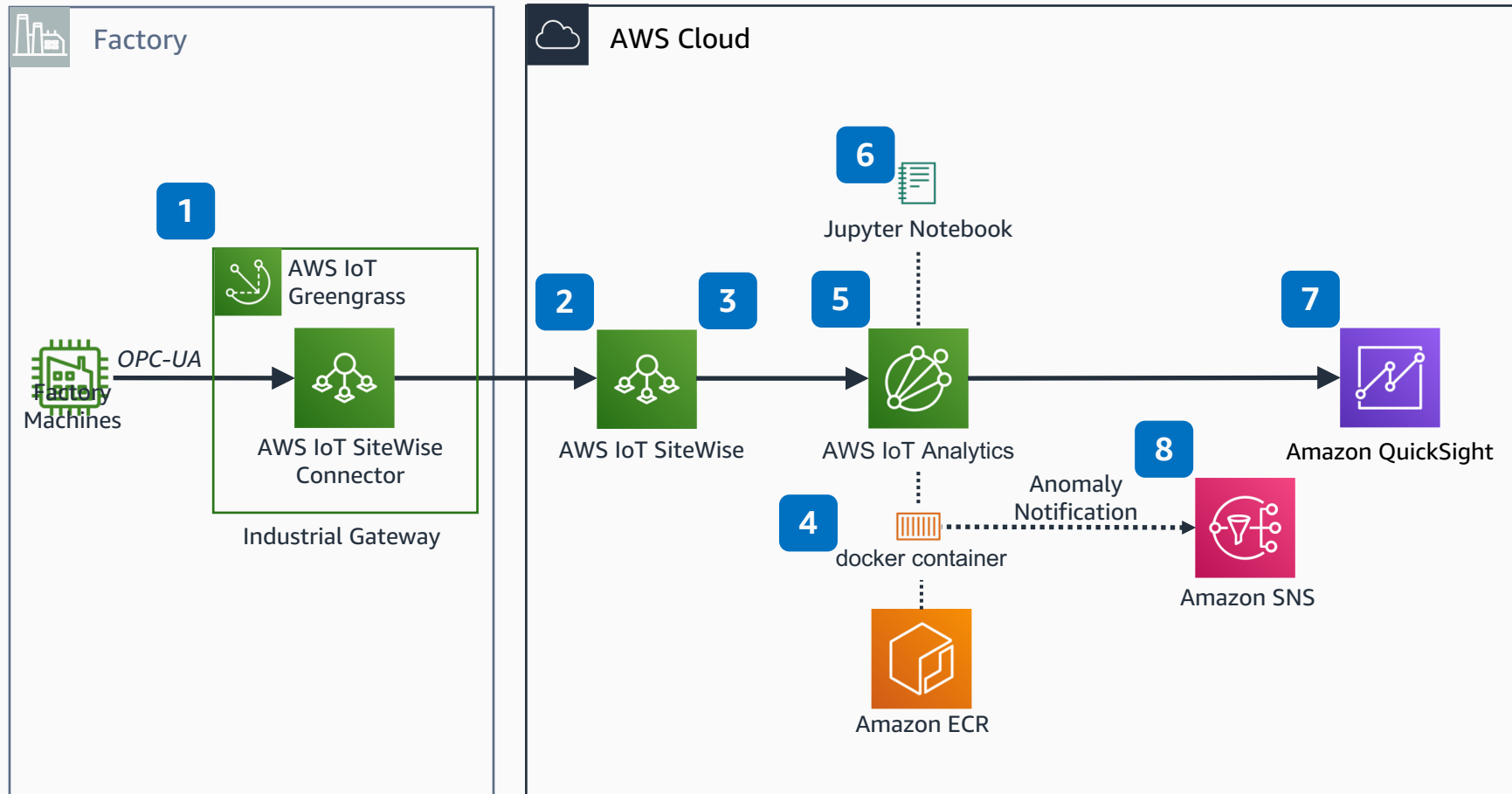# AWS Industrial Predictive Maintenance

Machine Learning Model Reference Architecture

Create a Predictive Maintenance (PdM) Machine Learning (ML) model using AWS IoT SiteWise and AWS IoT Analytics with Amazon SNS anomaly detection notifications.

Factory

1 AWS IoT Greengrass

AWS IoT SiteWise Connector

Industrial Gateway

Factory Machines — *OPC-UA* →

AWS Cloud

6 Jupyter Notebook

2 **3** AWS IoT SiteWise

5 AWS IoT Analytics

4 docker container

Amazon ECR

Anomaly Notification

8 Amazon SNS

7 Amazon QuickSight

1. Deploy an **AWS IoT SiteWise Gateway** to connect to the factory machines OPC-UA Servers.

2. Create a view in **AWS IoT SiteWise** and define the factory machines as assets.

3. Define the metrics to be monitored for the factory machines.

4. Build a **Docker** image and add it to **Amazon Elastic Container Registry (Amazon ECR)**.

5. In **AWS IoT Analytics**, create a container data set from the **AWS IoT SiteWise** data store and link it to your **Docker** container.

6. From **AWS IoT Analytics**, create a new **Jupyter Notebook** for the data set created from **AWS IoT SiteWise** to create a Predictive Maintenance (PdM) Machine Learning (ML) model.

7. Visualize your analysis using **Amazon QuickSight** on the **AWS IoT Analytics** data source.

8. Create a topic for **anomaly detection** notifications in **Amazon Simple Notification Service (Amazon SNS)** and configure the trigger in your model.

AWS Reference Architecture