Week – 7 Assignment

Create a Memory Alert for Virtual machines Configure Alerts/thresholds /Action groups on the resources Database monitoring

Solution:

Creating and configuring a memory alert for virtual machines (VMs), setting thresholds, action groups, and database monitoring in Azure can be accomplished using the Azure portal. Here's a step-by-step guide:

Step 1: Set Up Monitoring for a Virtual Machine

1. **Log into the Azure Portal**:
    - Open your web browser and go to Azure Portal.
2. **Navigate to Virtual Machines**:
    - In the left-hand menu, select Virtual Machines.
    - Choose the VM for which you want to set up the memory alert.
3. **Enable Diagnostics**:
    - In the VM blade, under Monitoring, select Diagnostics settings (classic).
    - Click on Enable guest-level monitoring if it's not already enabled.
    - Under Performance counters, ensure that memory metrics are selected.

Step 2: Create a Memory Alert for the Virtual Machine

1. **Go to Alerts**:
    - In the VM blade, under Monitoring, select Alerts.
2. **Add Alert Rule**:
    - Click on + New alert rule.
3. **Configure the Alert Condition**:
    - In the Create rule blade, under Scope, ensure your VM is selected.
    - Under Condition, click on Add condition.
    - Search for and select the Available memory metric.
    - Set the threshold value (e.g., when memory is less than 500 MB).
    - Configure the aggregation type (e.g., Average) and the period (e.g., Over the last 5 minutes).
4. **Define the Action Group**:

- Under Actions, click on Add action groups.
- Click + Create action group.
- Fill in the details for the action group (e.g., Action group name, Short name).
- Define the actions (e.g., Email, SMS, Push Notifications).
- Click OK to save the action group.

5. **Review and Create the Alert Rule**:
   - Under Alert rule details, fill in the details (e.g., Alert rule name, Description, Severity).
   - Review the settings and click Create alert rule.

Step 3: Configure Database Monitoring

1. **Navigate to Databases**:
   - In the left-hand menu, select SQL databases or another type of database service you are using.
2. **Select the Database**:
   - Choose the database you want to monitor.
3. **Set Up Diagnostics Settings**:
   - In the database blade, under Monitoring, select Diagnostics settings.
   - Click on + Add diagnostic setting.
   - Select the metrics and logs you want to monitor (e.g., CPU usage, DTU usage for SQL databases).
   - Configure where to send the logs (e.g., Log Analytics workspace, Storage account, Event Hub).

Step 4: Create Alerts for Database Metrics

1. **Go to Alerts**:
   - In the database blade, under Monitoring, select Alerts.
2. **Add Alert Rule**:
   - Click on + New alert rule.
3. **Configure the Alert Condition**:
   - In the Create rule blade, under Scope, ensure your database is selected.
   - Under Condition, click on Add condition.

- Search for and select the metric you want to monitor (e.g., DTU percentage for SQL databases).
- Set the threshold value (e.g., when DTU usage is above 80%).
- Configure the aggregation type (e.g., Average) and the period (e.g., Over the last 5 minutes).

4. **Define the Action Group**:
   - Under Actions, click on Add action groups.
   - You can use the same action group created earlier or create a new one following the same steps.
5. **Review and Create the Alert Rule**:
   - Under Alert rule details, fill in the details (e.g., Alert rule name, Description, Severity).
   - Review the settings and click Create alert rule.

By following these steps, you will have created memory alerts for your VMs, configured thresholds, set up action groups, and established database monitoring in Azure.

Azure CLI Solution:

Step 1: Set Up Monitoring for a Virtual Machine

1. **Log in to Azure CLI:**

   az login

2. **Enable Diagnostics:**

   az vm diagnostics set --resource-group <ResourceGroupName> --vm-name <VMName> --settings <DiagnosticSettingsPath> --protected-settings <ProtectedSettingsPath>

Replace **<ResourceGroupName>**, **<VMName>, <DiagnosticSettingsPath>**, and **<ProtectedSettingsPath>** with your respective values. The diagnostic settings files should be in JSON format. You can generate the settings file by exporting diagnostics settings from the Azure Portal.

Step 2: Create a Memory Alert for the Virtual Machine

1. **Create Action Group:**

   az monitor action-group create --resource-group <ResourceGroupName> --name <ActionGroupName> --short-name <ShortName> --action <actionType>=<actionName> --email <emailAddress>

Replace **<ResourceGroupName>, <ActionGroupName>, <ShortName>, <actionType>, <actionName>,** and **<emailAddress>** with your respective values.

2. **Create Alert Rule:**

   az monitor metrics alert create --name <AlertName> --resource-group <ResourceGroupName> --scopes /subscriptions/<SubscriptionID>/resourceGroups/<ResourceGroupName>/providers/Microsoft.Compute/virtualMachines/<VMName> --condition "avg percentage CPU > 80" --description "Memory usage alert" --action-groups <ActionGroupResourceID>

Replace **<AlertName>, <ResourceGroupName>, <SubscriptionID>, <VMName>,** and **<ActionGroupResourceID>** with your respective values.

Step 3: Configure Database Monitoring

1. **Enable Diagnostics on Database:**

   az monitor diagnostic-settings create --name <DiagnosticSettingName> --resource <DatabaseResourceID> --logs '[{"category": "SQLInsights", "enabled": true}]' --metrics '[{"category": "AllMetrics", "enabled": true}]' --workspace <LogAnalyticsWorkspaceID>

Replace**<DiagnosticSettingName>, <DatabaseResourceID>, and <LogAnalyticsWorkspaceID>** with your respective values.

Step 4: Create Alerts for Database Metrics

1. **Create Database Metric Alert:**

   az monitor metrics alert create --name <DBAlertName> --resource-group <ResourceGroupName> --scopes /subscriptions/<SubscriptionID>/resourceGroups/<ResourceGroupName>/providers/Microsoft.Sql/servers/<ServerName>/databases/<DatabaseName> --condition "avg dtu_consumption_percent > 80" --description "DTU usage alert" --action-groups <ActionGroupResourceID>

Replace **<DBAlertName>, <ResourceGroupName>, <SubscriptionID>, <ServerName>, <DatabaseName>,** and **<ActionGroupResourceID>** with your respective values.

These commands will help you set up memory alerts for VMs, configure thresholds, set up action groups, and monitor database performance using the Azure CLI.