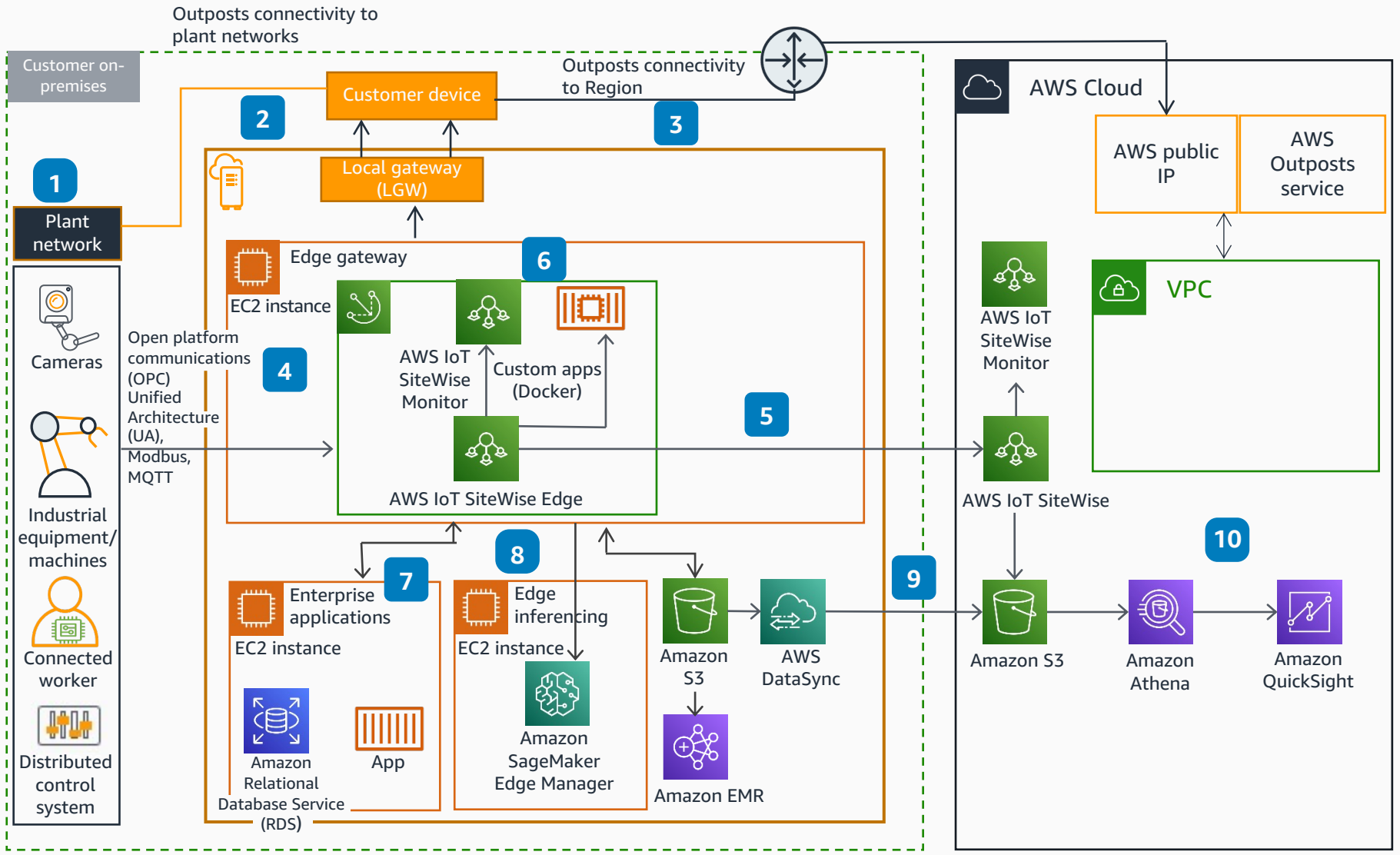
Smart Factory on AWS Outposts

How to build a scalable and secure Internet of Things (IOT)-backed smart factory using AWS Outposts and AWS Regions.



1. The plant network connects devices like cameras, equipment, and programmable logic controller (PLC) systems to run plant operations.
2. The **Outpost** is located on the factory premises, and connected to the factory network using the LGW.
3. The **Outpost** is also connected back to the AWS Region, enabling the use of AWS services in the Region.
4. An **Amazon Elastic Compute Cloud (Amazon EC2)** instance on **Outposts** acts as an edge gateway. It runs **AWS IoT Greengrass** and **AWS IoT SiteWise Edge** to facilitate connectivity with the plant network.
5. The **AWS IoT SiteWise Edge** component ingests real-time equipment data to the Cloud. It also buffers the data during disconnections.
6. Local dashboards and custom applications are deployed on **AWS IoT Greengrass** for time-critical monitoring and processing.
7. Enterprise apps and point solutions deployed on **Outposts** as containers can consume data locally from **AWS IoT Greengrass**.
8. **Amazon SageMaker Neo**-optimized models are deployed on **Outposts** for edge inferencing.
9. **AWS Datasync** is used to automate transfer of data between **Amazon Simple Storage Service (Amazon S3)** on **Outposts** and in the AWS Region.
10. **Amazon Athena** and **Amazon QuickSight** can be used in the Region for running weekly analytics on the data.

Reviewed for technical accuracy March 16, 2022

AWS Reference Architecture