AWS re:Invent

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ANT324

Introducing Amazon Kinesis Data Streams On-Demand Mode

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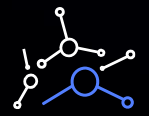
Common streaming-data use cases



Anomaly and fraud detection



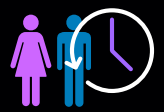
Tailoring customer experience in real time



Empowering IoT analytics



Nourishing marketing campaigns



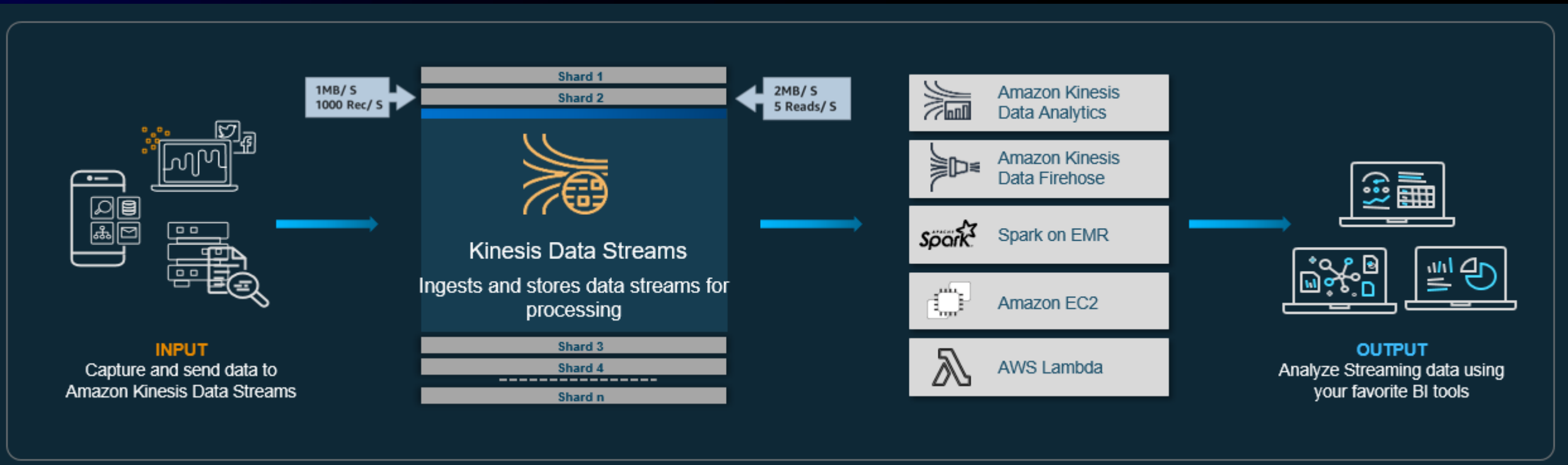
Real-time personalization



Supporting healthcare and emergency services

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Amazon Kinesis Data Streams



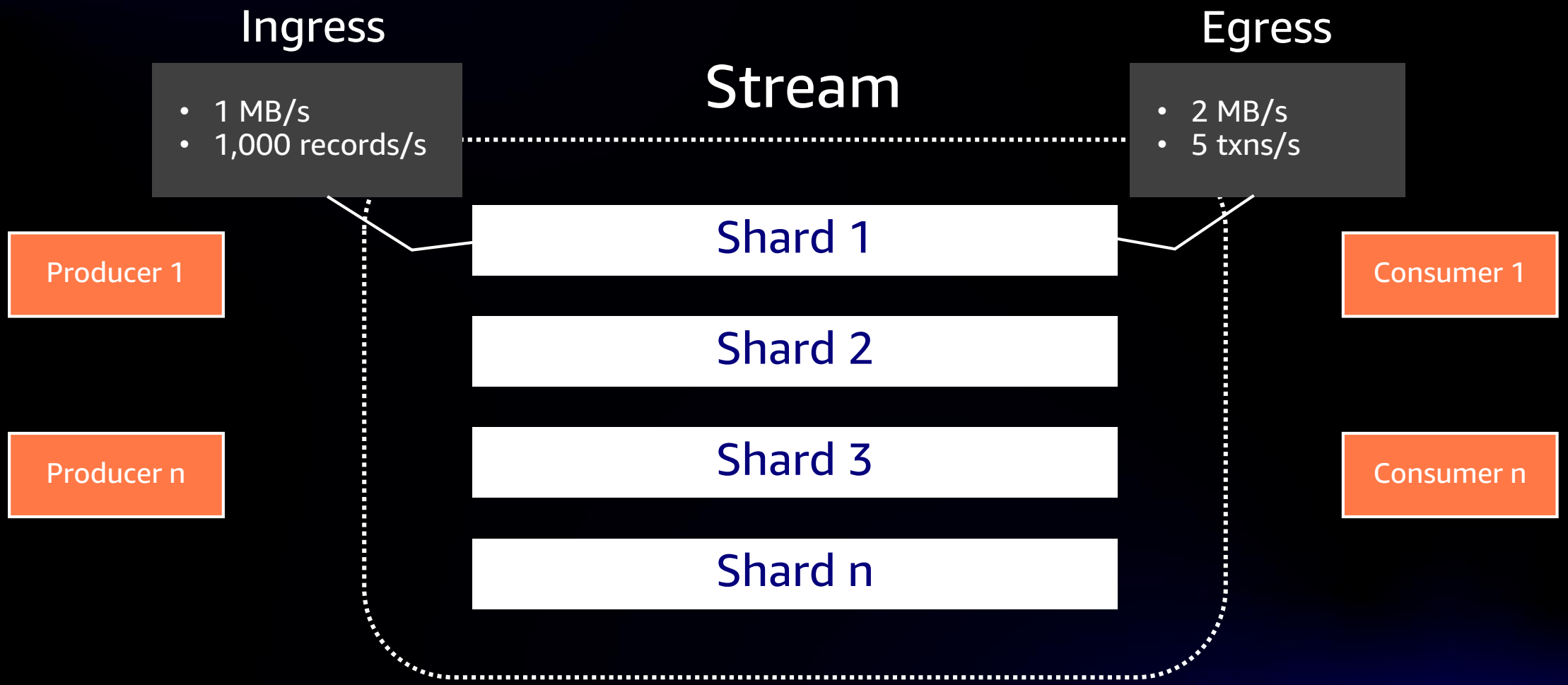
- Easy administration and low cost
- Real-time, elastic performance
- Secure, durable storage
- Available to multiple real-time analytics applications
- Average latency of 200 ms with one standard consumer
- Enhanced Fan Out offers typical average latency of 70 ms

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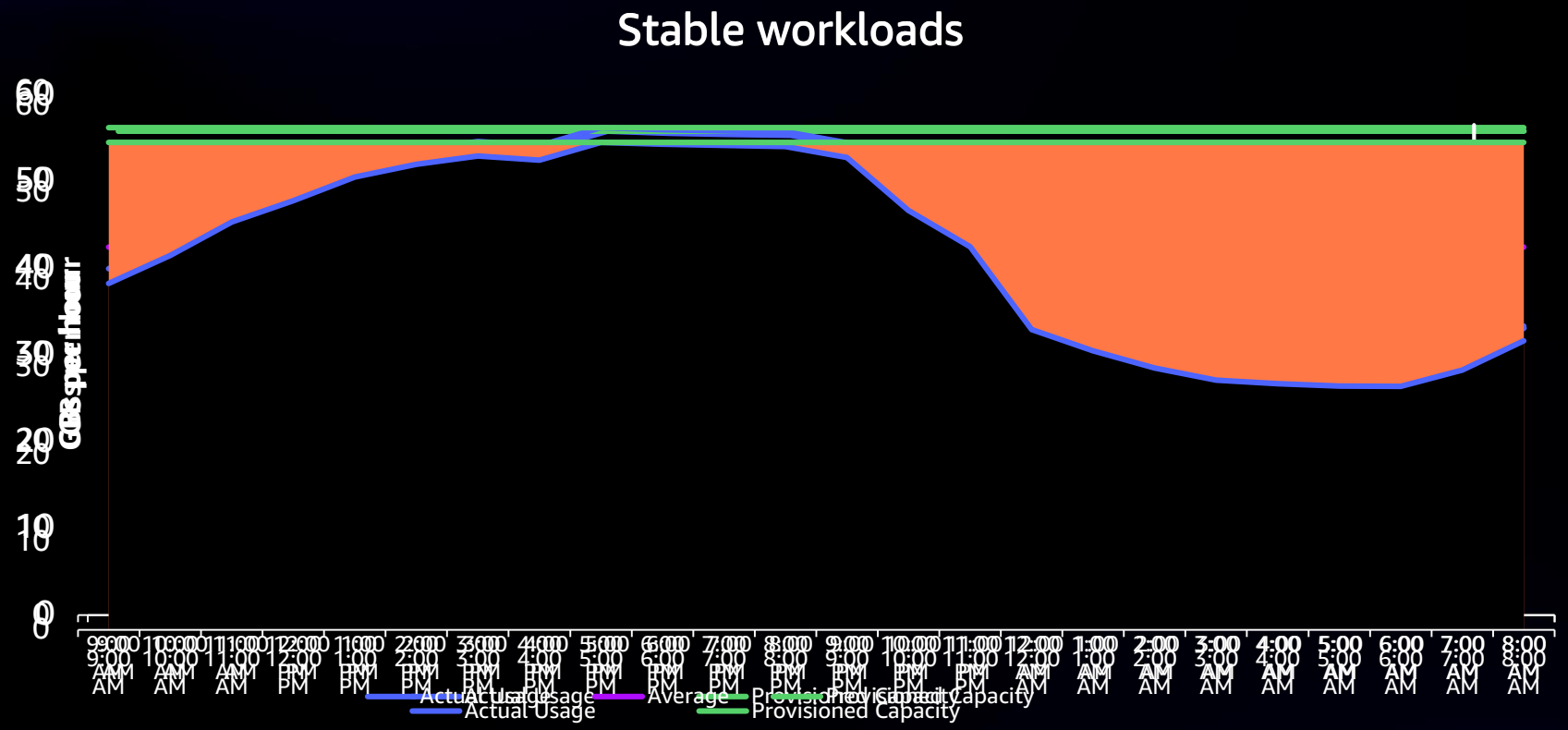
Kinesis Data Streams: Granular provisioning and scaling

START SMALL AND SCALE UP AND SCALE DOWN AS NEEDED



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Stable workloads



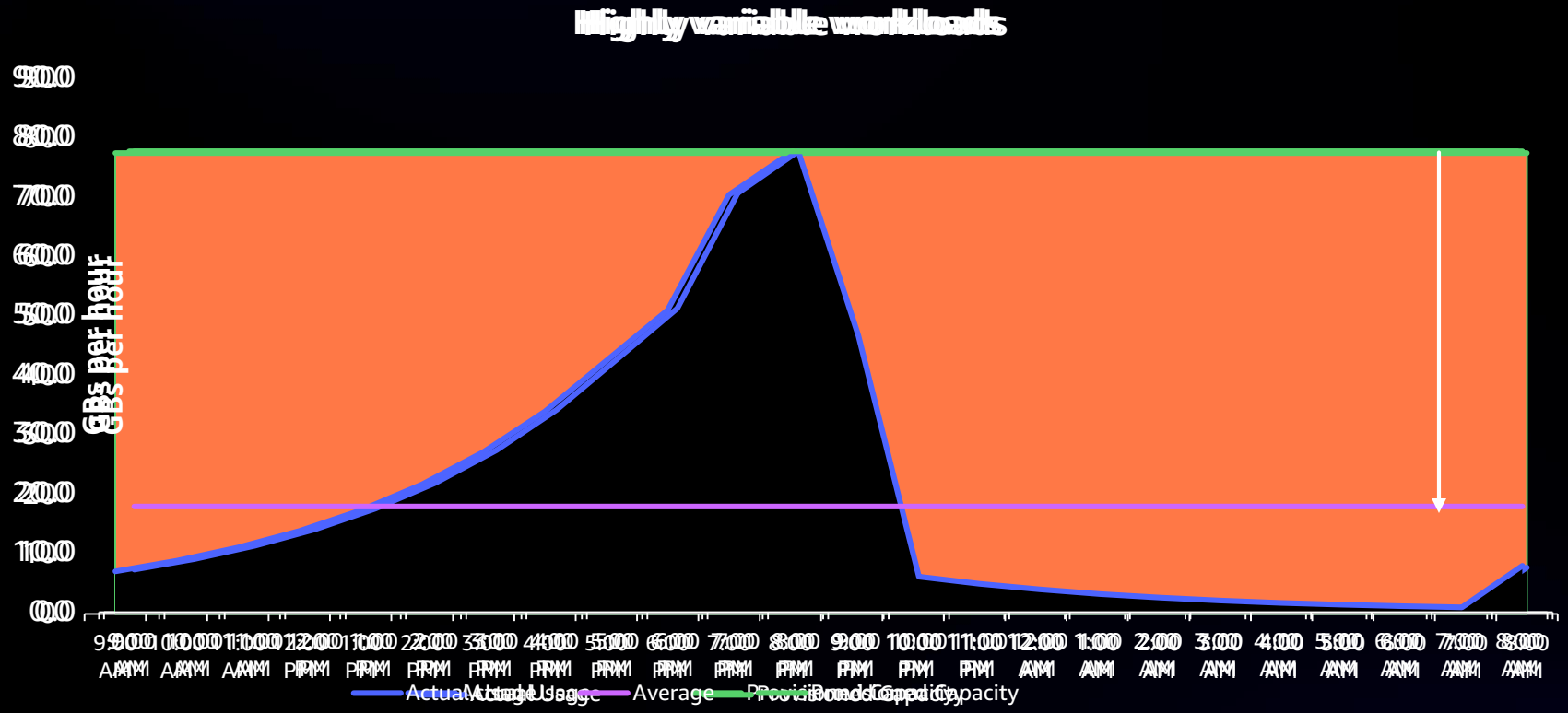
Low peak to average difference

Low wastage of resources

Easy to plan

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Highly variable workloads



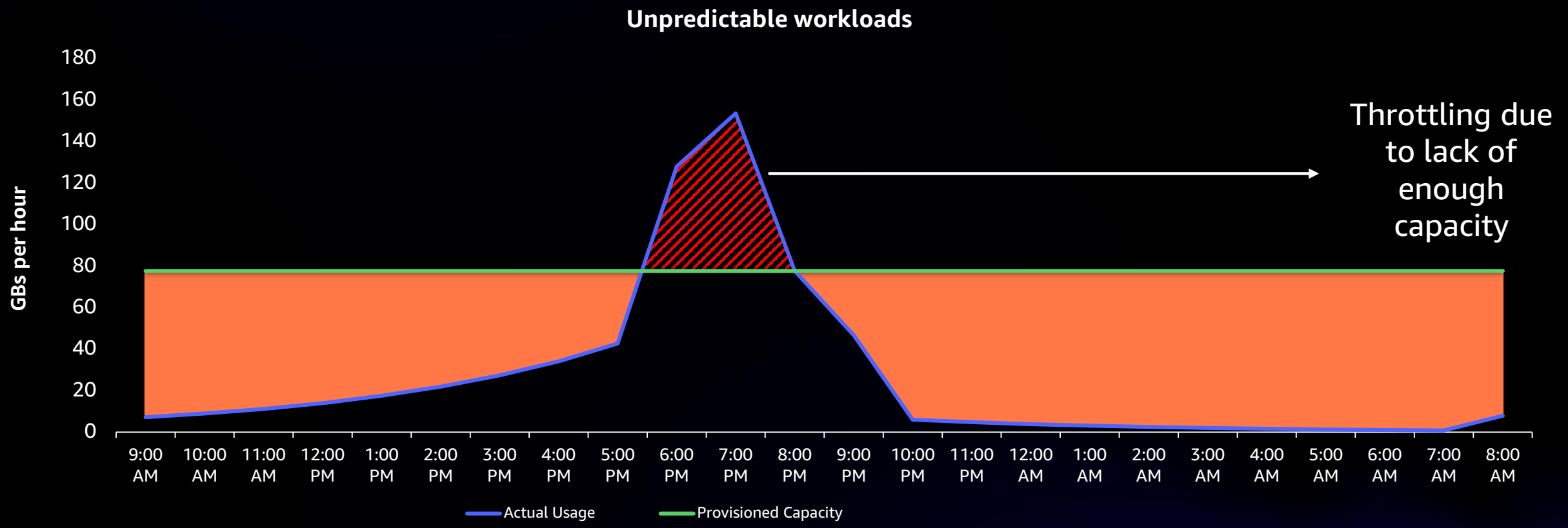
High peak to average difference

High wastage of resources

Requires manual scaling, which can be tricky

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Unpredictable workloads

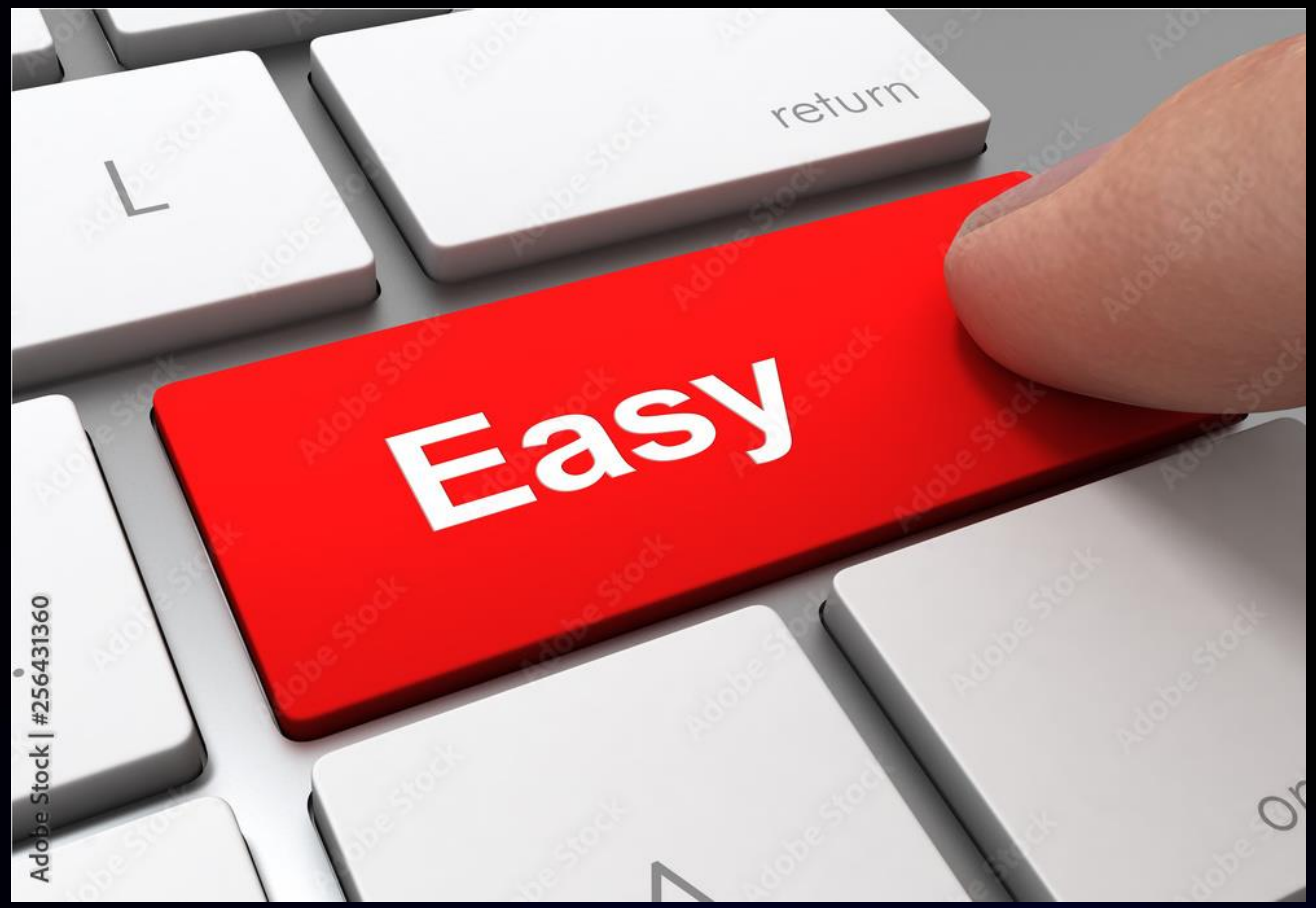


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Customers want an “easy” button for their streaming data applications

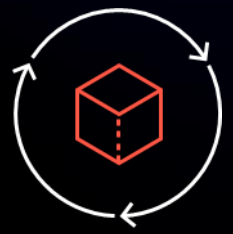
Capacity planning can become challenging when you are operating dozens of workloads, each with different traffic patterns

Customer have asked for a default experience that enables them to get to market faster and reduce total cost of ownership

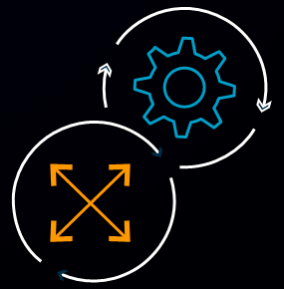


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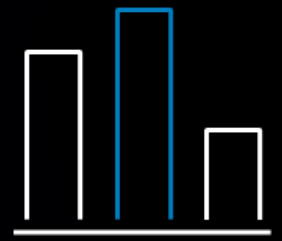
Introducing Kinesis Data Streams On-Demand



Hands-free capacity management



Seamless



Like always, same high performance, availability, and durability

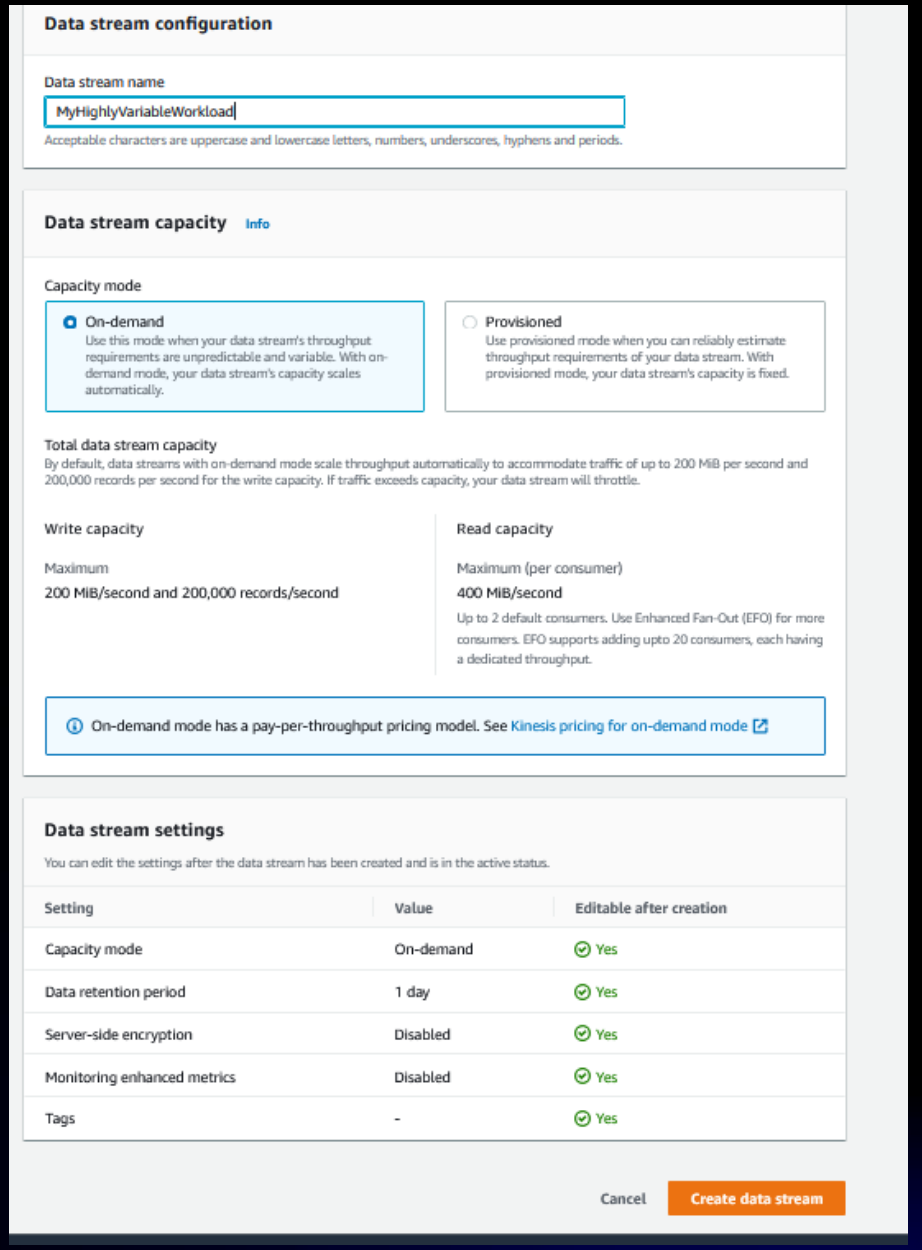


Pay for what you use

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Getting started

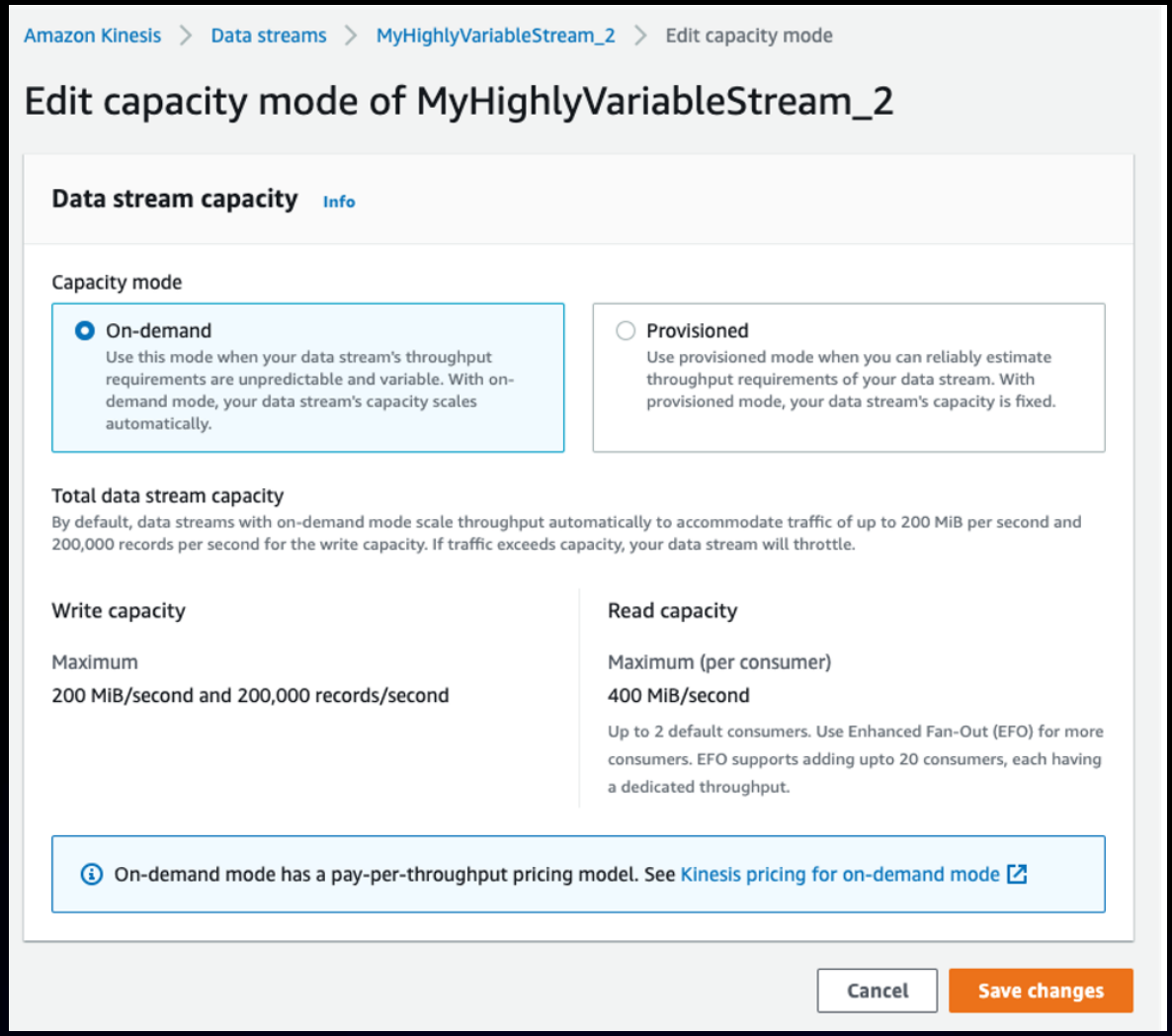
- Create a new stream or switch an existing one
- You can use the same PutRecords or PutRecord APIs to write data
- You can use the same GetRecords and SubscribeToShard APIs to read data
- A shard, like always, provides 1 MB/s and 1,000 records/s for writes and 2 MB/s for reads



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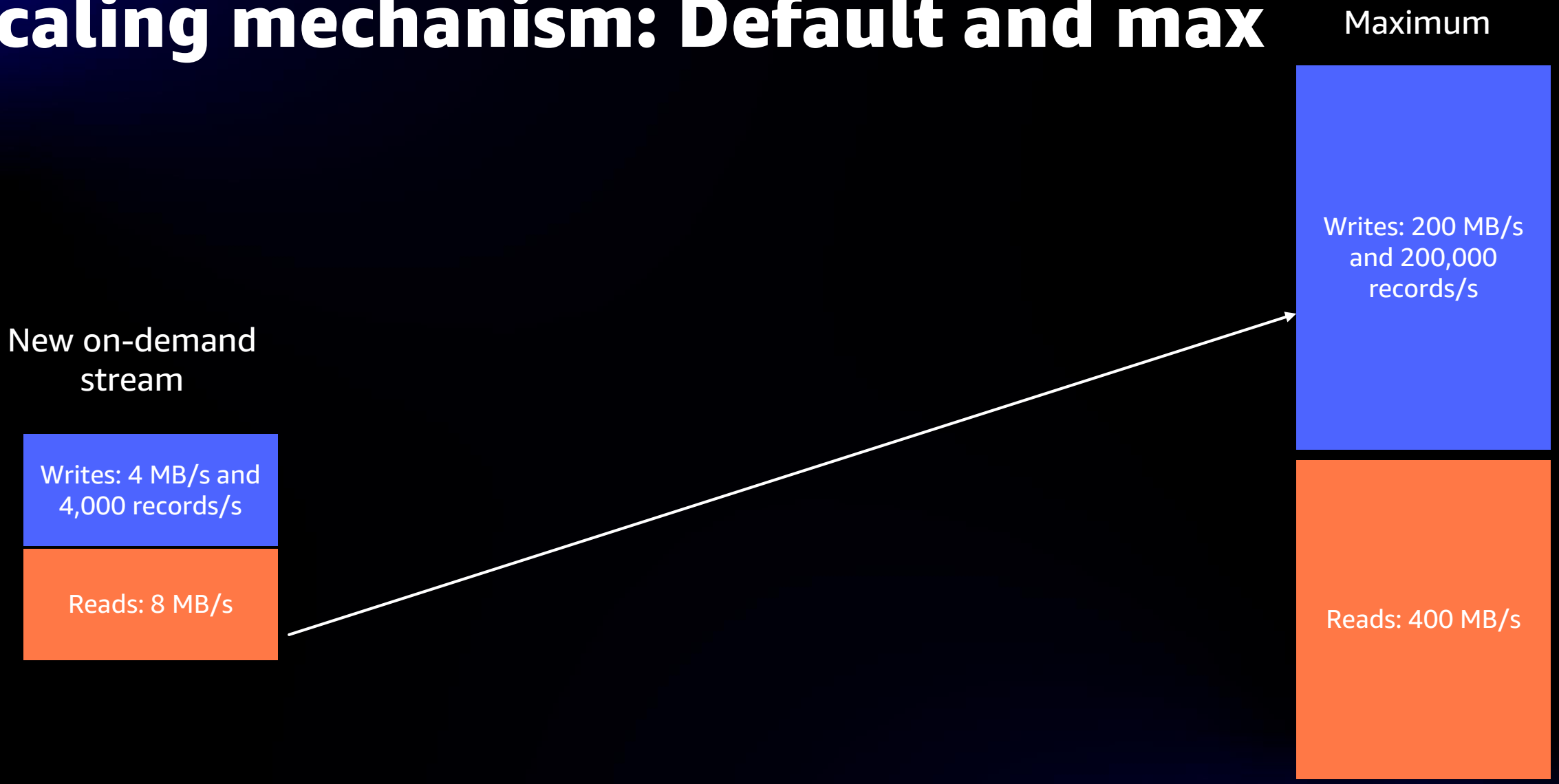
Seamless switch for existing data streams

- You can also switch your existing data streams into on-demand mode
- There is no disruption to your write and read applications and you don't need to make any code changes
- You can switch between both on-demand and provisioned modes
- Shard count remains the same after the switch into either mode



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Scaling mechanism: Default and max



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Scaling mechanism: How it works

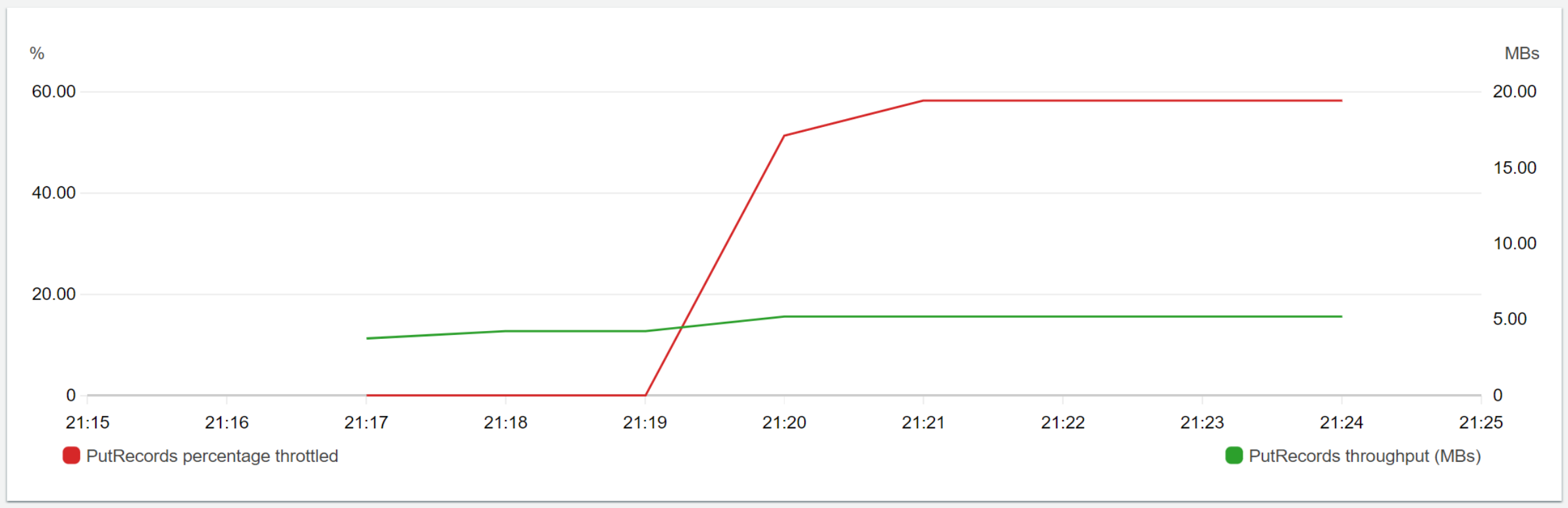
- KDS will scale the streams such that it has enough capacity to absorb traffic that is 2x more than the last 30-day peak
- If your write traffic grows more than 2x the prior peak, then KDS scales within 15 minutes
- Each on-demand stream provides read throughput that is at least 2x the write throughput
- You can use Enhanced fan-out to add more consumers

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Scaling mechanism in action

- First, we are going to start with a stream provisioned with five shards. For the first three minutes, we are sending a load of 4 MB/s. You can see that the stream can handle the load
- At time stamp 21:19, we increase the load to 12 MB/s. Now the stream cannot handle the load, and the throttles start



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Scaling mechanism in action

- At time stamp 21:23, we change the stream capacity from provisioned to on-demand
- The stream immediately scales to 10 shards and throttling is reduced
- Now the traffic continues to increase to 18 MB/s, so KDS scales to 40 shards by 21:30 and there are no throttles
- You can also see that the throttles start to reduce within minutes after moving the stream into on-demand and are fully eliminated even as traffic increases



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Pricing

PAY-PER-USE PRICING

Dimension	Rates in us-east-1
Per stream, per hour	$0.04
Data ingested, per GB (Includes 24-hour retention)	$0.08
Data retrievals, per GB	$0.04
Enhanced fan-out data retrievals, per GB	$0.05
Data stored, per GB-month (beyond 24 hours, up to 7 days)	$0.10
Data stored, per GB-month (beyond 7 days)	$0.023

1 KB rounding factor for data ingested

On-demand is typically cost-effective compared to provisioned for data streams that run at <10% utilization

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Choosing between provisioned and on-demand

On-Demand	Provisioned
New streams with unknown traffic	Predictable traffic
Unpredictable traffic	Traffic is consistent
Prefer the ease of hands-free management	When you want to have tight control of shards
Lower cost of ownership	Predictable costs
Limited to 200 MB/s of write and 400 MB/s of read throughput	No capacity limits for a provisioned stream

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Get started with KDS On-Demand today

Available in all AWS commercial and China Regions

Visit https://docs.aws.amazon.com/kinesis/index.html for more details

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Thank you!

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