AWS re:Invent

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ANT 217

Introducing Amazon MSK Serverless

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Amazon MSK

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Agenda

What is real-time analytics and data streaming?

Why you should use real-time analytics?

Common use cases

Enabling streaming and real-time analytics

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Why data streaming

To create value companies must derive insights from a variety of data sources that are producing data at high velocity and volume

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Data warehouse

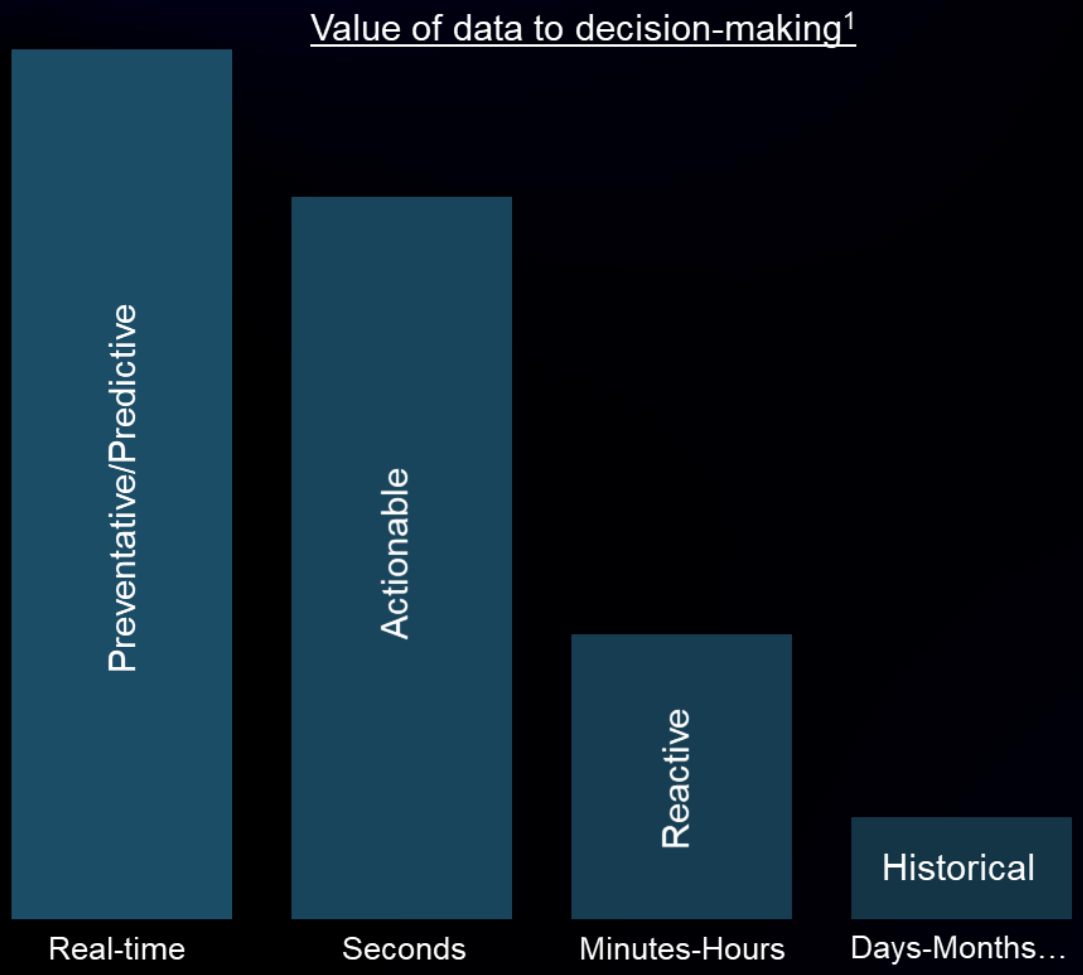


Data Lake

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The value of data diminishes over time

Data have a short shelf life of actionability[1]. AWS lets you act on that data as fast as the market dictates.



58%

Percentage of those surveyed who say their organization saw **significant increases in customer retention and loyalty** as a result of using real-time customer analytics[2]

75%

Percentage of enterprise organizations surveyed that believe **untimely data inhibited business opportunities**[3]

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Why data streaming

real-time

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Data warehouse



Data Lake



Data Streams

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Apache Kafka

- Open Source Event Streaming Platform
- Low latency and high throughput
- Fans out to any number of consumers
- Enables use-cases such as messaging, event-stream processing, and more…

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Amazon Managed Streaming for Apache Kafka (Amazon MSK)

A fully managed service for Apache Kafka and Kafka Connect



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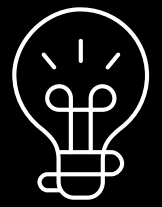
What Amazon MSK does for you



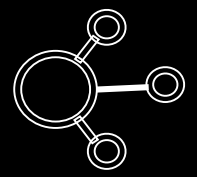
Makes Apache Kafka more accessible to your organization



Drives best practices through design, defaults, and automation



Allows developers to focus more on application development and less on infrastructure management



Amazon MSK is committed to improving open-source Apache Kafka

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Key Features

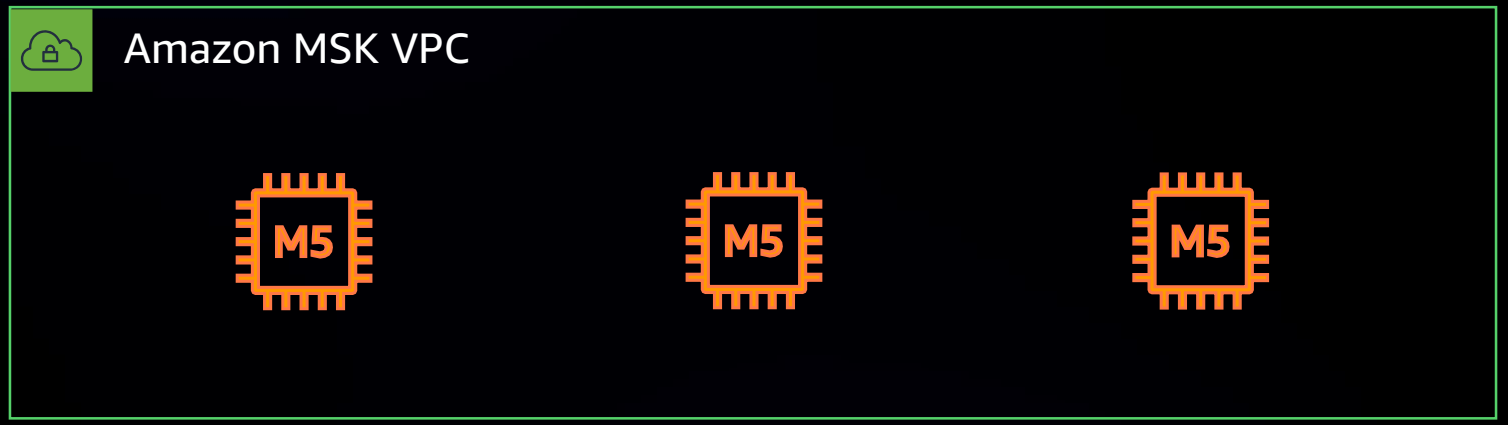


Highly secure

Protect your data with multiple levels of security, including VPC network isolation, encryption at-rest and in-transit, and more

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Highly Secure



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Key Features



Highly secure

Protect your data with multiple levels of security, including VPC network isolation, encryption at-rest and in-transit, and more



Highly available

Take advantage of multi-AZ replication within an AWS Region

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Highly Available



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Key Features



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Protect your data with multiple levels of security, including VPC network isolation, encryption at-rest and in-transit, IAM access control



Highly available

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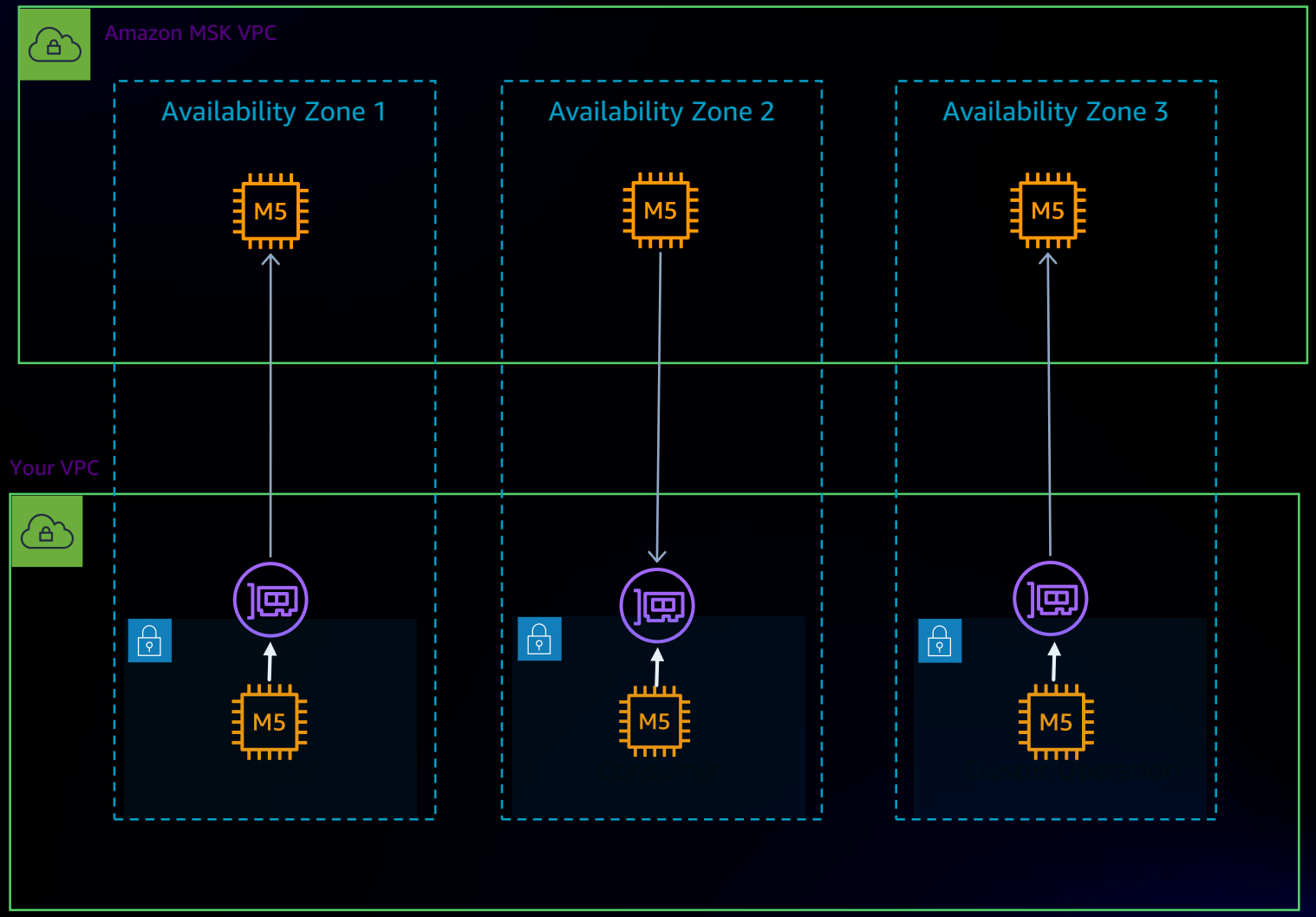


Private Connectivity

Data stays within the AWS network without being exposed to the public internet

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Private Connectivity



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Key Features



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Highly available

Take advantage of multi-AZ replication within an AWS Region



Private Connectivity

Data stays within the AWS network without being exposed to the public internet



Fully compatible

Run your existing Apache Kafka applications on AWS without changes to source code

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Key Features



Deep AWS integrations

AWS IoT as a data source, AWS Lambda as a data consumer, Schema management with AWS Glue Schema Registry, Stream processing with Amazon Kinesis Data Analytics

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Key Features



Deep AWS integrations

AWS IoT as a data source, AWS Lambda as a data consumer, Schema management with AWS Glue Schema Registry, Stream processing with Amazon Kinesis Data Analytics



Scalability

Add brokers, change broker sizes, add more storage

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Key Features



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AWS IoT as a data source, AWS Lambda as a data consumer, Schema management with AWS Glue Schema Registry, Stream processing with Amazon Kinesis Data Analytics



Scalability

Add brokers, change broker sizes, add more storage



Observability

Monitor logs and metrics via Amazon CloudWatch or extract JMX metrics with Open Monitoring for Prometheus

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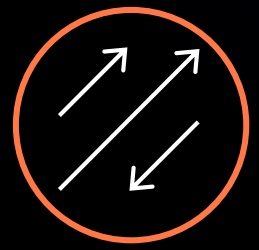
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Scalability

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Observability

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Rolling version upgrades

Upgrade your Kafka versions without any downtime for your clusters

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But....

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Customer Feedback

“We have sales days every month, and we have to keep rescaling our clusters based on demand. Having an autoscaling feature will reduce our operational overhead.”

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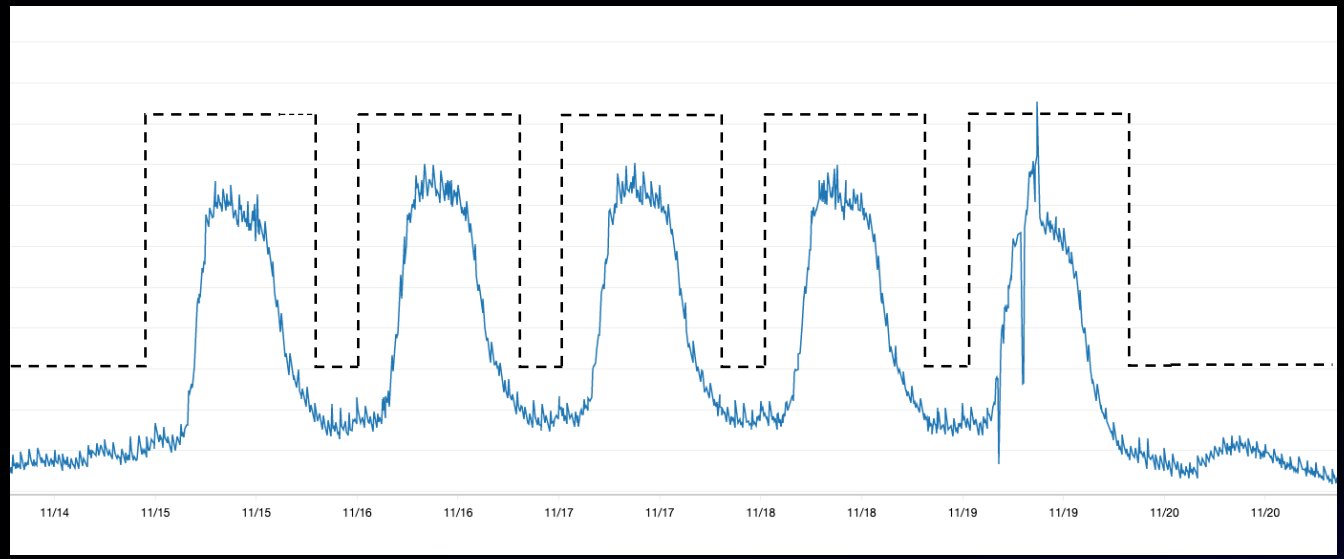
Customer Feedback

“We would like the ability to rebalance after scaling up or down with MSK.”

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Feedback

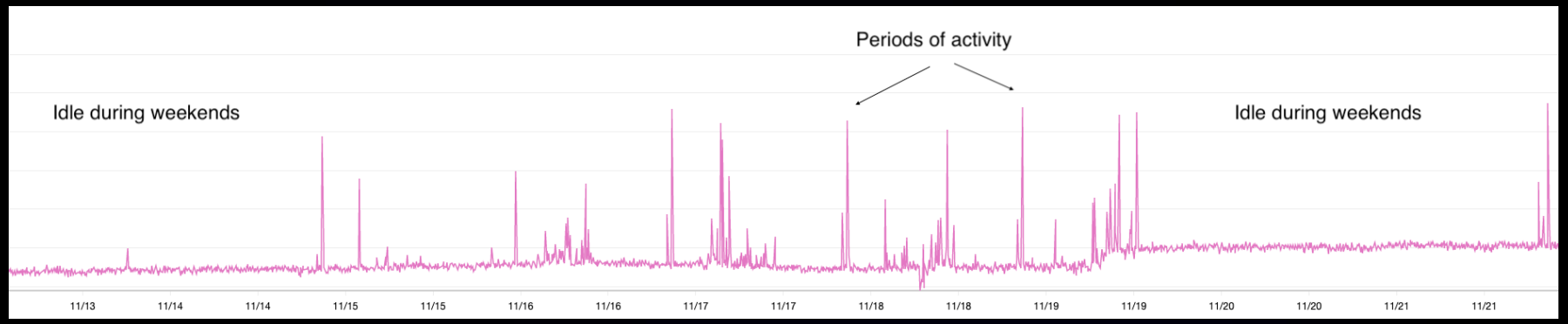
”Our banking application gets used mostly during business hours. We have to scale our cluster up and down to stay cost-efficient.”



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Feedback

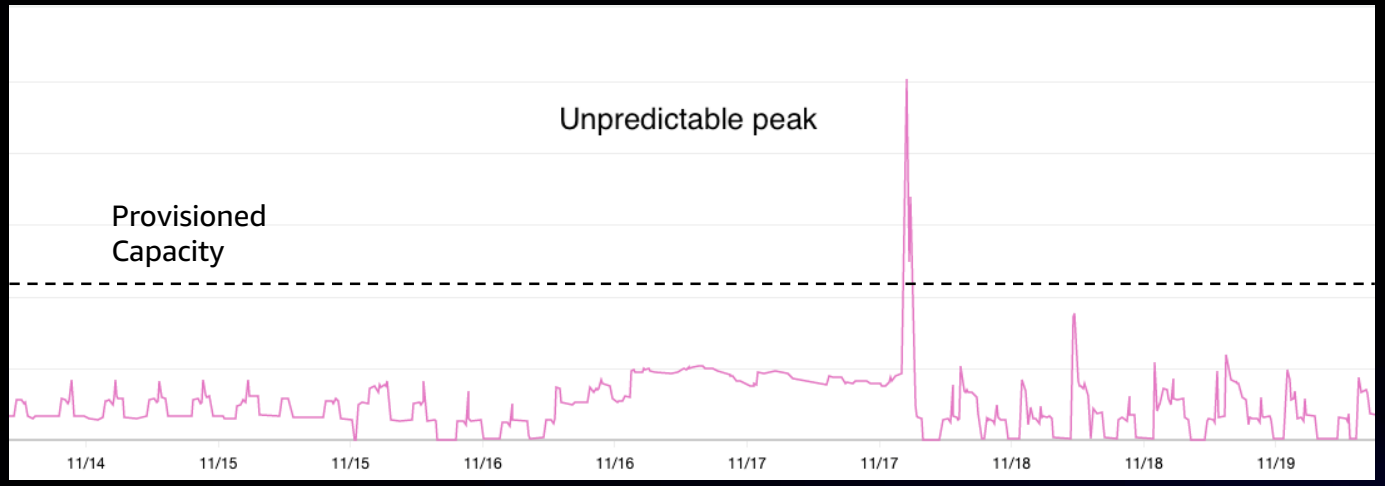
“We use our clusters sporadically for development and testing and would benefit from on-demand capacity.”



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Feedback

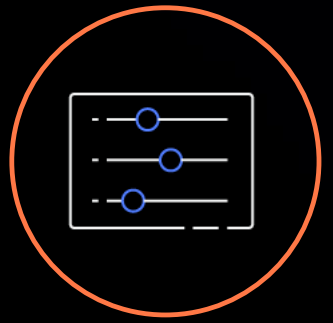
“Our workload has unpredictable min/maxes, and if we can scale out and scale in as needed we will be able to avoid bad customer experiences.”



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Summary







- Autoscaling
- On-demand
- Partition rebalancing
- Cost effective

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Introducing

Amazon MSK Serverless

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Key features



No servers to manage

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Key features



No servers to manage

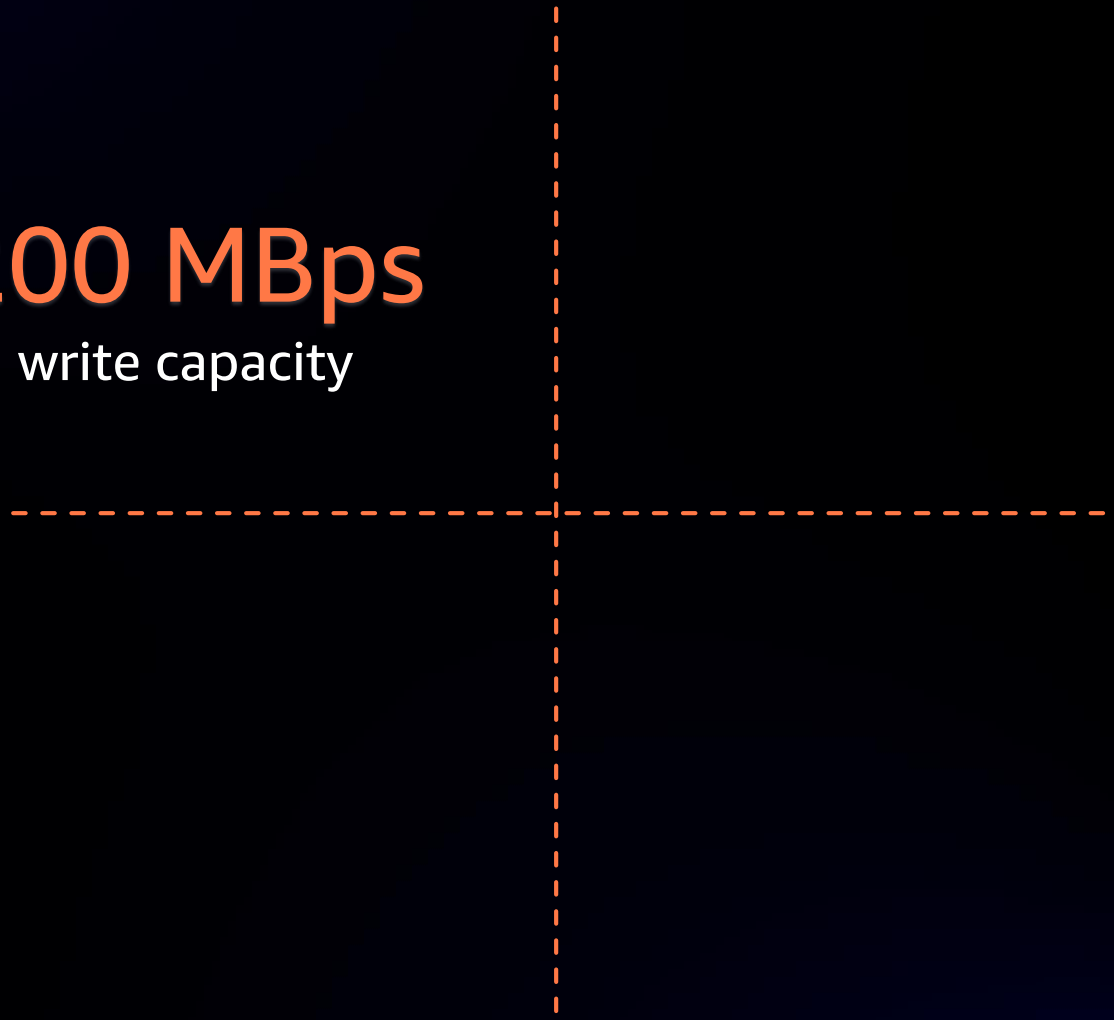


On-demand streaming capacity

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200 MBps

write capacity



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200 MBps
write capacity

400 MBps
read capacity

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200 MBps
write capacity

400 MBps
read capacity

5 MBps
write capacity

10 MBps
write capacity

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Key features



No servers to manage



On-demand streaming capacity



Throughput based pricing

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Throughput-based pricing

Pricing Dimension	Unit Price
Cluster cost	$0.75 per hour
Data In	$0.10 per GB
Data Out	$0.05 per GB
Storage	$0.10 per GB-month
Partitions	$0.0015 per hour

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Key features



No servers to manage



Fully compatible



On-demand streaming capacity



Pay-for-throughput pricing

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Key features



No servers to manage



Fully compatible



On-demand streaming capacity



Same security as MSK

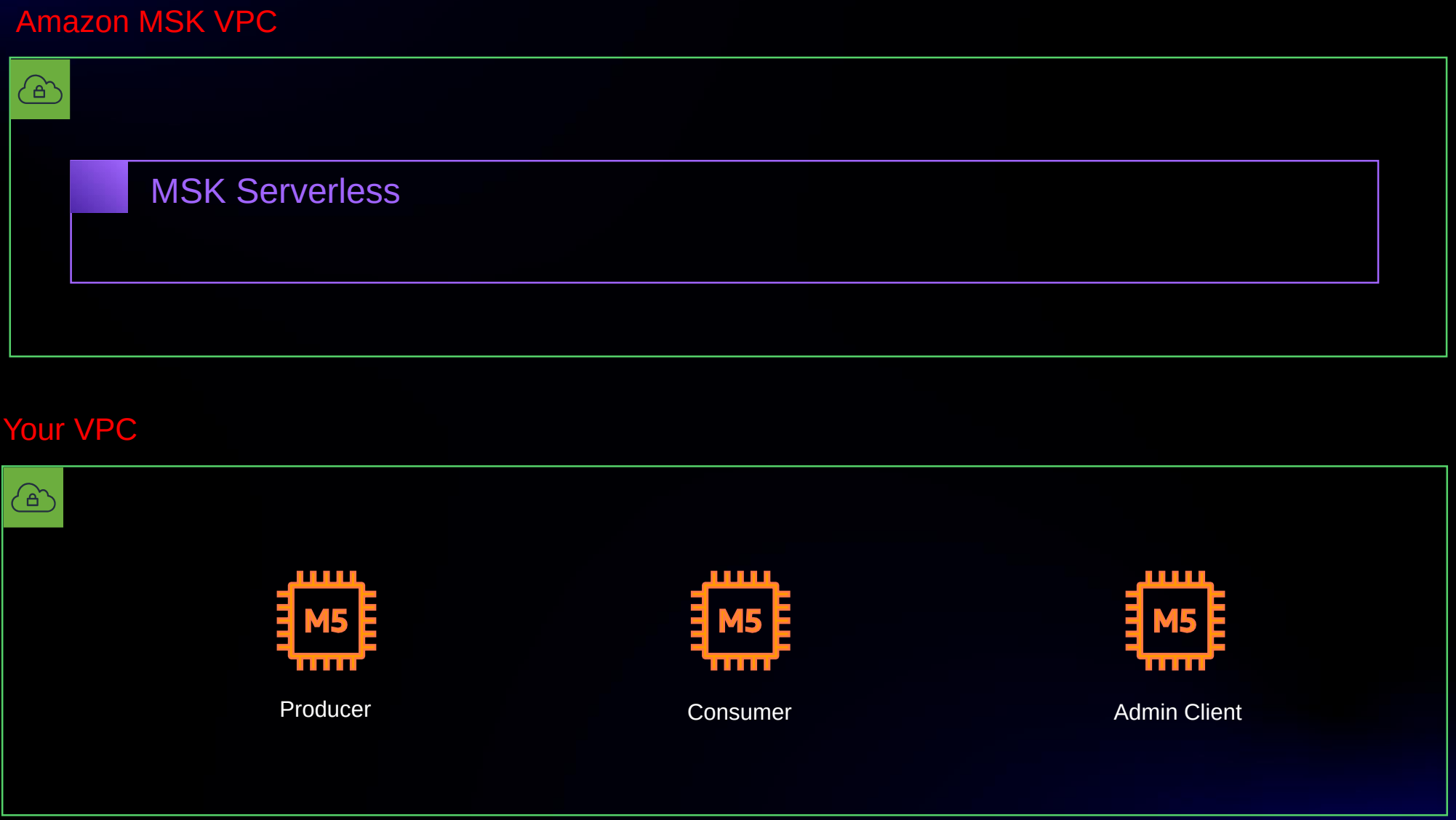


Pay-for-throughput pricing

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High-level architecture



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Key features



No servers to manage



Fully compatible



On-demand streaming capacity



Same security as MSK



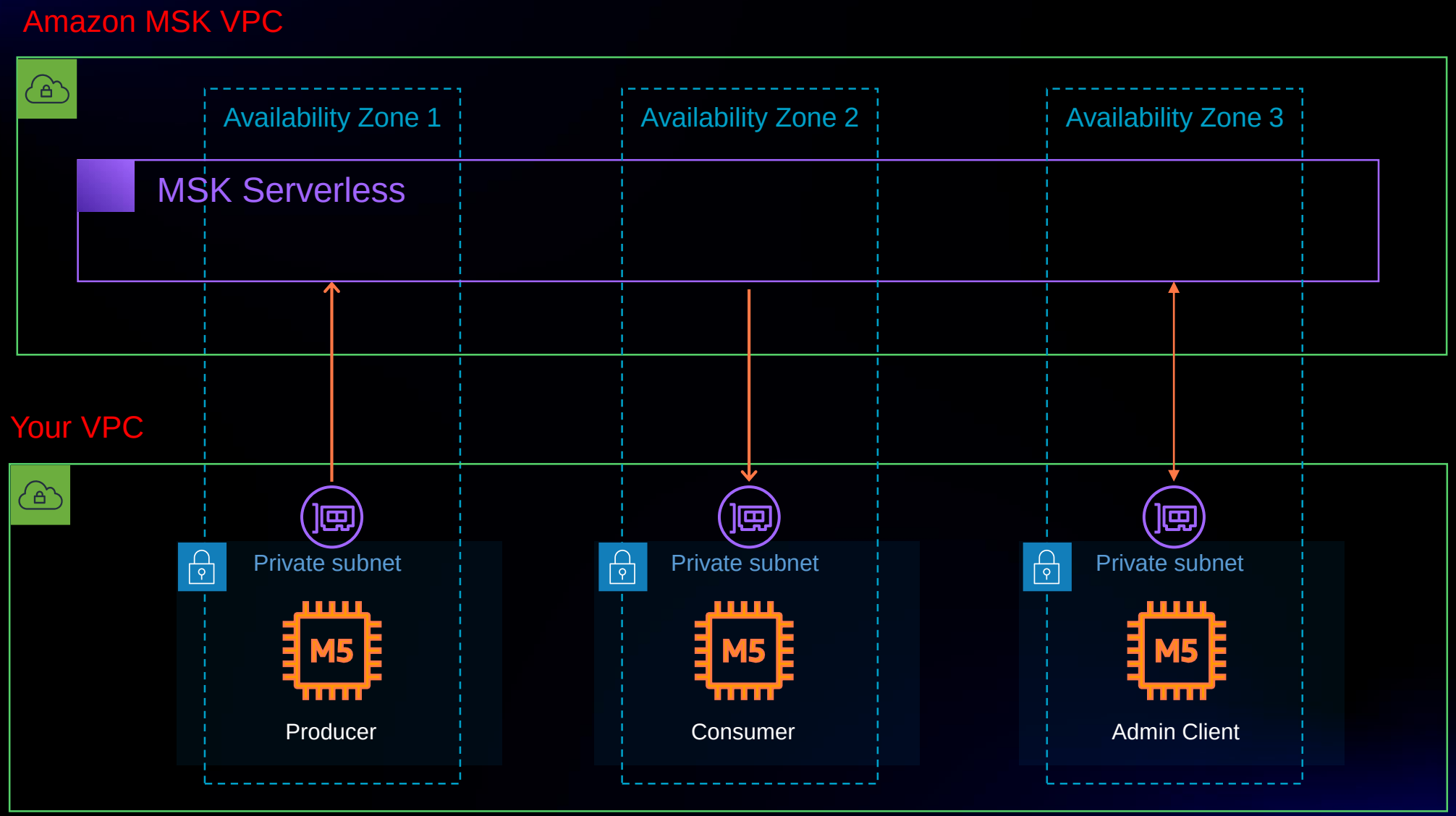
Pay-for-throughput pricing



Same high availability

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High-level architecture



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Key Benefits



Simple to use

Get started with a few clicks and with existing applications



Lowers operational overhead

Use engineering hours to solving your customer problems



Cost effective

Specially for highly variable workloads

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When to use what...

MSK

- Control capacity and configuration
- Stable and predictable workloads
- Large workloads

MSK Serverless

- Offload capacity management
- Specific type of workloads
- Just getting started

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Thank you!

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