# Guidance for Supply Chain Control Tower Visibility on AWS

Improve supply chain visibility with serverless AWS Supply Chain Control Tower

Improve your operational excellence and achieve near real-time end-to-end visibility of your supply chain with AWS Supply Chain Control Tower. Analyze a constant stream of data from your business-critical systems to determine actionable insights and predictive recommendations.

AWS Reference Architecture
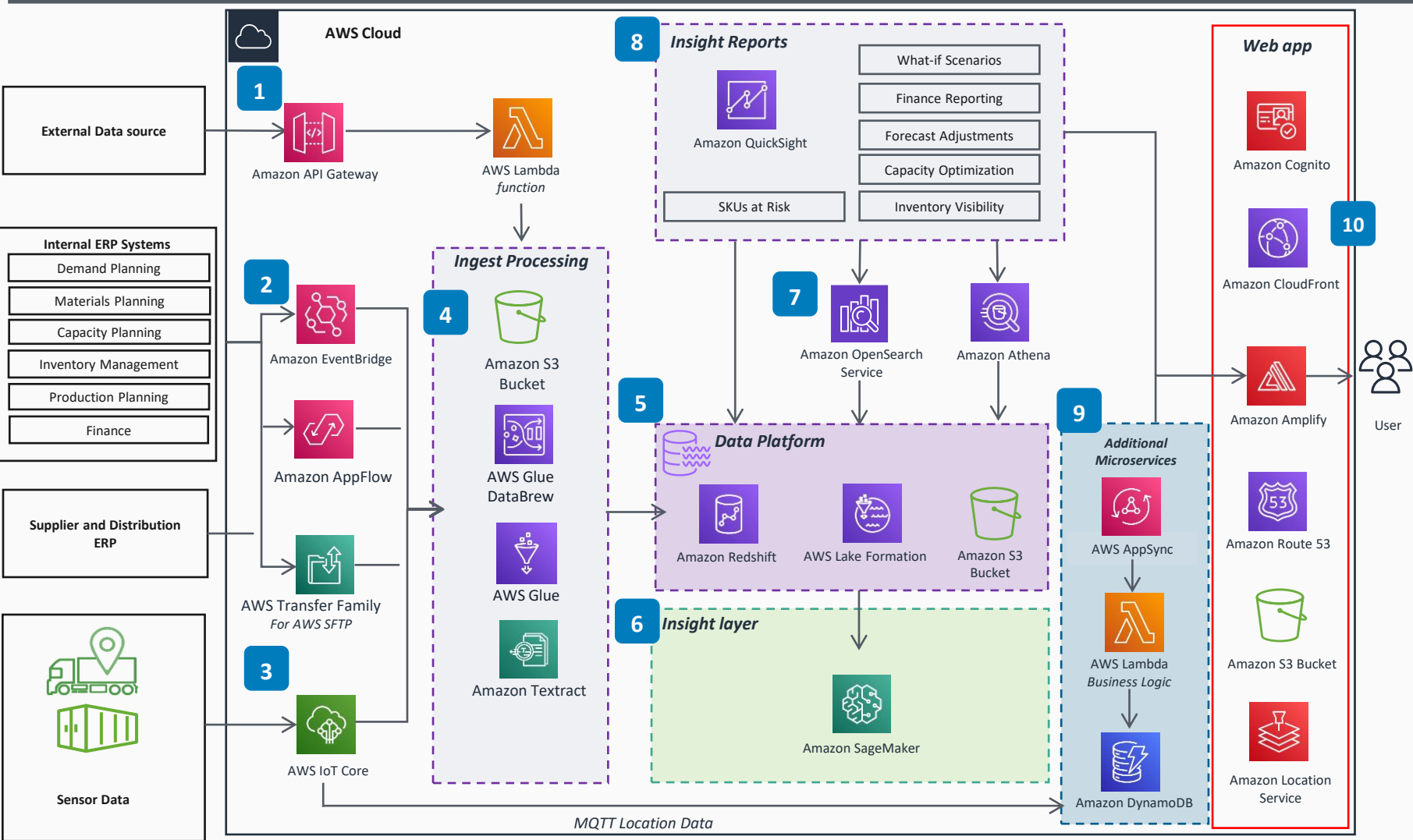
1. **Supply Chain Control Towers** (SCCT) rely on data inputs from external systems such as logistic partners. File-based integrations are often used. Modern approaches include posting/pushing data to a secure API that is built using **Amazon API Gateway** and **AWS Lambda**

2. A Consumer Packaged Goods (CPG) organization relies on critical systems that manage everything from raw materials to production capacity. A range of integration methods can be used to integrate with these systems: **Amazon EventBridge** to deliver events as they occur, **Amazon AppFlow** for turn-key integrations with systems such as SAP, and for systems that are limited to file based integrations. **AWS Transfer Family** can be used to manage secure file transfers such as SFTP jobs.

3. Various equipment across your supply chain also has data critical to SCCT. Connected devices can transmit messages through **AWS IoT Core** using the MQTT protocol.

4. Services such as **AWS DataBrew** and **AWS Glue** can be used to transform and normalize data before pushing to the data platform. **Amazon Textract** can be used to extract important data from images/paper documents (such as dock slips) for ingestion into the data-platform.

5. At the heart of the SCCT is your data-platform that will be your single source of truth for your data. There are many patterns that are suitable.

6. **Amazon SageMaker** can be used to build, train, and deploy machine learning models that are focused on specific use cases such as ETA prediction.

7. **Amazon QuickSight** can be used with **Amazon OpenSearch Service** for live analytics, **Amazon Athena** for impromptu queries for data in your data lake, and **Amazon Redshift** for complex queries and views.

8. **QuickSight** can be used to visualize the data analyzed in your data platform to create actionable insights for specific SCCT use cases (listed).

9. Your SCCT can be extended with microservices for specific use cases. Example: Query transport location data from **Amazon DynamoDB** through **Amazon Lambda** for visualization with **Amazon Location Services**

10. A scalable, secure and serverless front-end is created leveraging **AWS Amplify** for easy code development, **Amazon Cognito** for identity management, **Amazon CloudFront** for content distribution, **Amazon Simple Storage Service** (Amazon S3) for storage of static assets, and **Amazon Route 53** DNS.