**SOP for Migrating VMware VMs to AWS using AWS Server Migration Service**

* **Objective:**

To migrate CentOS, Ubuntu, and Windows servers from an on-premises VMware environment to AWS using AWS Server Migration Service (SMS).

* **Prerequisites:**

1. An active AWS account.

2. Administrator access to the VMware vSphere environment.

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

4. AWS 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 AWS Account and Environment Setup:

- Task: Create necessary AWS resources (VPC, subnets, security groups, IAM roles).

- Tools: AWS Management Console or CloudFormation.

- Outcome: AWS environment prepared for migration.

**Step 2: Install and Configure AWS SMS Connector**

**2.1 Download AWS SMS Connector:**

- Task: Download the AWS SMS Connector from the AWS Management Console.

- Tools: Web browser.

- Outcome: AWS SMS Connector OVF file downloaded.

**2.2 Deploy SMS Connector in VMware:**

- Task: Deploy the SMS Connector as an OVF template.

- Procedure:

1. Open VMware vSphere Client.

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

3. Select the downloaded SMS Connector OVF file.

4. Follow the prompts to deploy the template.

- Outcome: SMS Connector deployed in VMware environment.

**2.3 Configure SMS Connector:**

- Task: Power on the SMS Connector VM and configure it.

- Procedure:

1. Power on the SMS Connector VM.

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

3. Follow the setup wizard to configure the connector, including registering it

with your AWS account.

- Outcome: SMS Connector configured and registered with AWS.

**Step 3: Create Replication Jobs**

**3.1 Access AWS SMS:**

- Task: Log in to the AWS Management Console and navigate to AWS SMS.

- Tools: Web browser.

- Outcome: AWS SMS dashboard accessible.

**3.2 Create Replication Jobs:**

- Task: Create a new replication job for the VMs.

- Procedure:

1. In AWS SMS, select "Replication Jobs" and click "Create Replication Job".

2. Select the VMs you want to replicate. You can select multiple VMs at once.

3. Configure the replication settings, including frequency and start time.

- Outcome: Replication jobs created for CentOS, Ubuntu, and Windows VMs.

**3.3 Start Replication:**

- Task: Start the replication jobs.

- Outcome: VMs replication initiated.

**3.4 Monitor Replication:**

- Task: Monitor the status of the replication jobs.

- Tools: AWS SMS Console.

- Outcome: Replication progress monitored and any issues addressed.

**Step 4: Launch and Validate EC2 Instances**

**4.1 Launch Replicated Instances:**

- Task: Launch the replicated VMs as EC2 instances.

- Procedure:

1. In AWS SMS, go to the replicated servers and select the ones you want to

launch.

2. Click "Launch as EC2 Instance".

3. Configure the instance settings (instance type, security groups, IAM roles).

- Outcome: EC2 instances launched from replicated VMs.

**4.2 Validate Instances:**

- Task: Verify that the EC2 instances are functioning correctly.

- Procedure:

1. SSH/RDP into the instances.

2. Ensure applications and services are running as expected.

3. Perform thorough testing.

- Outcome: Validated and functional EC2 instances.

**Step 5: Post-Migration Steps**

**5.1 DNS and Configuration Updates:**

- Task: Update DNS records and other configurations to point to the new AWS instances.

- Tools: DNS management tool, application configuration files.

- Outcome: Traffic redirected to AWS instances.

**5.2 Optimize and Cost Management:**

- Task: Optimize instances for performance and cost.

- Tools: AWS Cost Explorer, Trusted Advisor.

- Outcome: Optimized AWS environment.

**5.3 Decommission On-Premises Servers:**

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

- Procedure:

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

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

- Outcome: On-premises servers decommissioned.

**Appendix**

**A.1 Useful Commands:**

- AWS CLI command to describe SMS connectors:

>> aws sms get-connectors

- AWS CLI command to start a replication job:

>> aws sms start-on-demand-replication-run --replication-job-id <job-id>

**A.2 References:**

- AWS Server Migration Service documentation: [AWS SMS Documentation] (<https://docs.aws.amazon.com/server-migration-service/index.html>)

- AWS Pricing Calculator: ( <https://calculator.aws/#/> )