

AZ-104 – Hands-On Practical Lab Guide

Lab 1 – Identity and RBAC

Steps:

1. Create an Azure AD user.
2. Create a security group and add the user.
3. Create a resource group.
4. Assign Contributor role to the group at resource group scope.
5. Login as the user and verify access.

CLI Commands:

```
az ad user create  
az group create  
az role assignment create
```

Lab 2 – App Registration and Service Principal

1. Create an App Registration.
2. Generate client secret.
3. Assign Reader role to a resource group.
4. Authenticate using service principal via CLI.

Commands:

```
az ad app create  
az ad sp create  
az login --service-principal
```

Lab 3 – Virtual Network and NSG

1. Create a VNet with two subnets.
2. Create NSG with inbound RDP rule.
3. Associate NSG to subnet.
4. Deploy a VM inside subnet and test access.

Commands:

```
az network vnet create  
az network nsg create
```

Lab 4 – VM Deployment

1. Create a Windows VM.
2. Add data disk.
3. Enable boot diagnostics.
4. Resize the VM.
5. Create snapshot and image.

Commands:

```
az vm create  
az vm disk attach  
az snapshot create
```

Lab 5 – Storage Account

1. Create storage account.
2. Create blob container.
3. Upload file using AzCopy.
4. Generate SAS token.
5. Configure lifecycle management.

Commands:

```
az storage account create  
az storage blob upload
```

Lab 6 – Private Endpoint

1. Create storage account.
2. Create private endpoint in VNet.
3. Configure private DNS zone.
4. Test access from VM using private IP.

Lab 7 – Monitoring and Alerts

1. Create Log Analytics workspace.
2. Enable diagnostics for a VM.
3. Create metric alert.
4. Create action group.
5. Trigger alert and verify email.

Lab 8 – Backup and Restore

1. Create Recovery Services Vault.
2. Enable VM backup.
3. Perform on-demand backup.
4. Restore VM to new resource group.

Lab 9 – VNet Peering

1. Create two VNets.
2. Peer them.
3. Deploy VMs in both.
4. Test connectivity using private IPs.

Lab 10 – App Service

1. Create App Service Plan.
2. Deploy a sample web app.
3. Create staging slot.
4. Swap slots.
5. Configure autoscale.

Lab 11 – Azure Policy

1. Assign policy to restrict resource locations.
2. Try to deploy resource in blocked region.
3. Review compliance results.

Lab 12 – Automation

1. Create ARM template deployment.
2. Deploy resources using Bicep.
3. Create Automation Account.
4. Run a sample PowerShell runbook.

Lab 13 – Security

1. Create Key Vault.
2. Store secret.
3. Access Key Vault using Managed Identity from VM.
4. Enable Defender for Cloud recommendations.

Lab 14 – Network Troubleshooting

1. Use Network Watcher IP Flow Verify.
2. Capture packets.
3. Check NSG flow logs.
4. Diagnose connectivity issues.

Lab 15 – Site Recovery

1. Configure Azure Site Recovery.
2. Replicate a VM to another region.
3. Perform test failover.
4. Perform planned failover and failback.