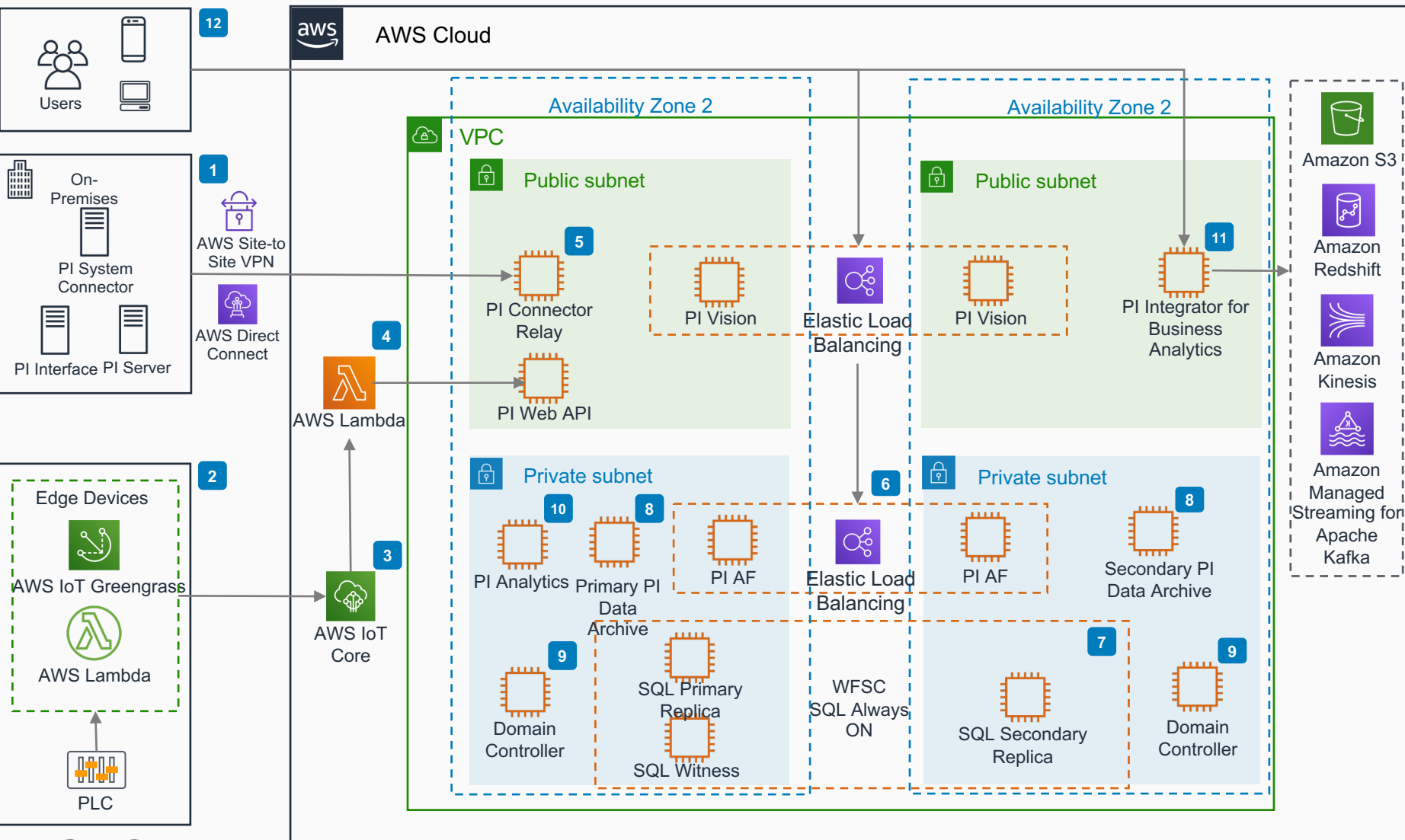


# OSisoft PI System Enterprise Data Infrastructure on AWS

Highly available and load-balanced configuration of Roll-up PI System that aggregates data from multiple PI Systems across sites.



- 1 PI System Connector connects PI System from individual sites to the Roll-up PI System on AWS via **AWS Direct Connect** or **AWS Site-to-Site VPN**.
- 2 Data from edge devices can be ingested via Modbus, OPC UA or MQTT into **AWS IoT Greengrass** or with a **AWS Lambda** function.
- 3 **AWS IoT Greengrass** sends the data from edge devices to **AWS IoT Core** using MQTT. An **AWS IoT Core** rule is triggered that invokes a **Lambda** function.
- 4 An **AWS Lambda** function translates data from MQTT message into OSisoft Messaging Format (**OMF**) and then sends it to the PI Web API which posts the data to PI System.
- 5 PI System data from on-premises is sent to the PI Connector Relay which posts the data to PI System.
- 6 **Elastic Load Balancing** directs PI System traffic from public subnet (PI Connector Relay, PI Web API, PI vision and PI Integrator for Business Analytics) to the PI Asset Framework (PI AF).
- 7 Highly available SQL Servers running on **Amazon EC2** instances store the metadata used by PI Vision and PI AF.
- 8 Both PI Collective servers (Primary PI Data Archive and Secondary PI Data Archive) receive data from PI Connector Relay.
- 9 Microsoft Active Directory provides Windows Integrated security access between PI Systems and is used for user authentication and authorization.
- 10 PI Analytics connects to PI AF and PI Data Archives to perform KPI and Event Frame computations.
- 11 PI Integrator for Business Analytics exports asset and event view data from PI System into AWS Managed Services, namely, **Amazon S3**, **Amazon Redshift**, **Amazon Kinesis**, and **Amazon Managed Streaming for Apache Kafka**.
- 12 Users can connect to the Roll-up PI System via PI Vision or PI Integrator for Business Analytics using web browser or mobile devices. **Elastic Load Balancing** directs user traffic to OSisoft PI Vision dashboarding software between the application nodes.

