

**SOP for Migrating VMware VMs to Azure using Azure Migrate**



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**Objective:**

To migrate CentOS, Ubuntu, and Windows servers from an on-premises VMware environment to **Microsoft Azure** using Azure Migrate.

**Prerequisites:**

1. An active Azure account.

2. Administrator access to the VMware vSphere environment.

3. Network connectivity between the on-premises VMware environment and Azure.

4. Azure CLI installed and configured on your local machine.

**Step 1: Preparation**

**1.1 Inventory and Assessment:**

- Task: Document the details of each VM including operating system, applications, and dependencies.

- Tools: Spreadsheet or inventory management tool.

- Outcome: A comprehensive list of VMs to migrate.

**1.2 Backup Data:**

- Task: Ensure all VMs and data are backed up.

- Tools: Existing backup solution.

- Outcome: Verified backups for all VMs.

**1.3 Azure Account and Environment Setup:**

- Task: Create necessary Azure resources (VNet, subnets, Network Security Groups, IAM roles).

- Tools: Azure Portal or ARM templates.

- Outcome: Azure environment prepared for migration.

**Step 2: Install and Configure Azure Migrate Appliance**

**2.1 Create an Azure Migrate Project:**

- Task: Set up a new Azure Migrate project in the Azure portal.

- Procedure:

1. In the Azure portal, navigate to Azure Migrate.

2. Click "Create project" and fill in the project details.

3. Select "Create" to provision the project.

- Outcome: Azure Migrate project created.

**2.2 Download Azure Migrate Appliance:**

- Task: Download the Azure Migrate Appliance OVA file from the Azure portal.

- Procedure:

1. In the Azure Migrate project, go to "Discover" and click "Add tool".

2. Select "Discover" under "Server Migration".

3. Download the Azure Migrate appliance OVA file.

- Outcome: Azure Migrate Appliance OVA file downloaded.

**2.3 Deploy Azure Migrate Appliance in VMware:**

- Task: Deploy the Azure Migrate Appliance as an OVF template.

- Procedure:

1. Open VMware vSphere Client.

2. Navigate to "File" -> "Deploy OVF Template".

3. Select the downloaded OVA file and follow the prompts to deploy it.

- Outcome: Azure Migrate Appliance deployed in VMware environment.

**2.4 Configure Azure Migrate Appliance:**

- Task: Power on the Azure Migrate Appliance VM and configure it.

- Procedure:

1. Power on the appliance VM.

2. Open a web browser and navigate to the appliance’s IP address.

3. Follow the setup wizard to configure the appliance, including registering it with your Azure Migrate project.

- Outcome: Azure Migrate Appliance configured and registered with Azure.

**Step 3: Discover and Assess VMs**

**3.1 Discover VMs:**

- Task: Use the Azure Migrate Appliance to discover VMs in your VMware environment.

- Procedure:

1. In the appliance web interface, configure the connection to the VMware vCenter Server.

2. Start the discovery process.

- Outcome: VMs discovered and listed in the Azure Migrate project.

**3.2 Assess VMs:**

- Task: Assess the discovered VMs to determine their readiness for migration.

- Procedure:

1. In the Azure Migrate project, go to "Assess".

2. Create a new assessment for the discovered VMs.

3. Review the assessment reports for compatibility and sizing recommendations.

- Outcome: Assessment reports generated.

**Step 4: Migrate VMs**

**4.1 Prepare for Migration:**

- Task: Ensure VMs are prepared for migration by addressing any issues found in the assessment.

- Procedure:

1. Resolve any compatibility issues highlighted in the assessment.

2. Verify that VMs are ready for migration.

- Outcome: VMs prepared for migration.

**4.2 Replicate VMs:**

- Task: Configure and start replication of VMs to Azure.

- Procedure:

1. In the Azure Migrate project, go to "Replicate".

2. Configure the replication settings, including the target Azure region and resource group.

3. Start the replication process.

- Outcome: VMs replication to Azure initiated.

**4.3 Monitor Replication:**

- Task: Monitor the replication status.

- Tools: Azure Migrate portal.

- Outcome: Replication progress monitored and any issues addressed.

**Step 5: Test and Complete Migration**

**5.1 Test Migrated VMs:**

- Task: Test the replicated VMs in Azure.

- Procedure:

1. Perform a test migration for a subset of VMs.

2. Validate the functionality of applications and services.

- Outcome: Test migration completed and validated.

**5.2 Migrate VMs:**

- Task: Perform the final migration of VMs to Azure.

- Procedure:

1. Stop replication and perform a final sync.

2. Start the migration process for all VMs.

- Outcome: VMs migrated to Azure.

**5.3 Validate and Optimize:**

- Task: Validate the migrated VMs and optimize the environment.

- Procedure:

1. Verify the migrated VMs are functioning as expected.

2. Optimize the VMs for performance and cost.

- Outcome: Validated and optimized Azure environment.

**Step 6: Post-Migration Steps**

**6.1 DNS and Configuration Updates:**

- Task: Update DNS records and other configurations to point to the new Azure VMs.

- Tools: DNS management tool, application configuration files.

- Outcome: Traffic redirected to Azure VMs.

**6.2 Decommission On-Premises Servers:**

- Task: Decommission the on-premises servers after successful migration.

- Procedure:

1. Verify that all applications are running smoothly on Azure.

2. Power off and decommission the on-premises VMs.

- Outcome: On-premises servers decommissioned.

**Appendix**

A.1 Useful Commands:

- Azure CLI command to list Migrate projects:

>> az migrate project list --resource-group <resource-group>

- Azure CLI command to start replication:

>> az migrate replication start --resource-group <resource-group> --migrate-project <project-name> --name <replication-name>

A.2 References:

- Azure Migrate documentation: [Azure Migrate Documentation]

>> <https://docs.microsoft.com/en-us/azure/migrate/>

- Azure Pricing Calculator: [Azure Pricing Calculator]

>> <https://azure.microsoft.com/en-us/pricing/calculator/>