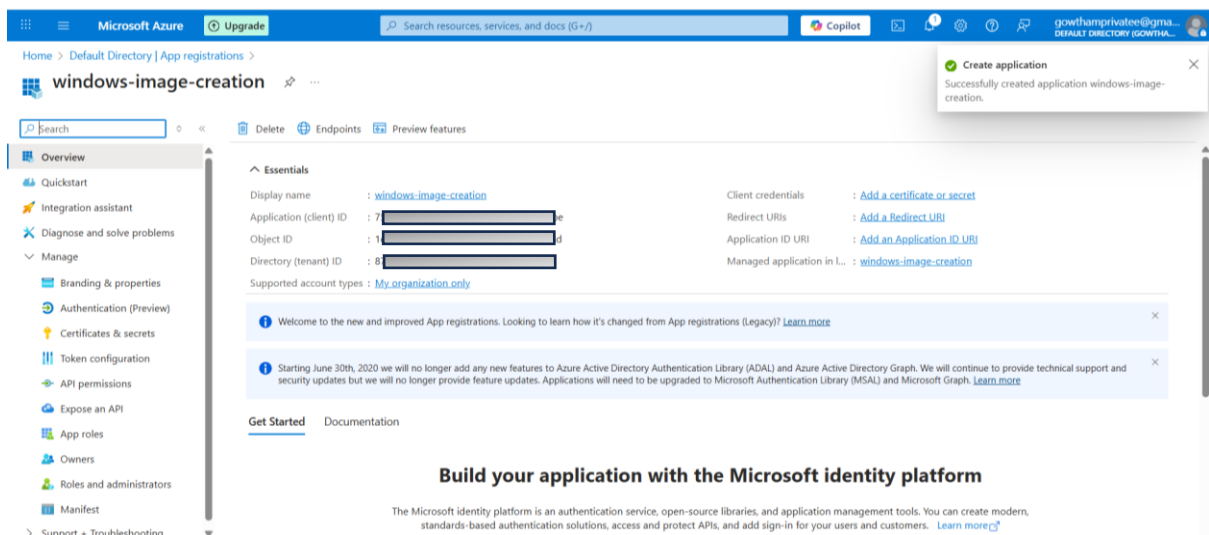
**Aim:** The aim of this project is to design and build a reusable custom Windows virtual machine image in Microsoft Azure using HashiCorp Packer. This automated image creation improves consistency, scalability, and deployment speed.

### Project Implementation Steps:

- Create an Azure Resource Group for image storage.
  - gowtham-windows-image-creation-rg

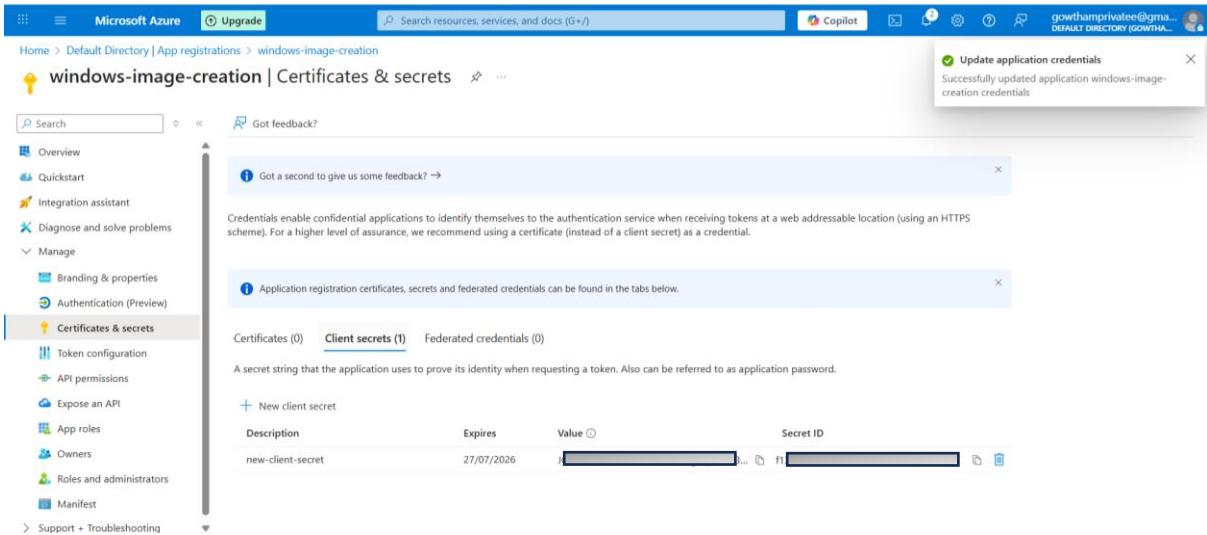


- Create an Azure Active Directory Service Principal.
  - windows-image-creation

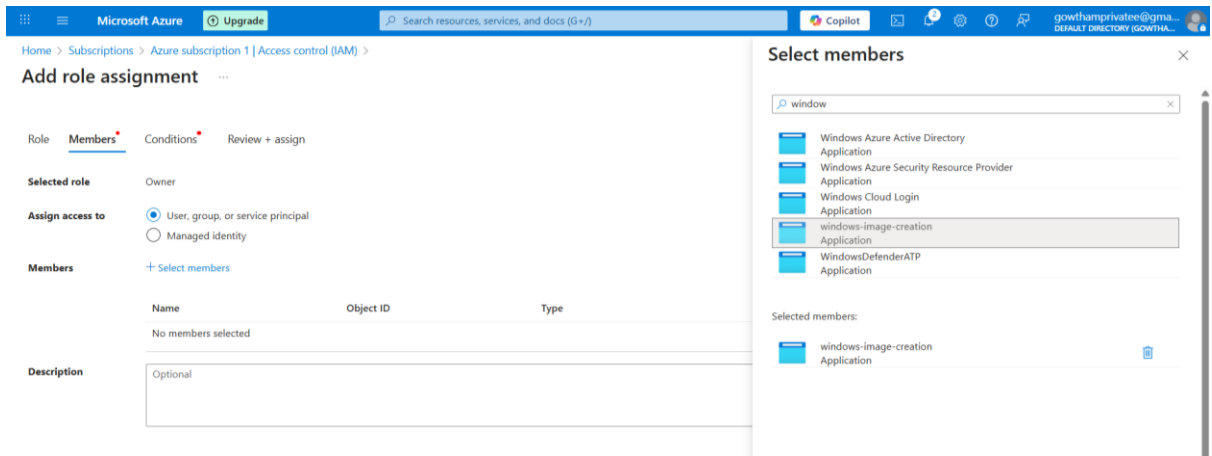
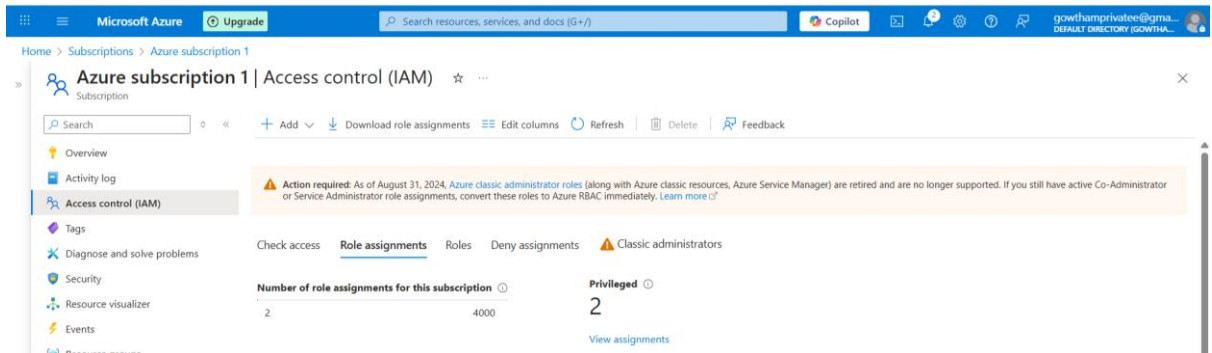


- Create new client secrets
  - new-client-secret

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- Add role assignment



- Install and configure Packer on the local system.

Name	Date modified	Type	Size
packer	09-09-2025 11:31	Application	42,199 KB
packer	21-01-2026 15:29	JSON Source File	2 KB

# Windows Image Creation Using Packer on Microsoft Azure

- Define an Azure ARM Packer template.

```
{ } packerjson M X
{ } packerjson > ...
1  [
2  "builders": [{
3    "type": "azure-arm",
4
5    "client_id": "*****",
6    "client_secret": "*****",
7    "tenant_id": "*****",
8    "subscription_id": "*****",
9
10   "managed_image_resource_group_name": "gowtham-windows-image-creation-rg",
11   "managed_image_name": "myPackerWindowsImage",
12
13   "os_type": "Windows",
14   "image_publisher": "MicrosoftWindowsServer",
15   "image_offer": "WindowsServer",
16   "image_sku": "2016-Datacenter",
17
18   "communicator": "winrm",
19   "winrm_use_ssl": true,
20   "winrm_insecure": true,
21   "winrm_timeout": "5m",
22   "winrm_username": "packer",
23
24   "azure_tags": {
25     "dept": "Engineering",
26     "task": "Image deployment"
27   },
28
29   "build_resource_group_name": "gowtham-windows-image-creation-rg",
30   "vm_size": "Standard_E2s_v3"
31 },
32 "provisioners": [{
33   "type": "powershell",
34   "inline": [
35     "Add-WindowsFeature Web-Server",
36     "while ((Get-Service RdAgent).Status -ne 'Running') { Start-Sleep -s 5 }",
37     "while ((Get-Service WindowsAzureGuestAgent).Status -ne 'Running') { Start-Sleep -s 5 }",
38     "& $env:SystemRoot\\System32\\Sysprep\\Sysprep.exe /oobe /generalize /quiet /quit",
39     "while($true) { $imageState = Get-ItemProperty HKLM:\\SOFTWARE\\Microsoft\\Windows\\CurrentVersion\\Setup\\State | Select In
40   ]
41 }}
42 ]
```

- **Image Configuration**  
OS Type: Windows  
Publisher: MicrosoftWindowsServer  
Offer: WindowsServer  
SKU: 2016-Datacenter  
VM Size: Standard\_E2s\_v3  
Build Resource Group: gowtham-windows-image-creation-rg
- **Provision the VM by Installing Required Roles (IIS)**  
Internet Information Services (IIS)  
Required web server components
- Deprovision the VM and capture it as a managed image.

## Packer Configuration Details:

- Builder Type: azure-arm
- Operating System: Windows-2016-Datacenter
- Region: North Europe

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- VM Size: Standard\_E2s\_v3
- Provisioner: Shell
- Managed Image Output: Azure Managed Image

## Execution Process:

- Run the Packer build command from PowerShell or terminal.
- Packer creates a temporary VM in Azure.
- IIS is installed automatically during provisioning.
- The VM is deprovisioned.
- The final image is saved as an Azure managed image.

```
Windows PowerShell
PS C:\Users\gowth\OneDrive\Desktop\repo\windows-image-creation-using-packer> dir

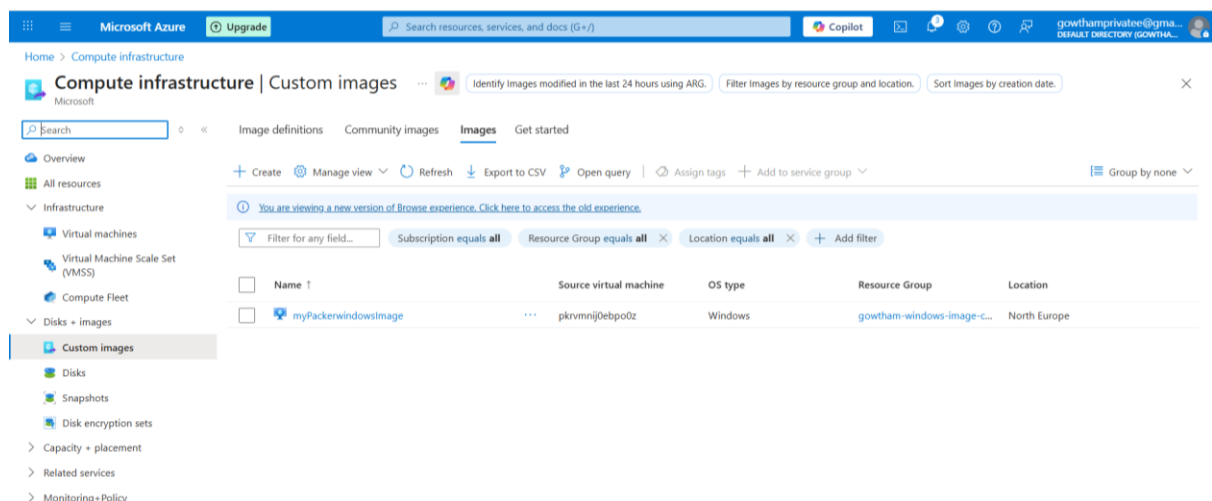
Directory: C:\Users\gowth\OneDrive\Desktop\repo\windows-image-creation-using-packer

Mode                LastWriteTime         Length Name
----                -
-a---l            09-09-2025    11:31      43211656 packer.exe
-a---l            28-01-2026    19:22         1627 packer.json

PS C:\Users\gowth\OneDrive\Desktop\repo\windows-image-creation-using-packer> packer.exe build packer.json
azure-arm: output will be in this color.

==> azure-arm: Running builder ...
==> azure-arm: Creating Azure Resource Manager (ARM) client ...
==> azure-arm: ARM Client successfully created
==> azure-arm: Getting source image id for the deployment ...
==> azure-arm: -> SourceImageName: '/subscriptions/[redacted];Microsoft.Compute/locations/northeurope/publishers/MicrosoftWindowsServer/ArtifactTypes/vmimage/offers/WindowsServer/skus/2016-Datacenter/versions/latest'
==> azure-arm: Using existing resource group ...
==> azure-arm: -> ResourceGroupName : 'gowtham-windows-image-creation-rg'
==> azure-arm: -> Location          : 'northeurope'
==> azure-arm: Validating deployment template ...
==> azure-arm: -> ResourceGroupName : 'gowtham-windows-image-creation-rg'
==> azure-arm: -> DeploymentName   : 'kvpkrdpnij0ebpo0z'
==> azure-arm: Deploying deployment template ...
==> azure-arm: -> ResourceGroupName : 'gowtham-windows-image-creation-rg'
```

- The custom Windows image **mypackerwindowsimage** was successfully created and is now available for deploying new virtual machines



# Windows Image Creation Using Packer on Microsoft Azure

## **Security Considerations:**

Service principal credentials must be kept secure. If a secret is exposed, it should be rotated immediately. Using Managed Identity is recommended to avoid storing secrets in configuration files.

## **Conclusion:**

This project successfully demonstrates automated Windows image creation in Azure using Packer. The generated custom image with IIS pre-installed ensures consistency, reduces manual configuration effort, and accelerates virtual machine deployments in the cloud.