**Pre-Migration Preparation:**

1. Assessment of Existing Infrastructure:

- Understand the architecture, dependencies, and configurations of the existing infrastructure on AWS.

- Document all resources, including VM configurations, networking setups, security groups, and databases.

2. Azure Environment Setup:

- Provision necessary resources in the Azure environment, including Virtual Networks, Subnets, Security Groups, and Storage Accounts.

- Ensure that Azure resources are configured to match or exceed the specifications of AWS resources.

3. Data Migration Strategy:

- Plan the migration of the MySQL RDS database from AWS to Azure. Options include using Azure Database for MySQL, Azure VM with MySQL installed, or Azure Database Migration Service.

- Determine the best approach for migrating application assets such as product images and PDFs. This may involve copying data to Azure Blob Storage or Azure Files.

4. Downtime Tolerance: Define acceptable downtime window for migration cutover.

5. Cost Estimation: Estimate costs associated with Azure services and migration tools.

**Migration Steps:**

Configure Migration Tools:

Choose appropriate tools for database and data migration (e.g., Azure Database Migration Service, Azure Data Factory).

Configure migration settings and establish secure connections between AWS and Azure.

1. Network Connectivity:

- Establish connectivity between AWS and Azure environments to facilitate data transfer. This can be achieved using VPN Gateway or Azure ExpressRoute.

2. Database Migration:

- Perform a trial migration of the MySQL database to Azure to ensure compatibility and identify any potential issues.

- Schedule a maintenance window to minimize downtime for the final database migration.

- Use Azure Database Migration Service or manual methods to migrate the production database from AWS RDS to Azure MySQL.

3. Application Deployment:

- Set up the necessary infrastructure in Azure, including VMs or Azure App Service for hosting the frontend and backend applications.

- Ensure that the Azure VMs are provisioned with the required specifications (CPU, RAM, Disk).

- Deploy the frontend and backend applications to Azure, ensuring that all dependencies and configurations are replicated accurately.

4. Data Migration:

- Transfer application assets such as product images and PDFs from AWS to Azure storage solutions (Blob Storage or Azure Files).

- Validate data integrity and accessibility post-migration to ensure that all assets are available to the application.

5. Testing and Validation:

- Conduct comprehensive testing of the migrated infrastructure to verify functionality, performance, and data integrity.

- Perform end-to-end testing of the application to ensure that all components are functioning as expected in the Azure environment.

**Post-Migration Tasks:**

1. DNS Update:

- Update DNS records to point to the new Azure resources to redirect traffic from the frontend domain to the Azure environment.

2. Monitoring and Optimization:

- Set up monitoring and alerting in Azure to track the performance and health of the infrastructure.

- Optimize resource utilization and costs in Azure by rightsizing VMs and utilizing Azure Reserved Instances where applicable.

3. Documentation and Knowledge Transfer:

- Document the Azure infrastructure configuration, including network topology, security settings, and deployment procedures.

- Conduct knowledge transfer sessions with the operations team to ensure they are familiar with the new Azure environment and can manage it effectively.

**Contingency Plan:**

- Prepare rollback procedures in case of unforeseen issues during the migration process.

- Maintain backups of critical data and configurations to mitigate the risk of data loss.

- Communicate effectively with stakeholders and end-users about the migration schedule and potential impact on services.