
AWS
re:Invent

MFG301

3M optimizes global materials tracing with AWS

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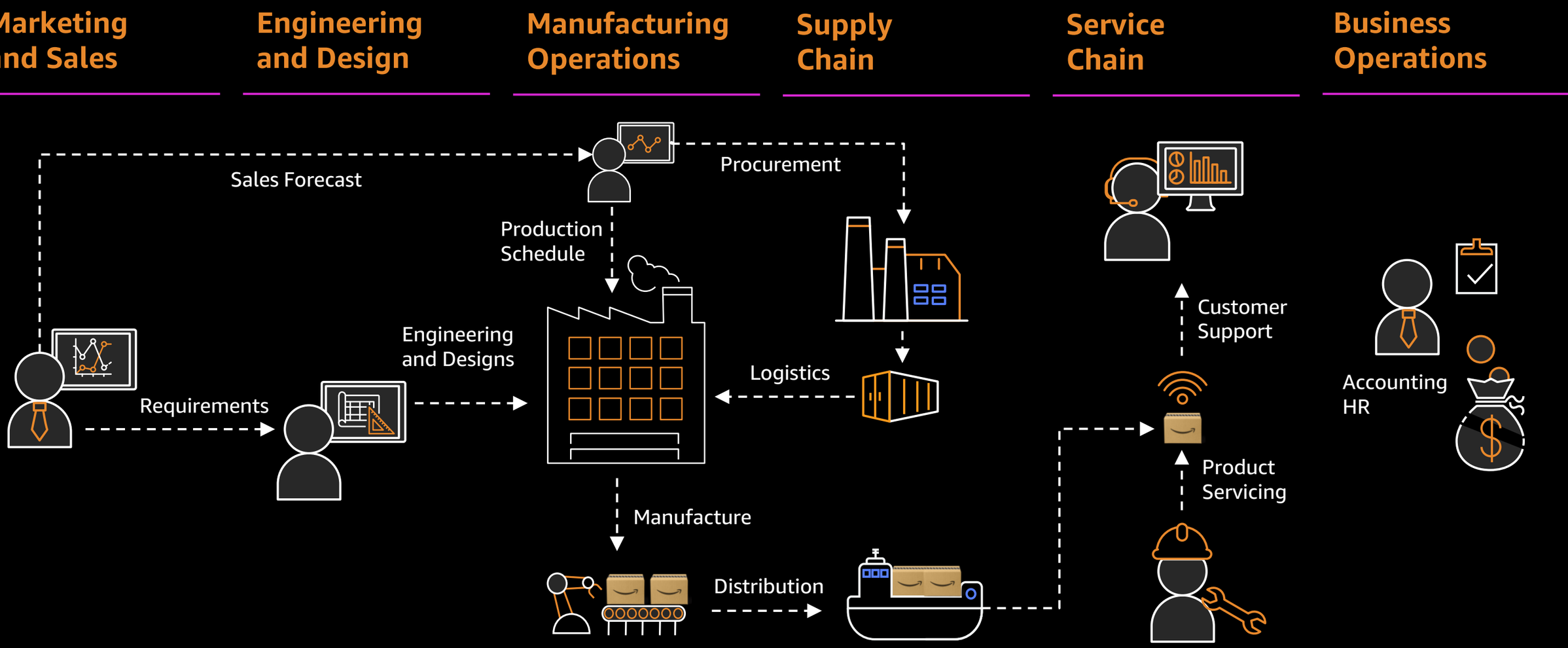
AWS in manufacturing



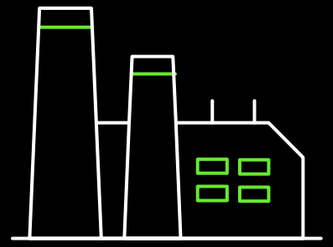
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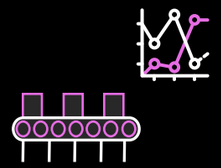
Manufacturing workloads



Smart Factory use cases



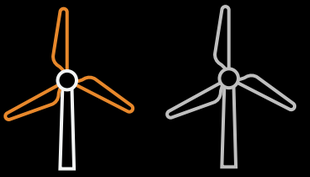
Production / process optimization



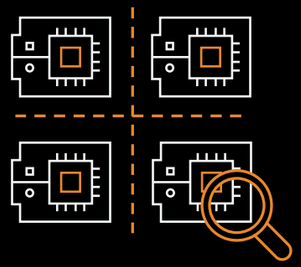
Preventive / predictive maintenance for machines



Machine as a service



Digital twin



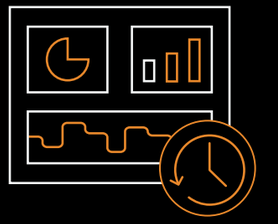
Computer vision for quality control



Automated material management



Track and trace



OEE visualization

3M Spider



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3M Spider



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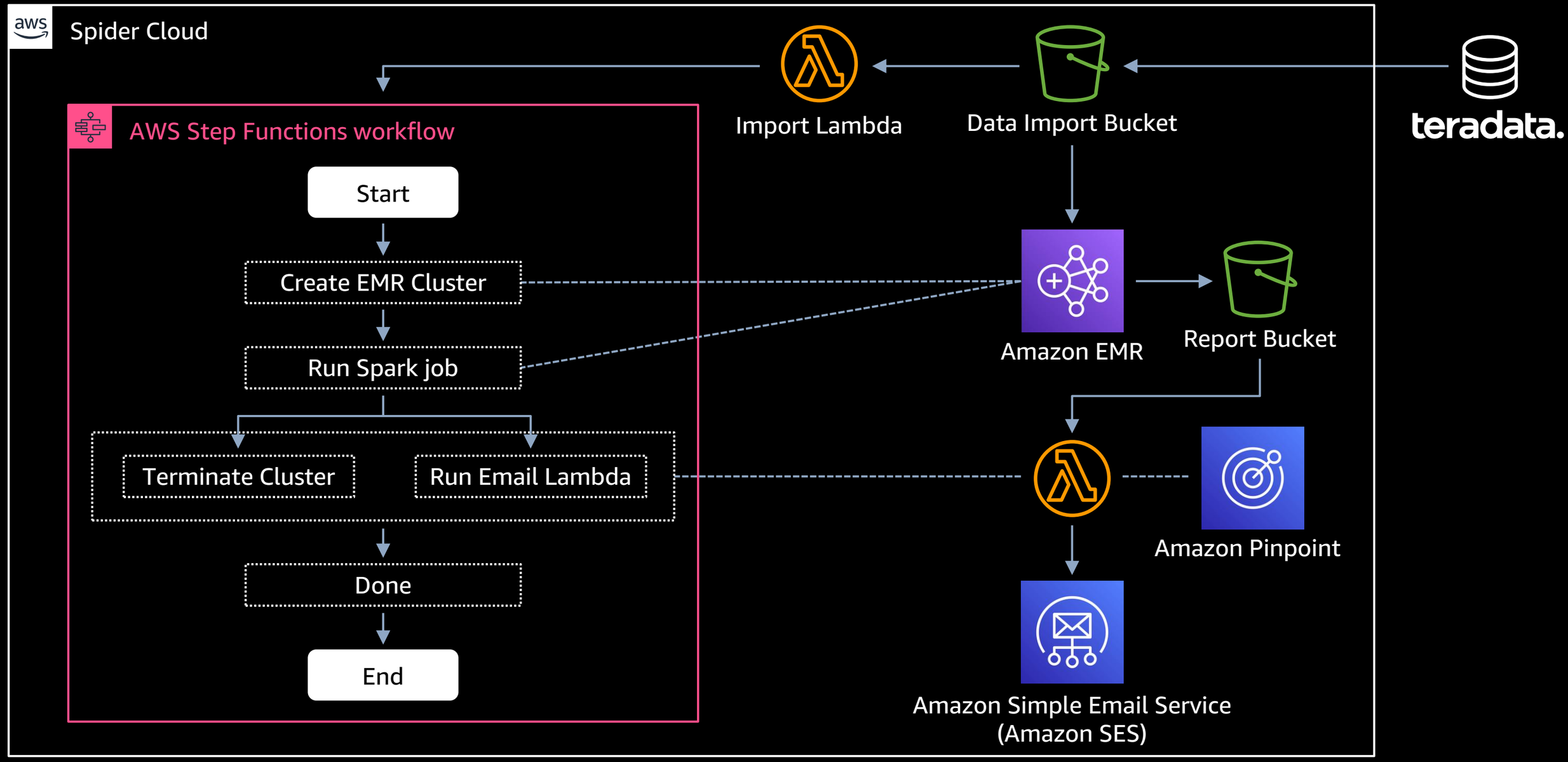
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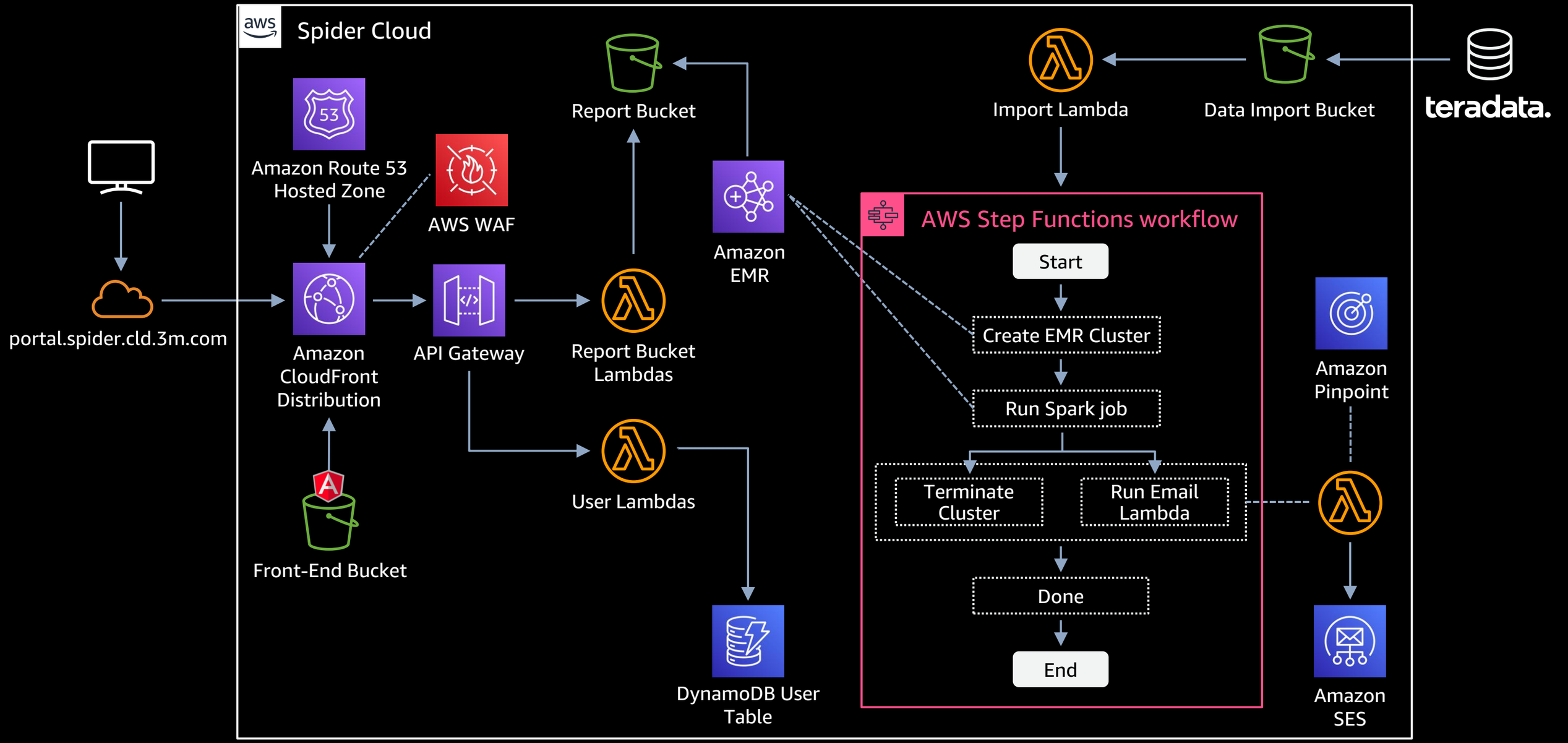
Scrum iterative development process



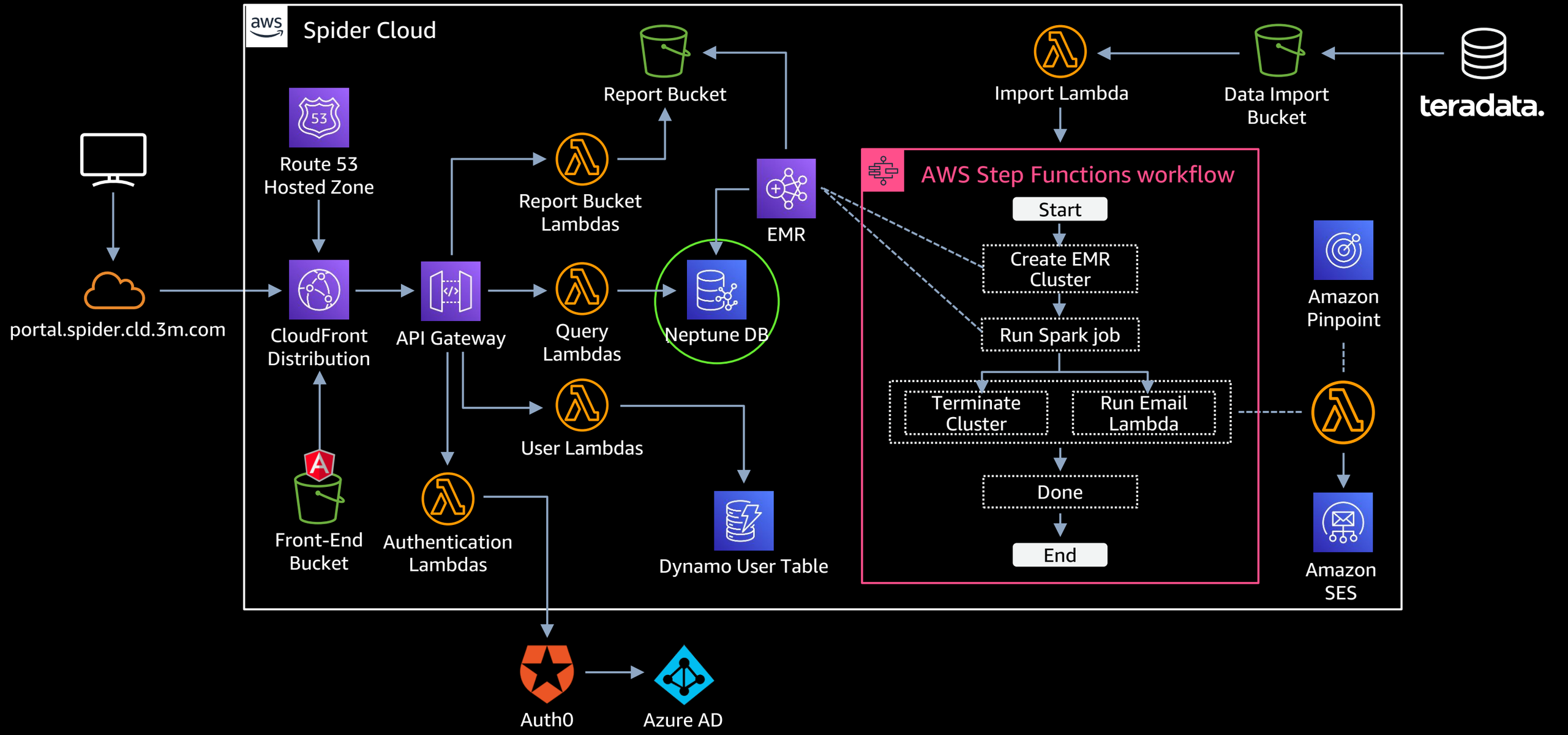
The “skateboard”



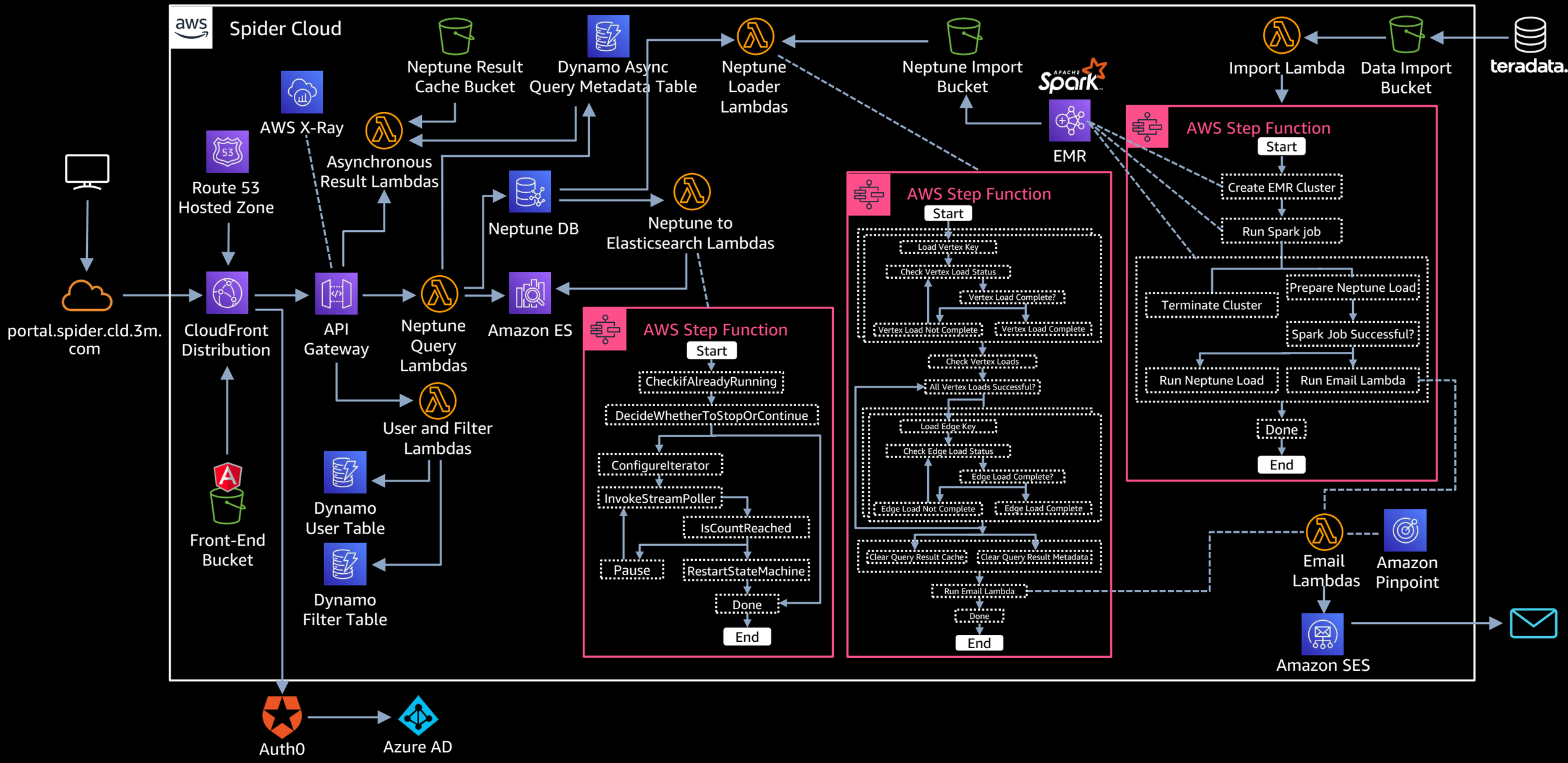
The “scooter”


Spider Cloud
Report Bucket
Import Lambda
Data Import Bucket
teradata.
Amazon Route 53 Hosted Zone
AWS WAF
Amazon EMR
AWS Step Functions workflow
Start
Create EMR Cluster
Run Spark job
Terminate Cluster
Run Email Lambda
Done
End
portal.spider.cld.3m.com
Amazon CloudFront Distribution
API Gateway
Report Bucket Lambdas
Amazon Pinpoint
User Lambdas
Front-End Bucket
DynamoDB User Table
Amazon SES

The “bicycle”


Spider Cloud
Report Bucket
Import Lambda
Data Import Bucket
teradata.
Route 53 Hosted Zone
Report Bucket Lambdas
EMR
AWS Step Functions workflow
Start
Create EMR Cluster
Run Spark job
Terminate Cluster
Run Email Lambda
Done
End
Amazon Pinpoint
portal.spider.cld.3m.com
CloudFront Distribution
API Gateway
Query Lambdas
Neptune DB
User Lambdas
Front-End Bucket
Authentication Lambdas
Dynamo User Table
Amazon SES
Auth0
Azure AD

The “car”


Spider Cloud
Neptune Result Cache Bucket
Dynamo Async Query Metadata Table
Neptune Loader Lambdas
Neptune Import Bucket
Import Lambda
Data Import Bucket
teradata.
AWS X-Ray
Route 53 Hosted Zone
Asynchronous Result Lambdas
EMR
Neptune DB
Neptune to Elasticsearch Lambdas
portal.spider.cld.3m.com
CloudFront Distribution
API Gateway
Neptune Query Lambdas
Amazon ES
User and Filter Lambdas
Dynamo User Table
Dynamo Filter Table
Front-End Bucket
Auth0
Azure AD
AWS Step Function
Start
CheckifAlreadyRunning
DecideWhetherToStopOrContinue
ConfigureIterator
InvokeStreamPoller
IsCountReached
Pause
RestartStateMachine
Done
End
AWS Step Function
Start
Load Vertex Key
Check Vertex Load Status
Vertex Load Complete?
Vertex Load Not Complete
Vertex Load Complete
Check Vertex Loads
All Vertex Loads Successful?
Load Edge Key
Check Edge Load Status
Edge Load Complete?
Edge Load Not Complete
Edge Load Complete
Clear Query Result Cache
Clear Query Result Metadata
Run Email Lambda
Done
End
AWS Step Function
Start
Create EMR Cluster
Run Spark job
Terminate Cluster
Prepare Neptune Load
Spark Job Successful?
Run Neptune Load
Run Email Lambda
Done
End
Email Lambdas
Amazon Pinpoint
Amazon SES

Thank you!



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