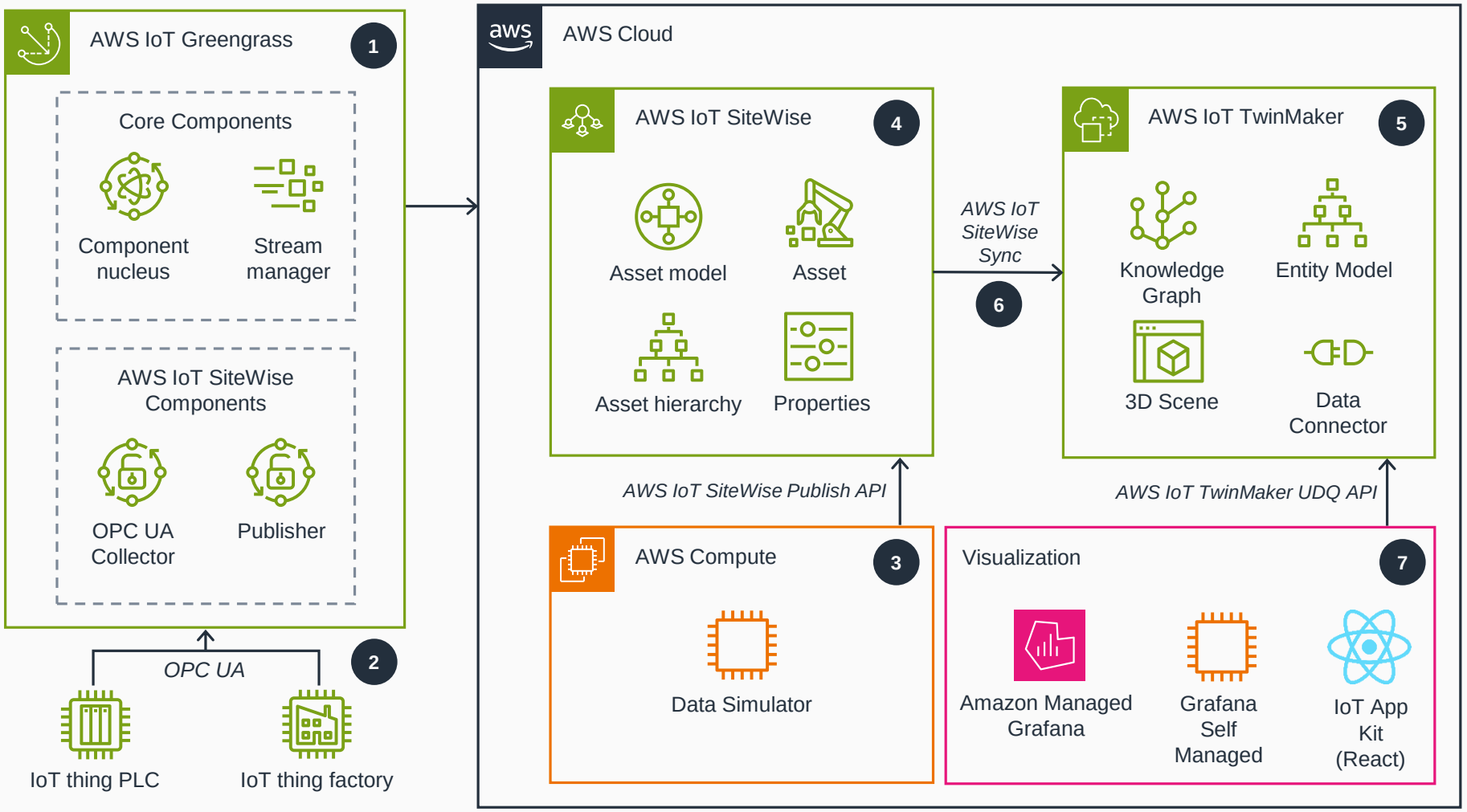
Guidance for Industrial Digital Twin on AWS

This architecture diagram provides an end-to-end approach for streaming telemetry data from industrial assets and systems through AWS IoT SiteWise and viewing them in a 3D scene using AWS IoT TwinMaker.



1. **AWS IoT SiteWise** deploys a gateway to the edge. An Open Platform Communications Unified Architecture (OPC UA) endpoint is configured on this gateway to stream telemetry data to **AWS IoT SiteWise**.

2. Industrial Programmable Logic Controllers (PLC), supervisory control and data acquisition (SCADA), historian, or input/output (I/O) servers can provide access to near-real-time data through the standard OPC UA protocol. **AWS IoT SiteWise** can subscribe to or poll these endpoints to collect data.

3. Data simulation or cloud-hosted business systems can publish data through **AWS IoT SiteWise** APIs for storage.

4. **AWS IoT SiteWise** contains template asset models, asset instances of those models, properties, and an asset hierarchy. A timeseries data store managed within the service can serve at enterprise-level.

5. **AWS IoT TwinMaker** provides an immersive 3D view of your systems and operations to optimize efficiency, increase production, and improve performance. **AWS IoT TwinMaker** supports the use of data connectors to access information trapped in silos and provides a managed digital twin graph.

6. **AWS IoT TwinMaker Asset Synchronization** enables built-in sync with **AWS IoT SiteWise**. Any changes to your assets are automatically updated within your digital twin.

7. You can access your digital twin from **Amazon Managed Grafana** or a self-managed installation. With **IoT App Kit**, **AWS IoT TwinMaker** also supports React applications and third-party AWS Partner solutions.

Reviewed for technical accuracy October 17, 2023

AWS Reference Architecture