
AWS
re:Invent
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IOT307-R

Build key patterns for IoT for data ingestion and visualization

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Agenda

Architectural patterns overview

Workshop – Try a few patterns!

Summary and survey

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“No one size fits all”

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Factors to consider



Data ingestion process

Data quality and cleanup

Storage and processing

Data modelling

Data discovery and observability

Refresh interval



Analytics and transformations

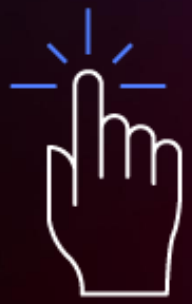
Aggregation and transformation capabilities



Cost and complexity

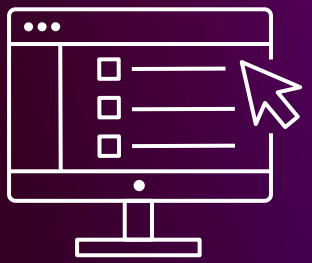
Cost of ownership

Implementation and delivery effort



Scale and flexibility

Ability to scale on demand



Business intelligence and user experience

Features and functionality expected

Internal versus customer facing

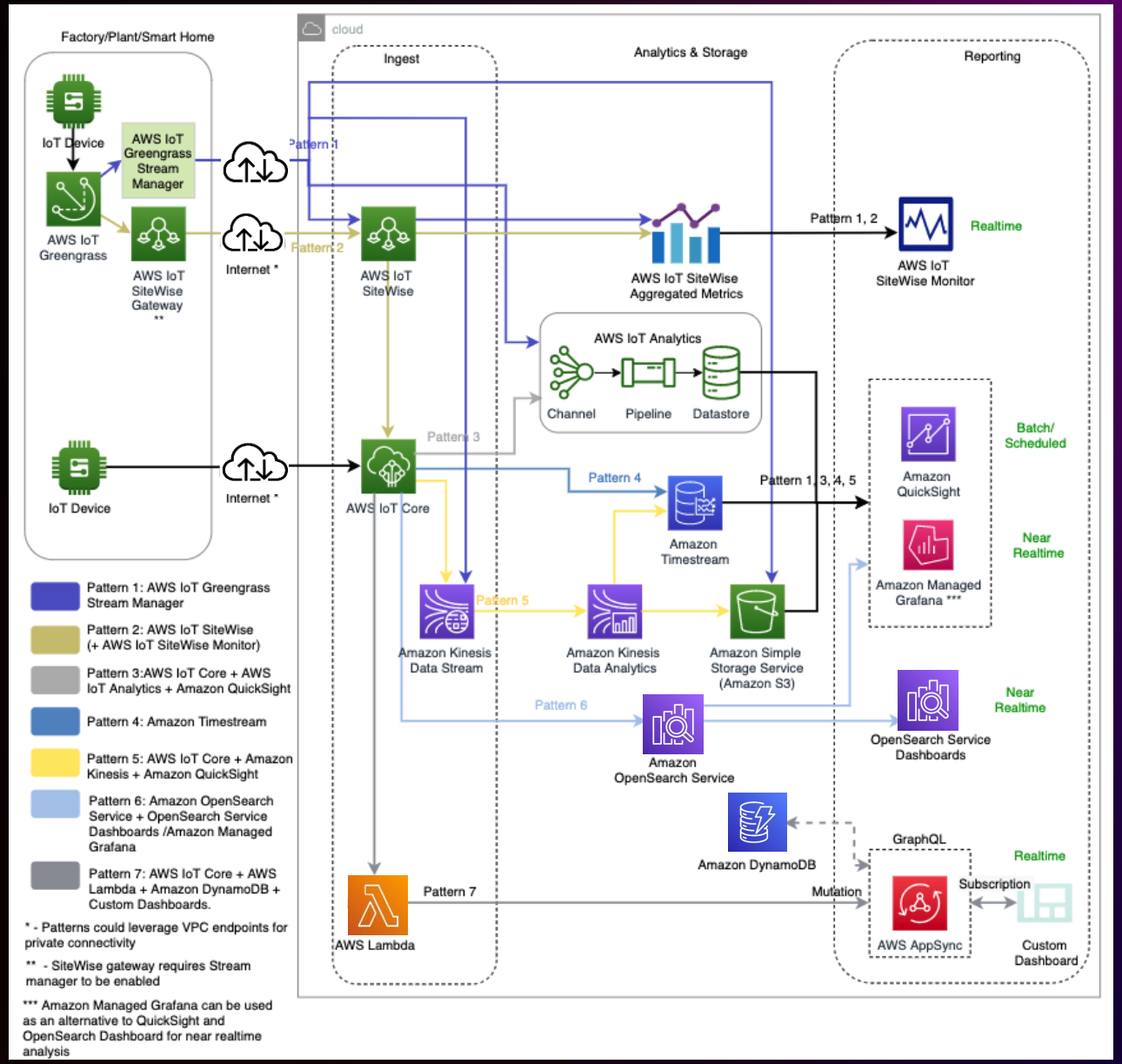
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Architectural patterns

The different architectural patterns that can deliver reporting in real time, near real time, and on schedule

Every use case is different – patterns can be tweaked to add other relevant services for additional capabilities

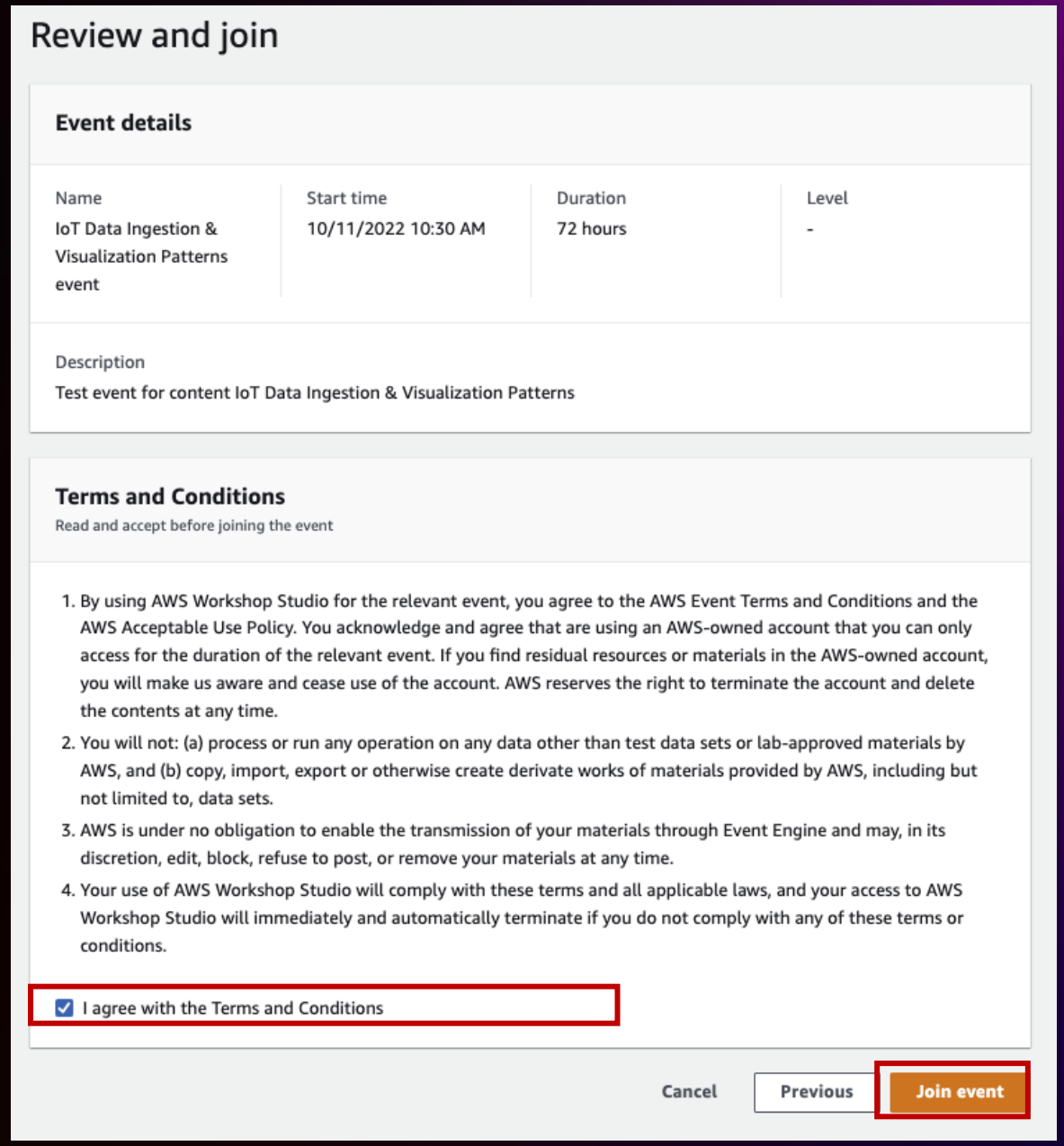


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Workshop instructions

Event link: [bit.ly/iot307](bit.ly/iot307)

- Agree with the terms and conditions
- Click “join event”

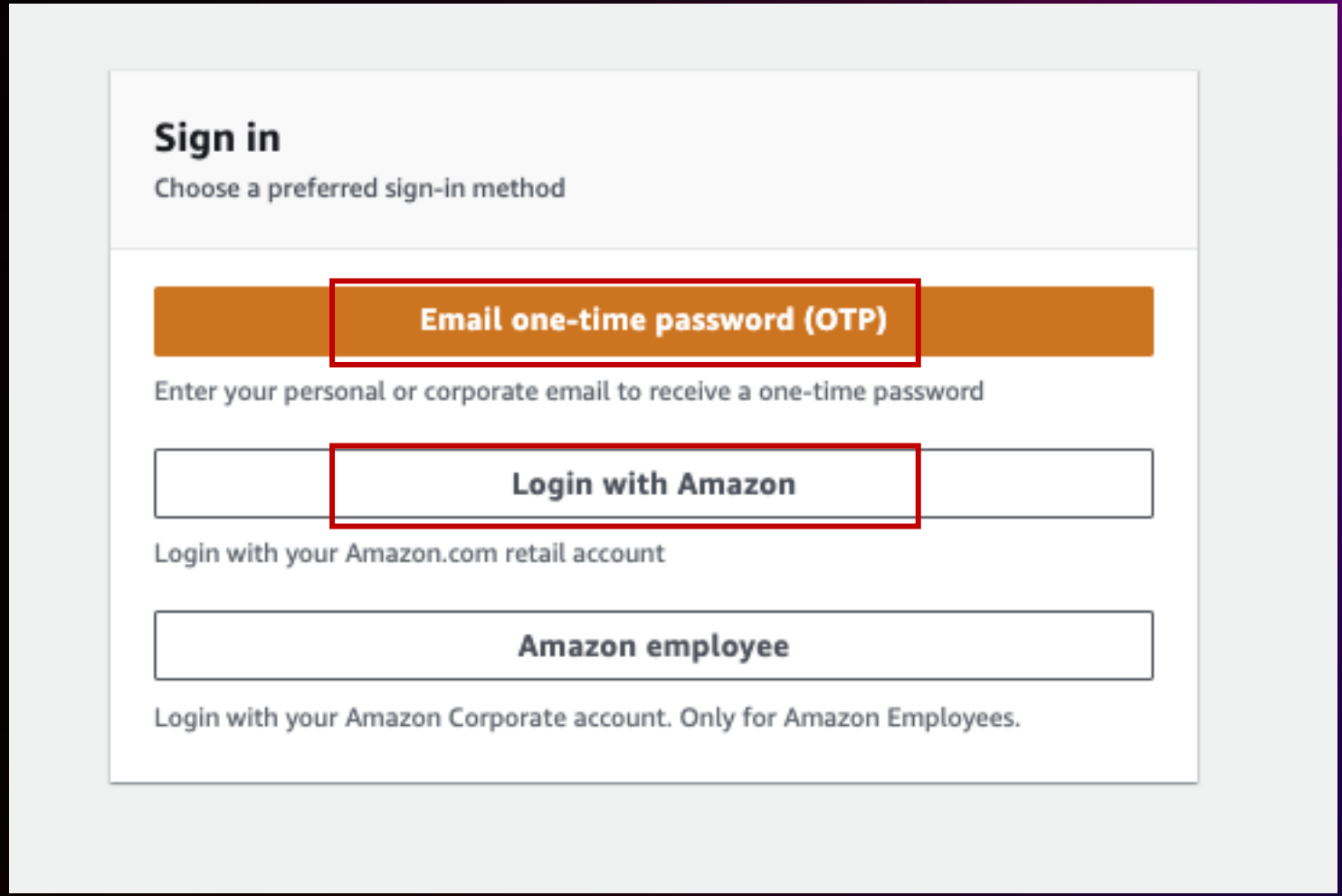


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Workshop instructions

Login options:

- Email one-time password
- Login with Amazon retail account

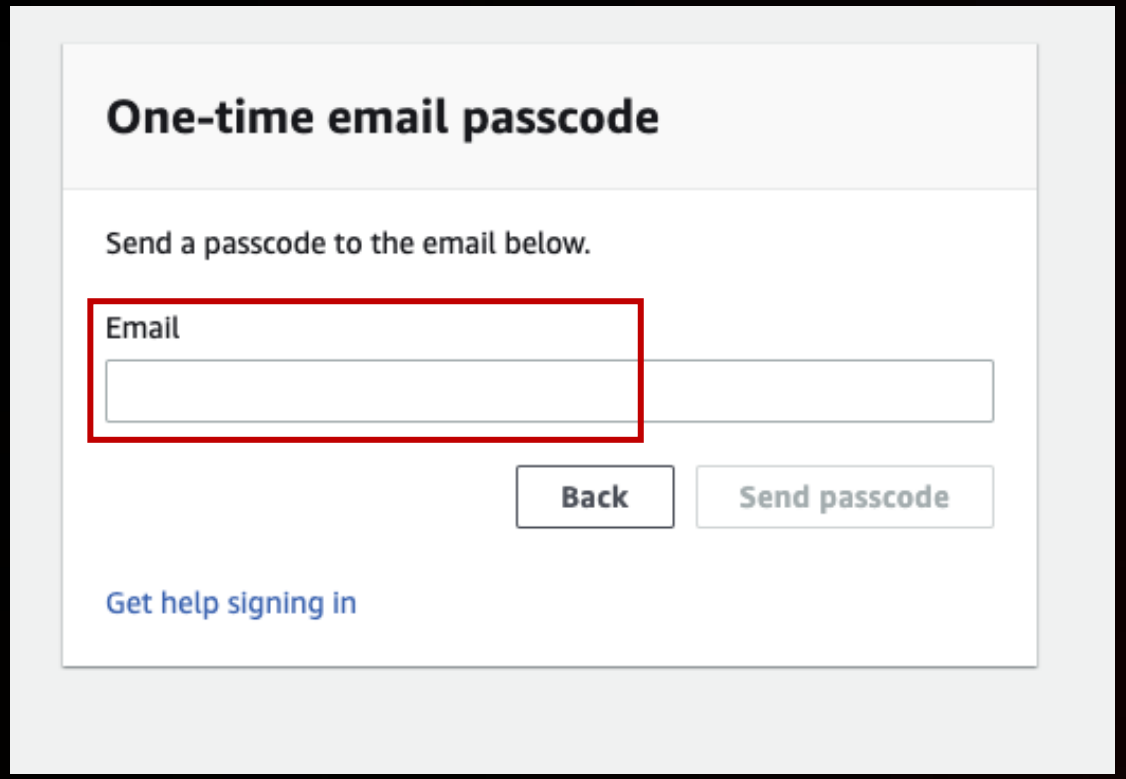


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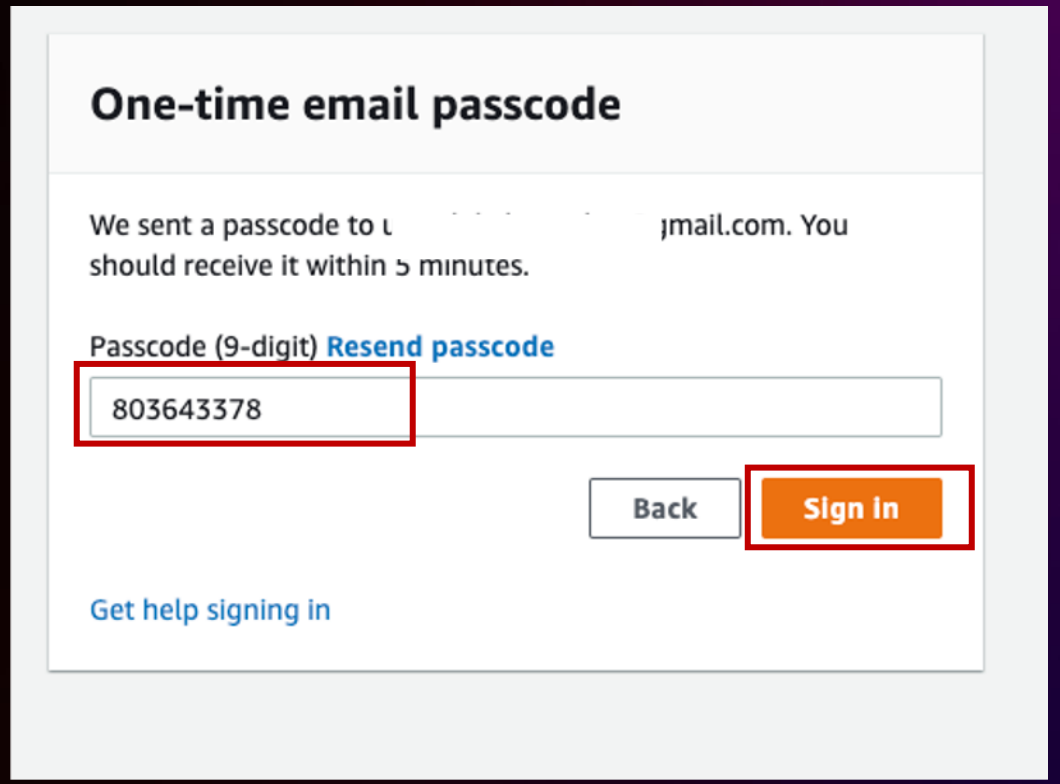
Workshop instructions

Approach: One-time email passcode

1. Enter email

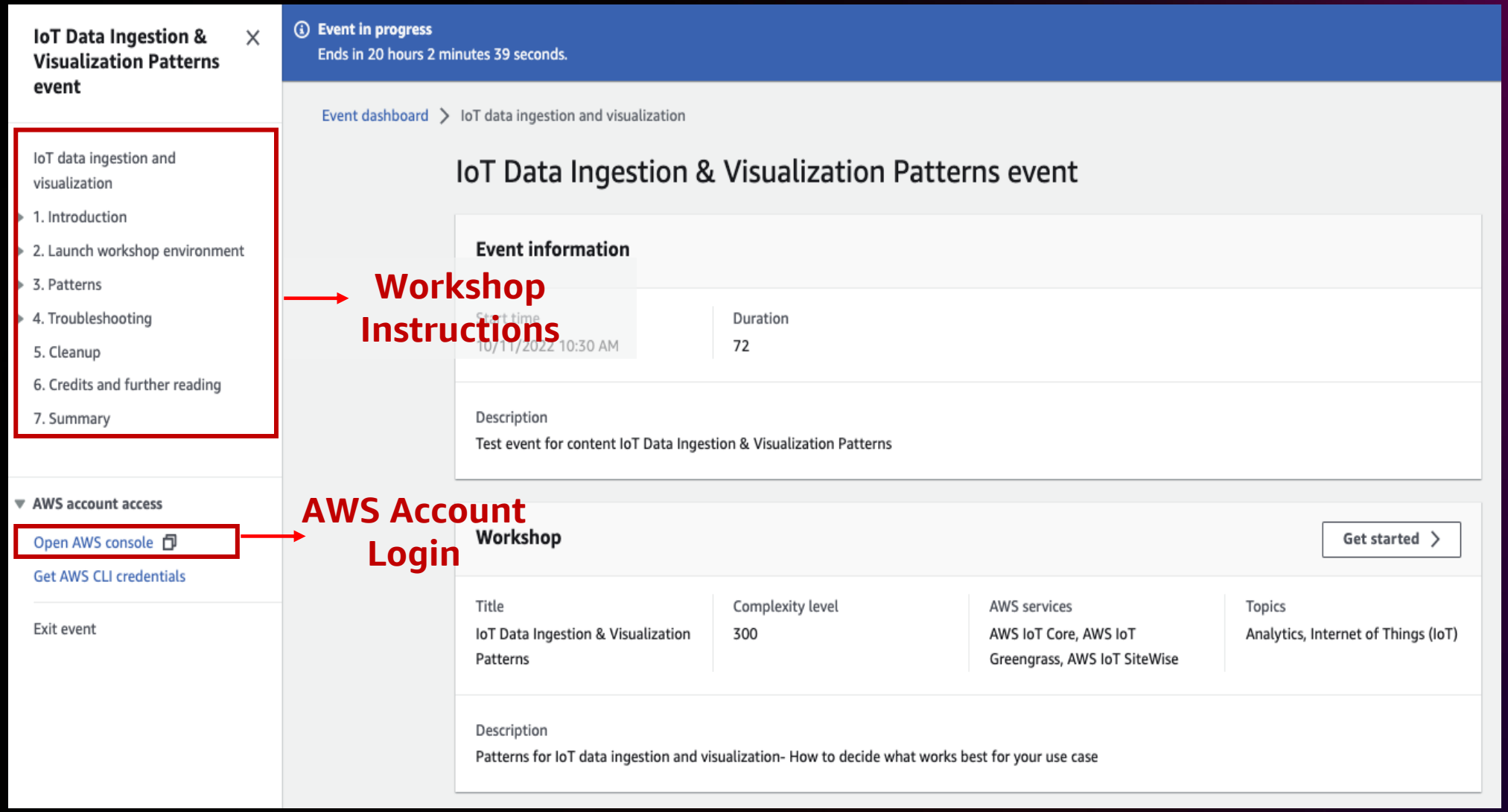


2. Enter passcode and click “Sign In”



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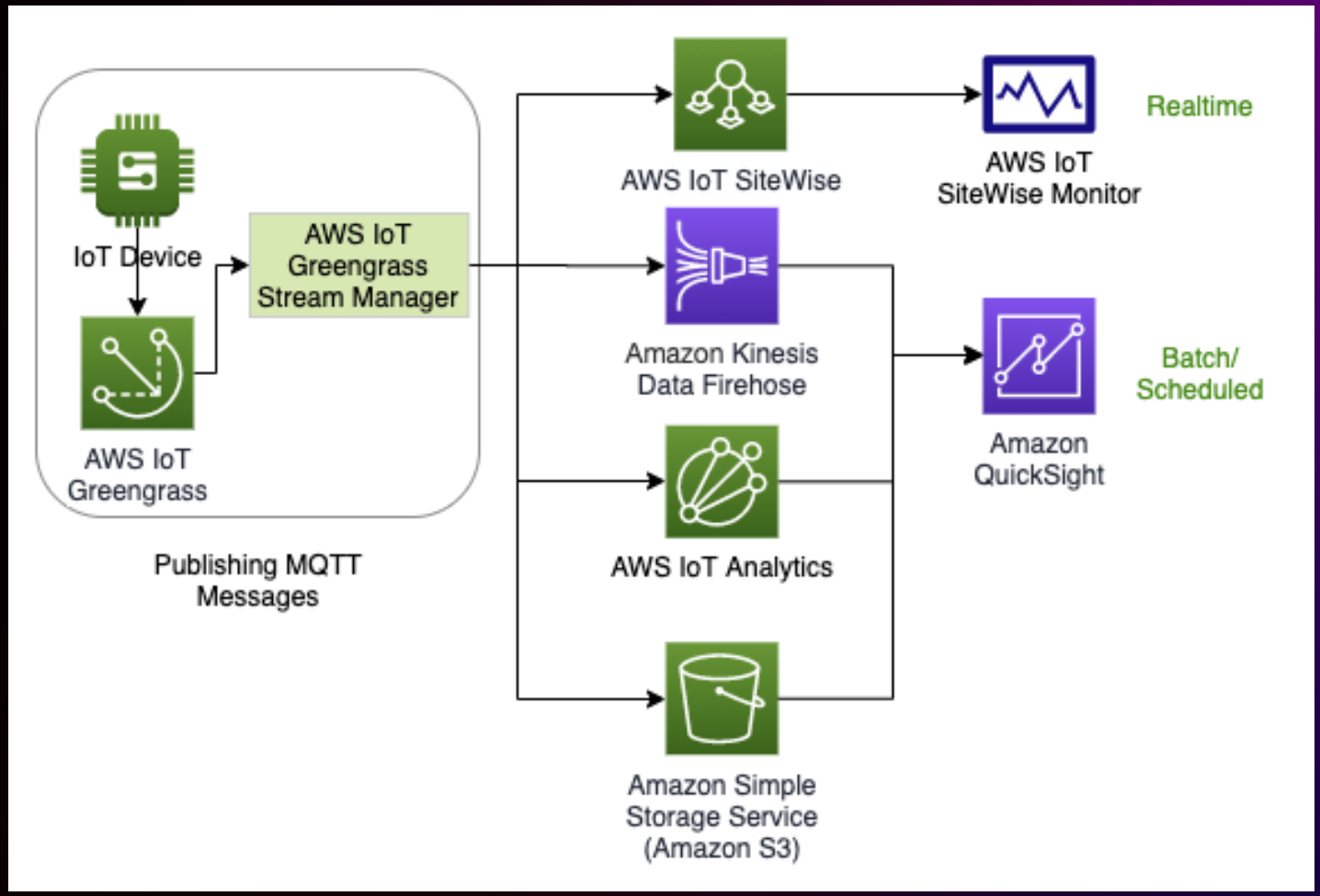
Workshop



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Pattern 1: AWS IoT Greengrass Stream Manager

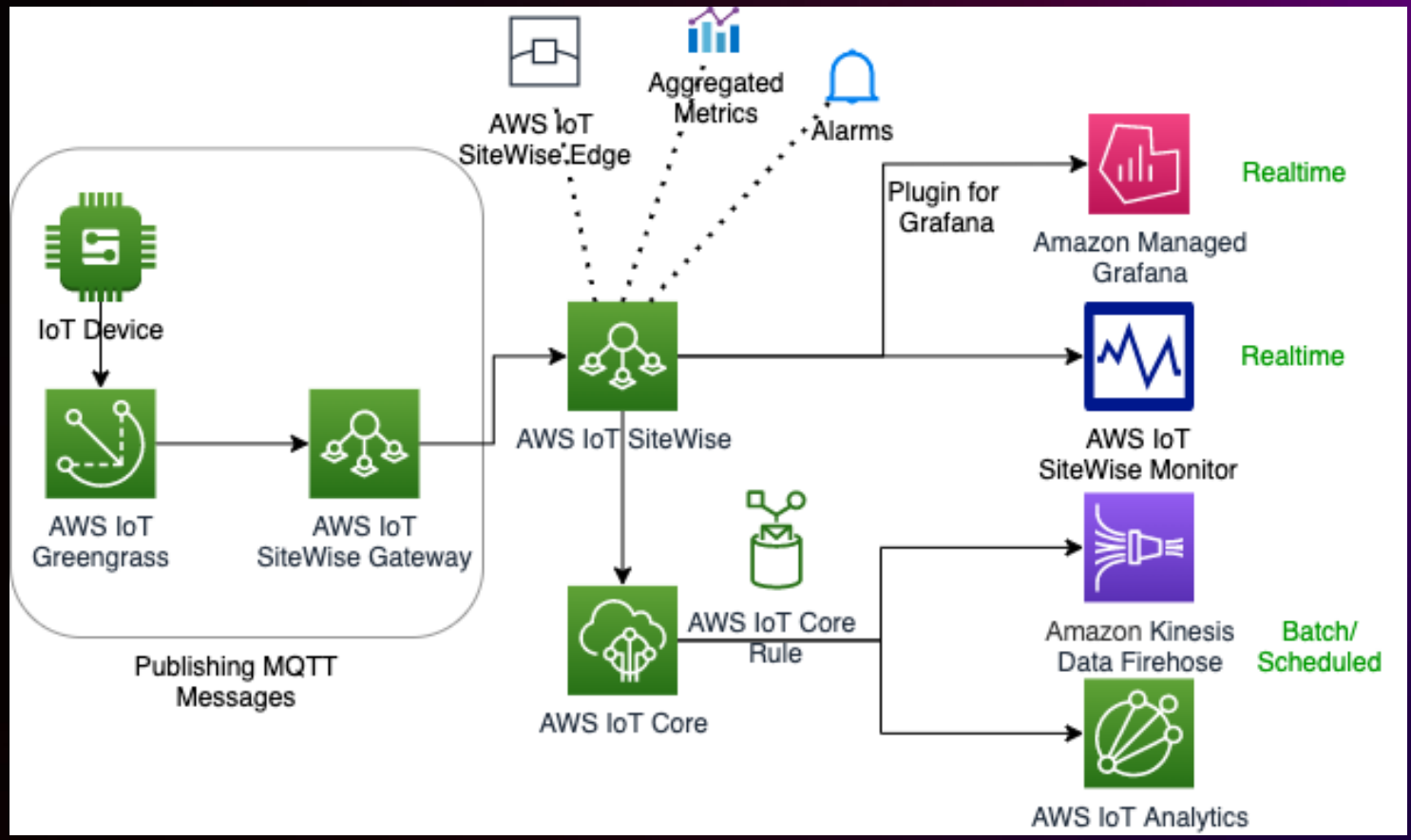
- Do you have an extremely high volume of data?
- Do you want flexibility to operate in multiple work environments?
- Are you looking for a cost-effective solution?



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Pattern 2: AWS IoT SiteWise

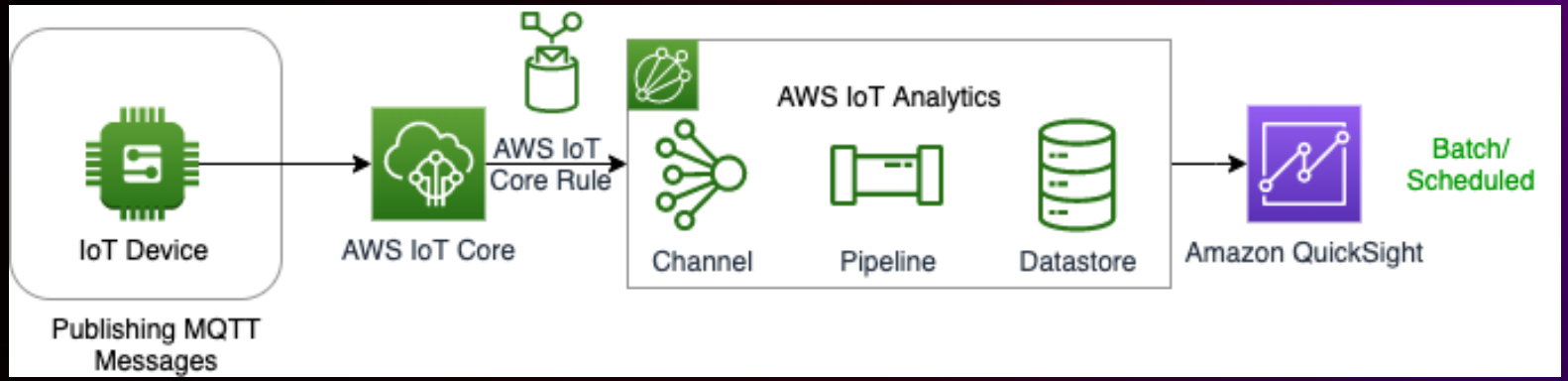
- Are you looking to collect, organize, and analyze data from industrial equipment at scale?
- Is there a need for a fully managed reporting solution?
- Are you looking to monitor and process equipment data locally?



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Pattern 3: AWS IoT Core, AWS IoT Analytics, and Amazon QuickSight

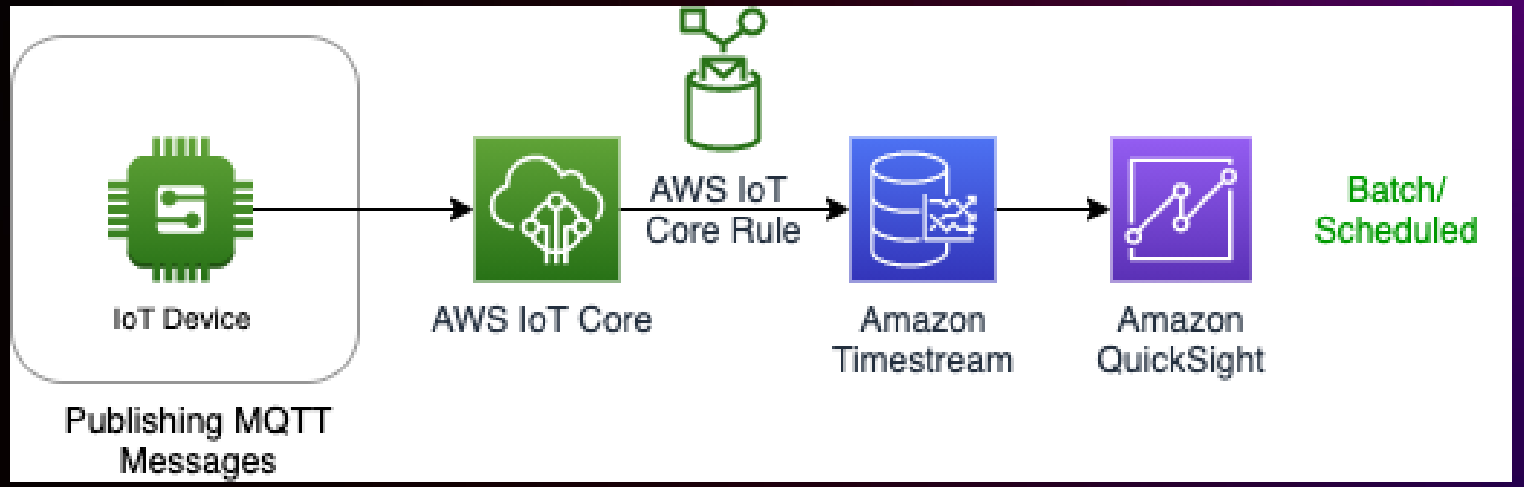
- Are you looking to run analytical queries on your IoT data?
- Do you need to perform analytics on contiguous time windows?
- Do you want to reduce your operational overhead?



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Pattern 4: Amazon Timestream

- Do you want to query over rolling time windows?
- Do you want to perform specialized analytical functions?
- Do you need to retrieve data at variable levels of granularity?



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Pattern 5: AWS IoT Core, Amazon Kinesis, and QuickSight

- Do you want to analyze large volumes of data in near real time?
- Do you want to have actional insights on your near real-time data?



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Pattern 6: Amazon OpenSearch Service and Amazon Managed Grafana

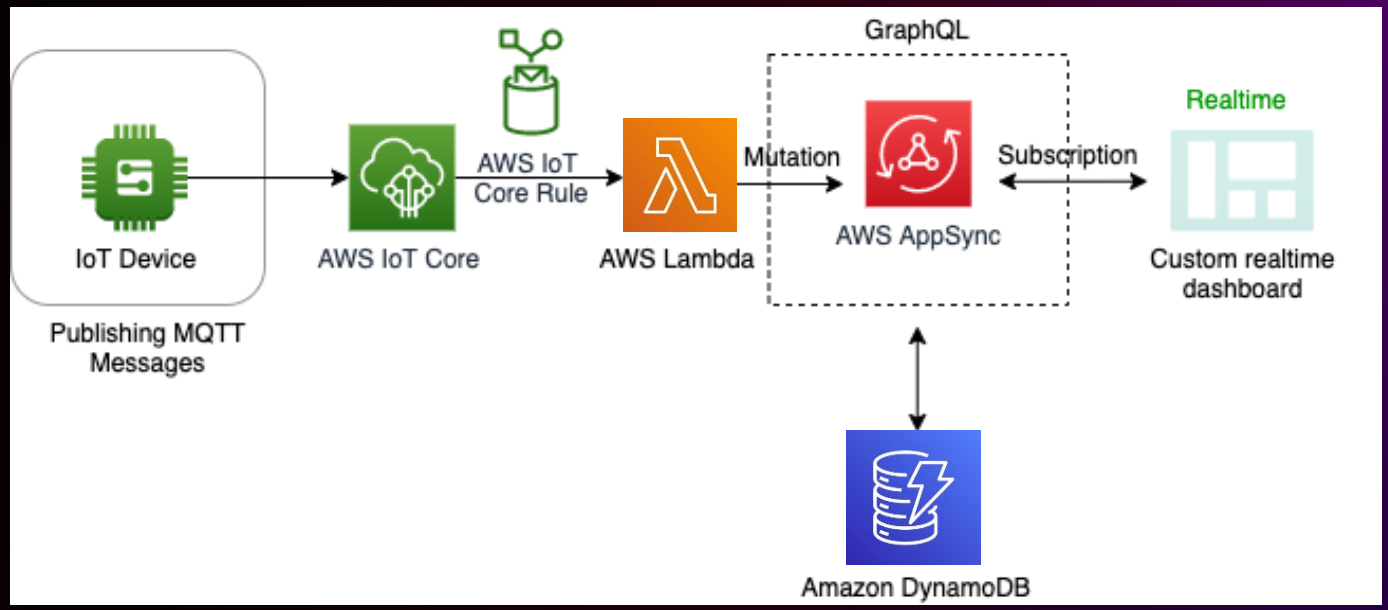
- Are you looking for near real-time searching and monitoring?



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Pattern 7: AWS IoT Core, Lambda, and DynamoDB

- Do you have a need to build a custom real-time dashboard?
- Do you want a configurable frontend client?
- Do you want to store your IoT data for post-processing?



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Considerations and caveats

- No one size fits all: Every use case is different
- Costs: Every pattern has its own cost model
- Some services are region-specific

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Learn more

- Blog post: 7 patterns for IoT data ingestion and visualization
- AWS Well-Architected – helps you to choose a solution that best fits from a management, performance, cost, and operations perspective

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Thank you!



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