**Creating a Grafana Dashboard for Azure Cost and Event Management**

**Introduction**

This document provides a step-by-step guide to creating a Grafana dashboard with two panels:

1. **Cost Management Panel**: Displays Azure resource costs.
2. **Event Management Panel**: Shows event logs.

**Prerequisites**

* **Grafana**: Installed on a lab server.
* **Azure Subscription**: For creating and managing resources.

**Steps**

**1. Install and Configure Grafana**

1. **Download and Install Grafana**:
   * Go to the Grafana download page.
   * Choose the appropriate version for your operating system and download it.
   * Follow the installation instructions specific to your OS (e.g., using package managers like apt, yum, or downloading a .zip or .tar.gz file).
2. **Start Grafana**:
   * After installation, start the Grafana service. Typically, this is done using system service commands (systemctl start grafana-server for Linux).
3. **Access Grafana Web Interface**:
   * Open a web browser and go to http://<your-server-ip>:3000.
   * Log in with the default credentials (admin/admin). You will be prompted to change the password.

**2. Create an Azure App Registration**

1. **Navigate to Azure Portal**:
   * Open [Azure Portal](https://portal.azure.com/).
2. **Register a New Application**:
   * Go to Azure Active Directory > App registrations > New registration.
   * Enter a name for your application.
   * For Supported account types, choose Accounts in this organizational directory only (Single tenant).
   * Click Register to create the application.
3. **Configure API Permissions**:
   * Go to API permissions > Add a permission.
   * Select Microsoft Graph > Delegated permissions.
   * Add Cost Management, Reader, and Log Analytics Reader permissions.
   * Click Add permissions and grant admin consent if required.
4. **Generate a Client Secret**:
   * Go to Certificates & secrets > New client secret.
   * Provide a description and set an expiration period.
   * Click Add and note down the secret value. It is only shown once.
5. **Record Client ID and Tenant ID**:
   * Go to Overview to find the Application (client) ID and Directory (tenant) ID. Record these for use in Grafana configuration.

**3. Assign Roles in Azure Subscription**

1. **Open Azure Subscription**:
   * Go to Subscriptions in the Azure Portal.
   * Select the relevant subscription.
2. **Assign Roles**:
   * Navigate to Access control (IAM) > Add > Add role assignment.
   * Choose roles such as Cost Management Reader, Reader, and Log Analytics Reader.
   * Assign these roles to the application you registered earlier.

**4. Set Up Event Hub for Log Export**

1. **Create an Event Hub Namespace**:
   * Go to Event Hubs in the Azure Portal.
   * Click Create to set up a new Event Hub Namespace if one does not already exist.
2. **Create an Event Hub**:
   * Within the namespace, click Add to create a new Event Hub.
   * Name the Event Hub and configure partition settings as required.
3. **Configure Diagnostic Settings**:
   * Go to Azure Monitor > Diagnostic settings.
   * Click Add diagnostic setting.
   * Choose the log categories you want to export (e.g., Activity Logs).
   * Select Send to Event Hub and choose the Event Hub you created.

**5. Configure Grafana Data Sources**

1. **Add Azure Data Source in Grafana**:
   * In Grafana, go to Configuration > Data Sources > Add data source.
   * Select Azure Monitor or Log Analytics.
2. **Enter Connection Details**:
   * **Client ID**: Enter the Application (client) ID from the Azure App Registration.
   * **Client Secret**: Enter the secret value you generated.
   * **Tenant ID**: Enter the Directory (tenant) ID.
   * **Subscription ID**: Enter your Azure subscription ID.
   * **Log Analytics Workspace ID** (if using Log Analytics): Enter the Workspace ID.
3. **Test and Save**:
   * Click Save & Test to verify the connection.

**6. Create and Configure Grafana Panels**

1. **Add Cost Management Panel**:
   * Go to Dashboards > New Dashboard > Add New Panel.
   * Choose a visualization type (e.g., Graph, Gauge).
   * Use KQL (Kusto Query Language) to query cost data.
2. **Add Event Management Panel**:
   * Similarly, add another panel to your dashboard.
   * Use KQL queries to fetch event logs from the Event Hub or Azure Monitor.
   * Customize the panel to show event trends and details.

**7. Finalize and Review**

* **Review Dashboards**: Ensure the data is displayed correctly and the panels meet your requirements.
* **Adjust Queries and Panels**: Fine-tune queries and visualization settings as needed.
* **Save and Share Dashboard**: Save your dashboard and configure sharing settings if necessary.

**Conclusion**

* **Monitoring**: Regularly check the dashboard for accurate and updated data.
* **Updates**: Keep Grafana and Azure configurations updated to accommodate any changes in data sources or requirements.