

Prague AWS User Group

News from re:Invent 2018

Vladimir Simek, Sr. Solutions Architect, AWS
Prague AWS User Group
5th December 2018

A little bit of statistics

re:Invent 2018

Monday 25th November – Friday 30th November 2018

Las Vegas, Nevada, USA

7 venues (Venetian, Encore, Aria, MGM, Mirage, Bellagio, Vdara)

50.000+ people

2.100+ breakout sessions

Hands-on Labs

Hackathons & Bootcamps

Certification Exams

Partner Expo

Social activities (4K & 8K run, Tatonka challenge, re:Play, Midnight Madness etc.)

Announcements on Keynotes

1. Monday Night Live with Peter DeSantis, VP AWS Global Infrastructure
2. Global Partners Keynote with Terry Wise, VP Global Alliances and Channels, AWS
3. Andy Jassy, CEO, AWS
4. Werner Vogels, CTO, Amazon

Announcements

More than 50 announcements in the areas of:

- Networking & Content Delivery
- Management & Governance
- Analytics & Machine Learning
- Marketplace
- IoT
- Compute & Storage
- Databases & Blockchain
- Mobile
- Robotics
- Satellite

Compute

Original EC2 host



Nitro

EC2 host with the Nitro System

SERVER



Customer instances

Nitro Hypervisor

NITRO SYSTEM



Network



Storage



Management,
security, and
monitoring



Rapid pace of innovation
Instances

175

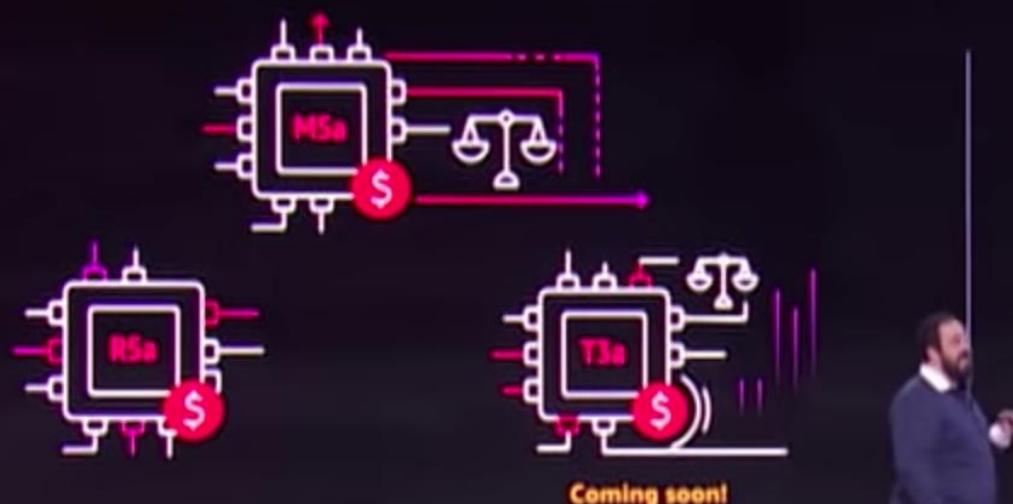
2007

2018





AMD-based instances



Choose between processors on AWS general purpose and memory optimized instances

10% lower prices on AMD-based instances

Most applications can run on AMD-based variants with little to no modification



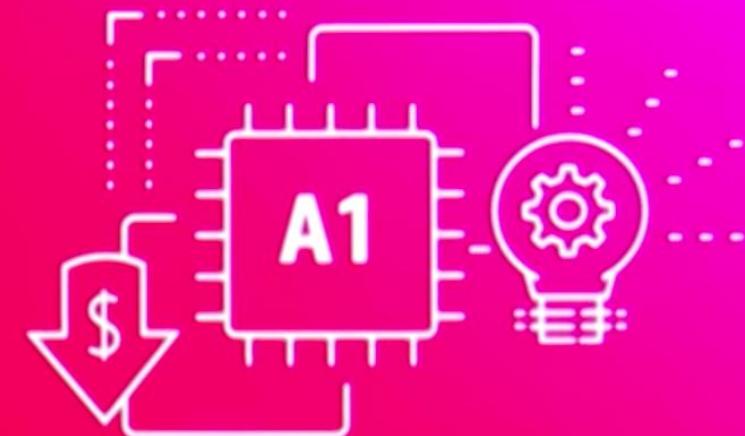
NEW!

Amazon EC2 A1 Instances

Powered by the AWS Graviton Processor

Up to 45% lower cost for scale-out workloads

AVAILABLE IN US EAST (N. VIRGINIA), US EAST (OHIO),
US WEST (OREGON), AND EUROPE (IRELAND) REGIONS



Broadest choice of processors



Intel® Xeon®
Scalable Processor



AMD EPYC
Processor



AWS Graviton
Processor



NEW!

NEW!

NEW!

EC2 C5n Instances

Offering 100 Gbps of networking throughput

AVAILABLE IN US EAST (N. VIRGINIA), US WEST (OREGON), US EAST (OHIO), EUROPE (IRELAND), AND AUSTRALIA (SOUTH (US-WEST))



aws

AVAILABLE
NEXT
MONTH!

P3dn Instances

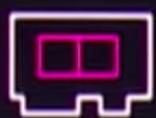
Most powerful GPU instances, designed
for distributed training with 100 Gbps
of network throughput



P3dn.24xl: Largest, fastest training instances in the cloud



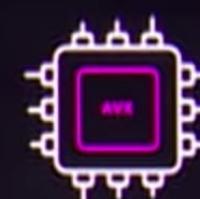
Latest V100
"Volta"



32 GB
per GPU



100Gbps
network bandwi



96 vCPUs
with AVX



2TB NVMe
instance storage

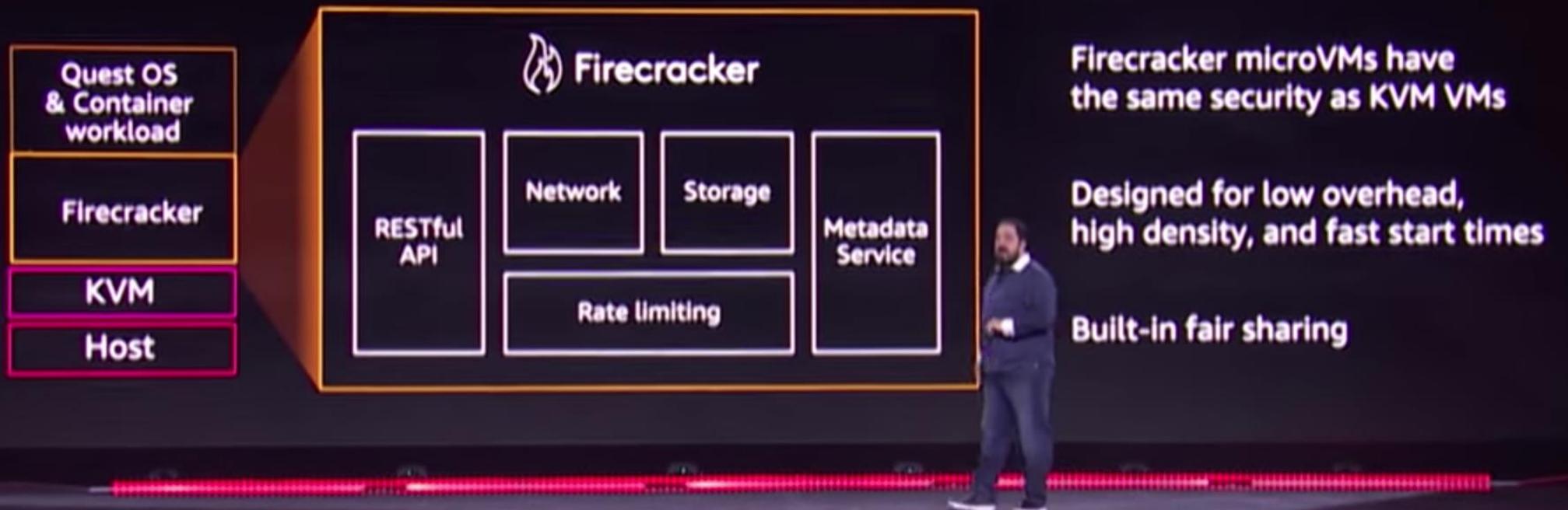
Firecracker

Secure and fast microVMs for serverless computing

AVAILABLE THROUGH OPEN SOURCE UNDER APACHE 2.0 LICENSE



Firecracker architecture and benefits



AWS Outposts

AWS coming to a data center
near you in two ways



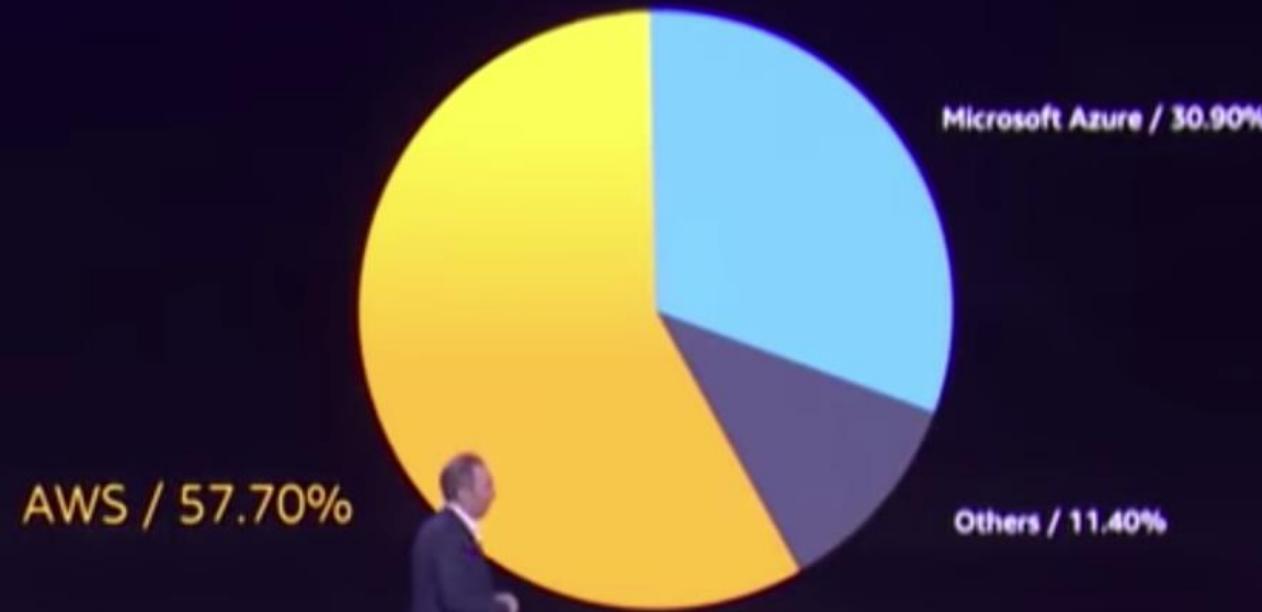
OPTION 1
VMware Cloud
on AWS

OPTION 2
AWS native

— AWS DESIGNED HARDWARE
The same that we run in our own data centers

Storage

Worldwide Windows Public Cloud IaaS Instances by Cloud Provider



IDC, Windows Server Operating Environment
Market Update, Doc # US44217118, Aug 2018

Amazon FSx for Windows File Server

Fully managed Windows file system built on native Windows file servers



Windows native for fully compatible Windows File System experience

(Compatibility with AD, Windows access control, and native Windows Explorer experience)



No hardware or software to manage



Up to 10s of GB/s throughput with sub-millisecond latencies



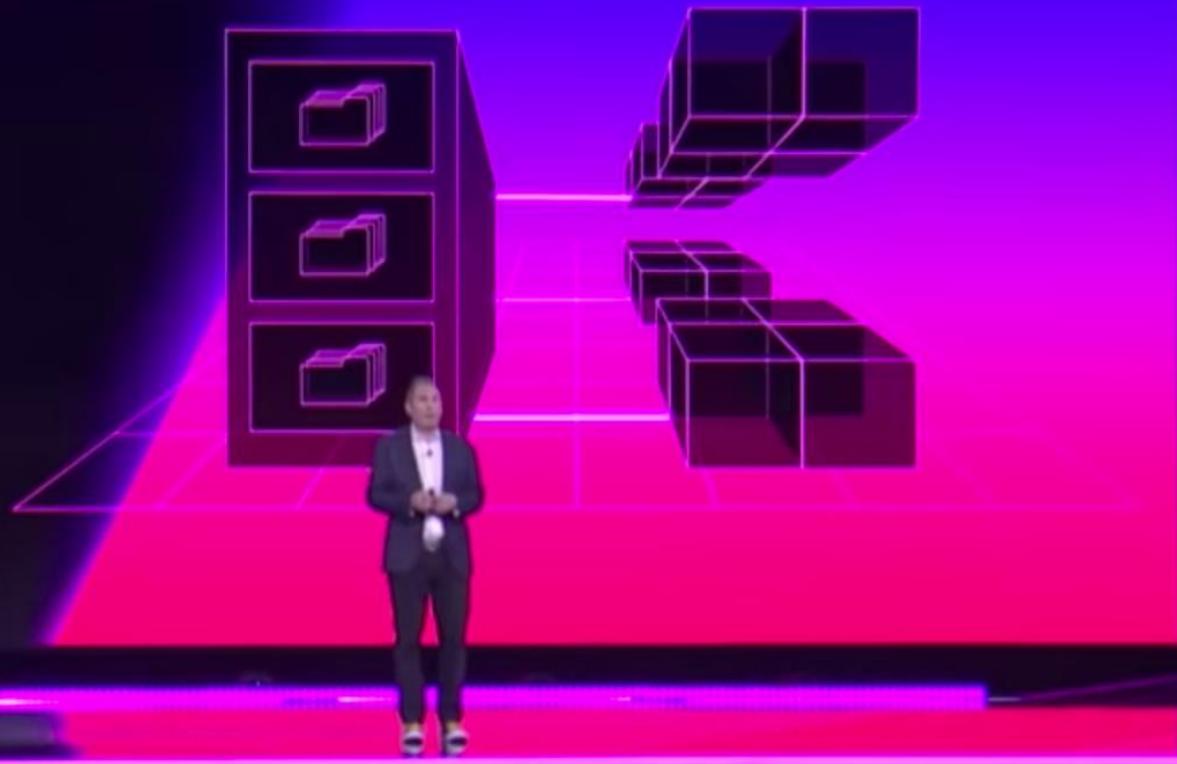
Secure and compliant including PCI-DSS, ISO, and HIPAA

NEW!

Amazon FSx for Lustre

Fully managed file system for
compute-intensive workloads

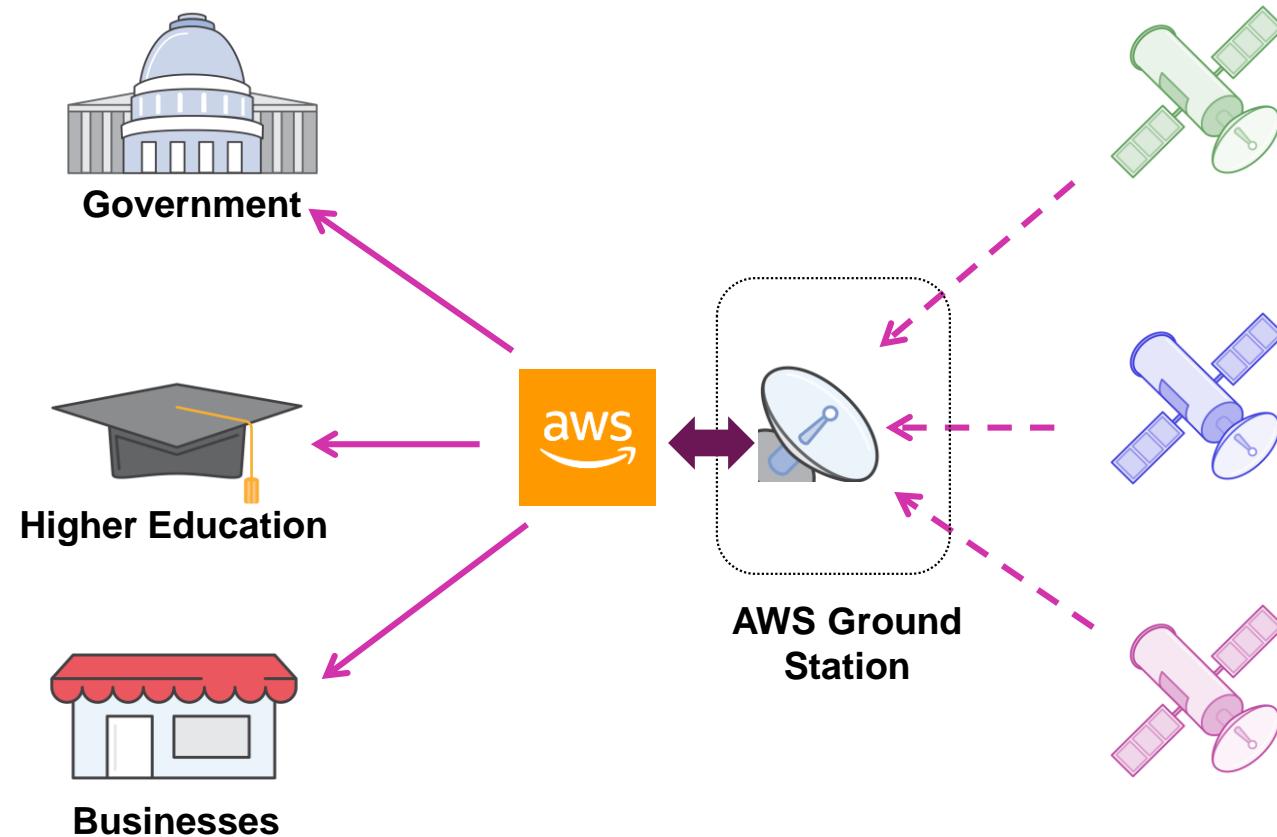
GENERALLY AVAILABLE TODAY



Satellite



AWS Ground Station



Ground Stations:

- No infrastructure commitments
- Pay-for-what-you-use pricing
- Self-service scheduling
- Minimal latency due to close proximity with AWS data centers
- Direct access to AWS services, infrastructure, and network at the antenna



Use Cases

Natural Disasters

During natural disasters you can rapidly analyze downlinked imagery data to identify survivors, assess structural damages, and immediately stream this data to first responders and rescue teams. You can apply analytics and machine learning to this data to identify the safest exit routes and best locations for temporary shelters and emergency medical facilities.

Accurate Weather Prediction

You can use the AWS Cloud to analyze downlinked weather data from all over the world to more accurately predict weather patterns. This can be used to help ships, airplanes, trucks and people increase their awareness of inclement weather in their area and then safely and efficiently avoid dangerous situations.

Business Trends Assessment

You can use radar satellite imagery of your various business facilities such as parking lots, logistic centers, and retail stores to autonomously measure cars, traffic and customer flow patterns, even when it's dark or cloudy weather conditions. You can combine this with other AWS services like analytics and machine learning, along with time of day and weather conditions, to assess business and operational trends in real-time. These insights can be immediately streamed to relevant business analysts and decision makers anywhere in the world.

Robotics



AWS RoboMaker



AWS RoboMaker Demo

Machine Learning

How do we put ML in the hands of developers (literally)?

AWS DeepLens

The world's first deep learning enabled video camera for developers

AWS DeepLens helps put deep learning in the hands of developers, literally, with a fully programmable video camera, tutorials, code, and pre-trained models designed to expand deep learning skills.

[Buy a DeepLens on Amazon.com](#)

[Get started with Amazon SageMaker](#)

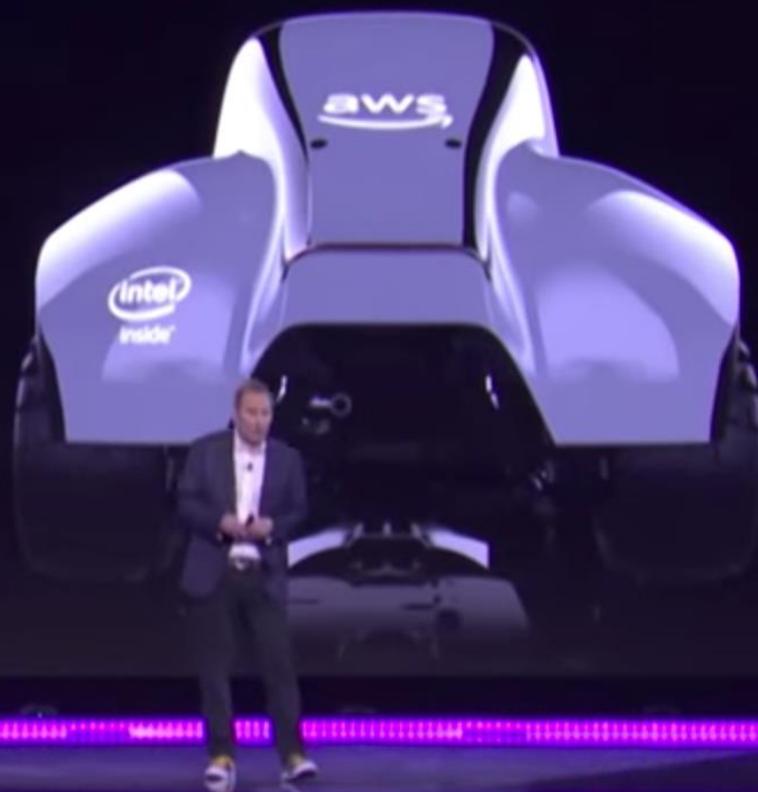


NEW!

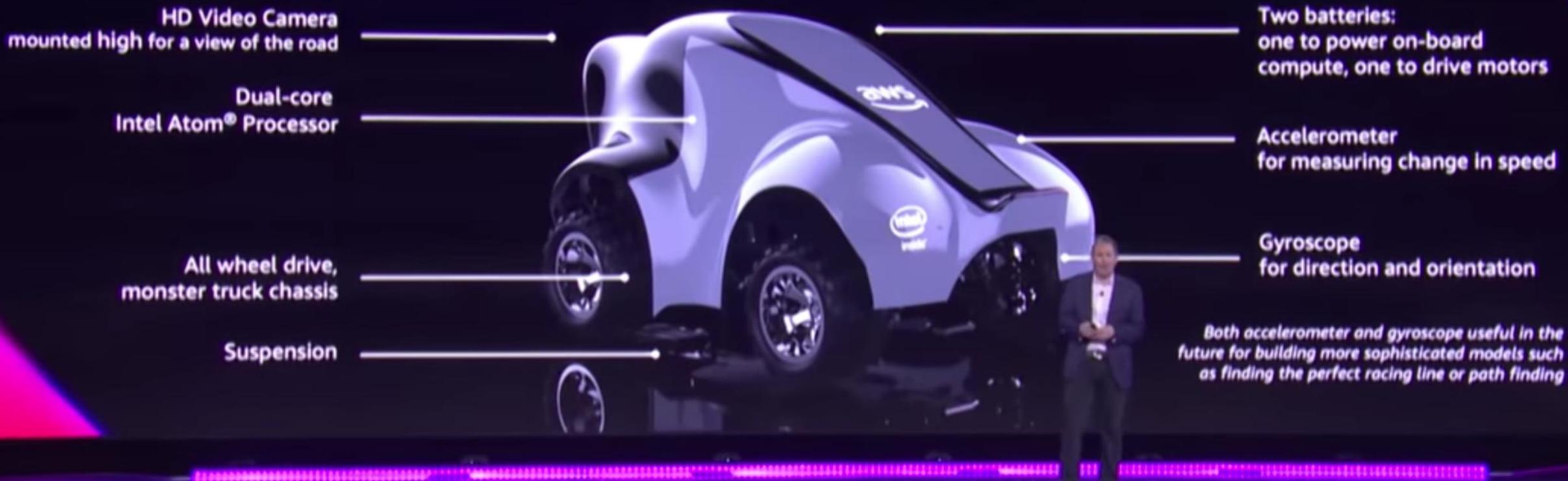
AWS DeepRacer

Fully autonomous 1/18th scale race car,
driven by reinforcement learning

AVAILABLE FOR PRE-ORDER ON AMAZON.COM



Introducing AWS DeepRacer





AWS DeepRacer League

World's first global autonomous racing league, open to anyone



Build reinforcement learning model



DeepRacer League Races at AWS Summits



Winners of each DRL Race and top scorers compete in Championship Cup at re:Invent 2019



Virtual tournaments throughout the year



AWS Inferentia

AWS Inferentia is a machine learning inference chip designed to deliver high performance at low cost. AWS Inferentia will support the TensorFlow, Apache MXNet, and PyTorch deep learning frameworks, as well as models that use the ONNX format.

Status: Available 2019



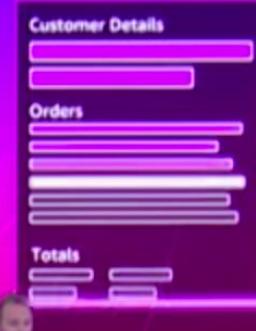
NEW!

Amazon Textract

OCR++ service to easily extract text and data
from virtually any document

No ML experience required

AVAILABLE IN PREVIEW TODAY



aws

No master algorithm
for personalization
and recommendation



Music
recommendation
Tracks, artists, albums



Film
recommendation
Actors, directors, genres



Product
recommendation
Pricing, category, offers



Article
recommendation
Themes, geography,
breaking news

aws

aws

NEW!

Amazon Personalize

Real-time personalization and recommendation service,
based on the same technology used at Amazon.com

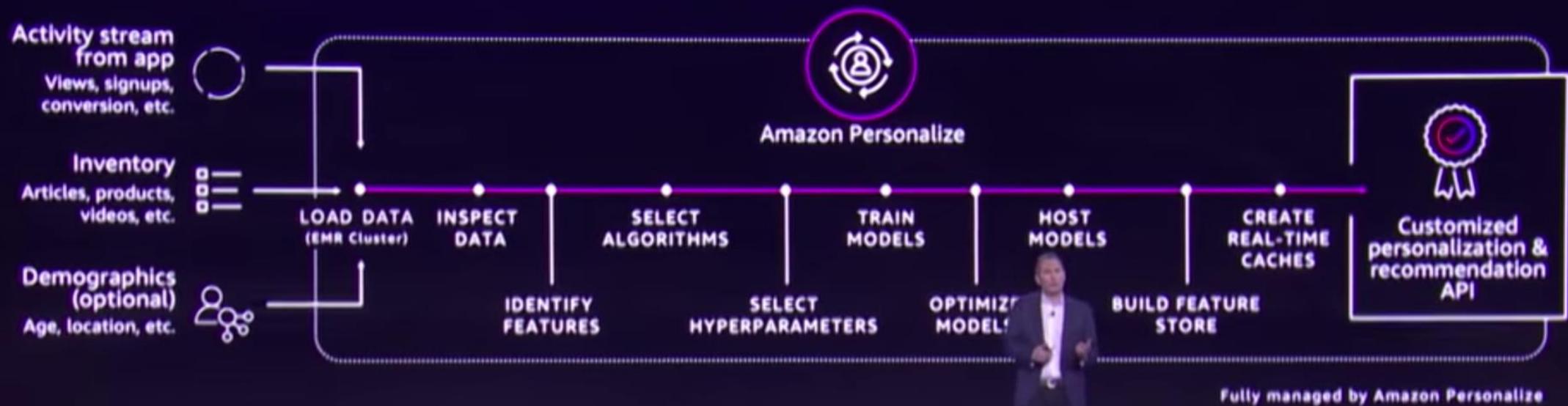
No ML experience required



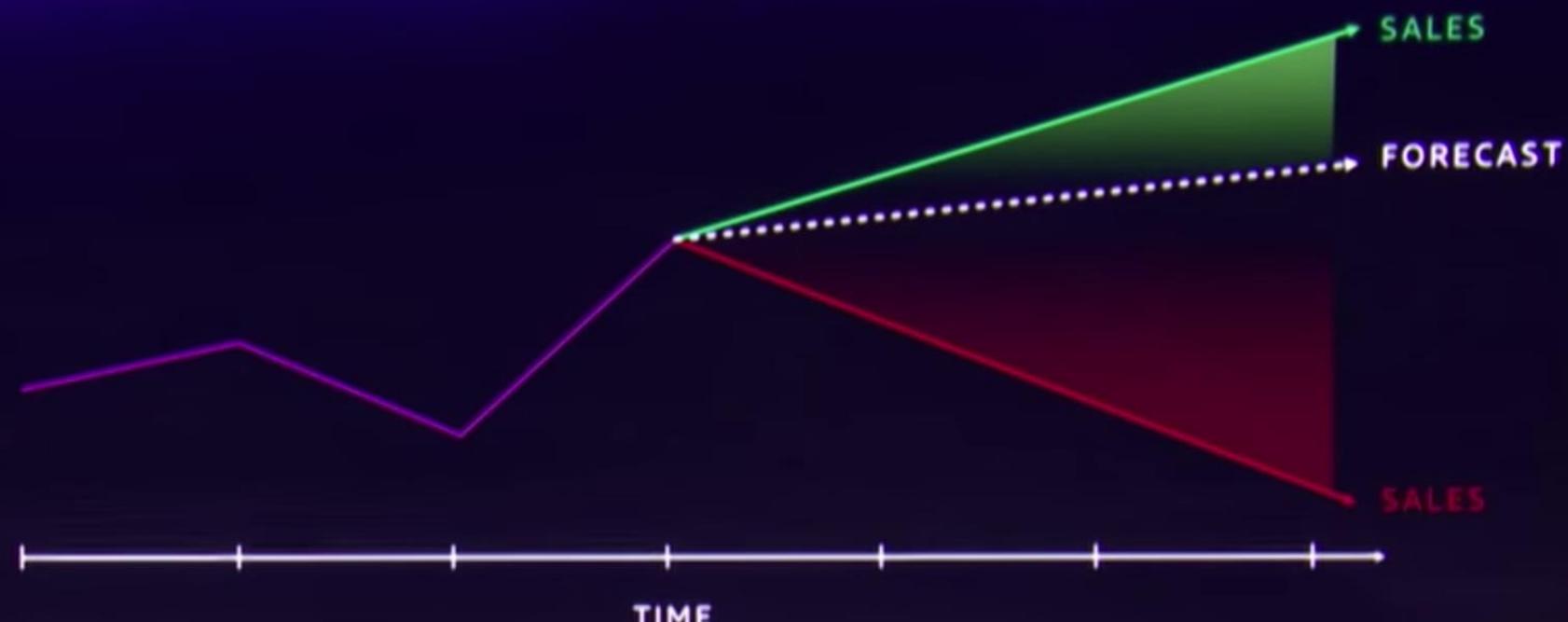
aws

aws

Amazon Personalize: machine learning personalization and recommendations



The perils of poor predictions in forecasting



NEW!

Amazon Forecast

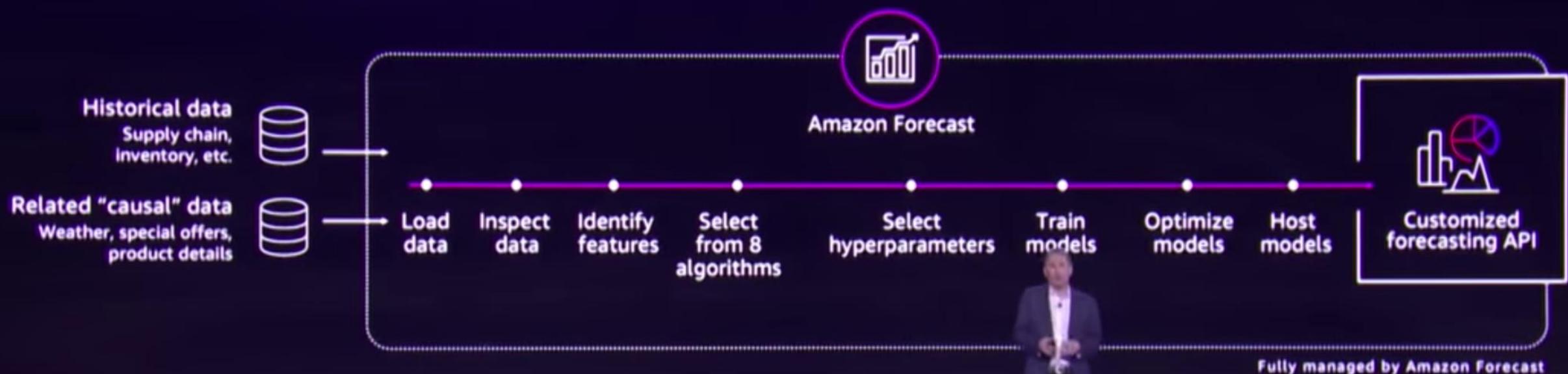
Accurate time-series forecasting service, based
on the same technology used at Amazon.com

No ML experience required



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Amazon Forecast: machine learning time-series forecasting



Using Amazon Forecast for time-series forecasts



Any historical
time-series



Integrates with SAP and
Oracle Supply Chain



Integrates with
Amazon Timestream



Custom forecasts
with 3 clicks



50% more
accurate



1/10th
the cost

Generate forecasts for:

Retail demand

Travel demand

V/S usage

Revenue forecasts

Web traffic

Advertising demand

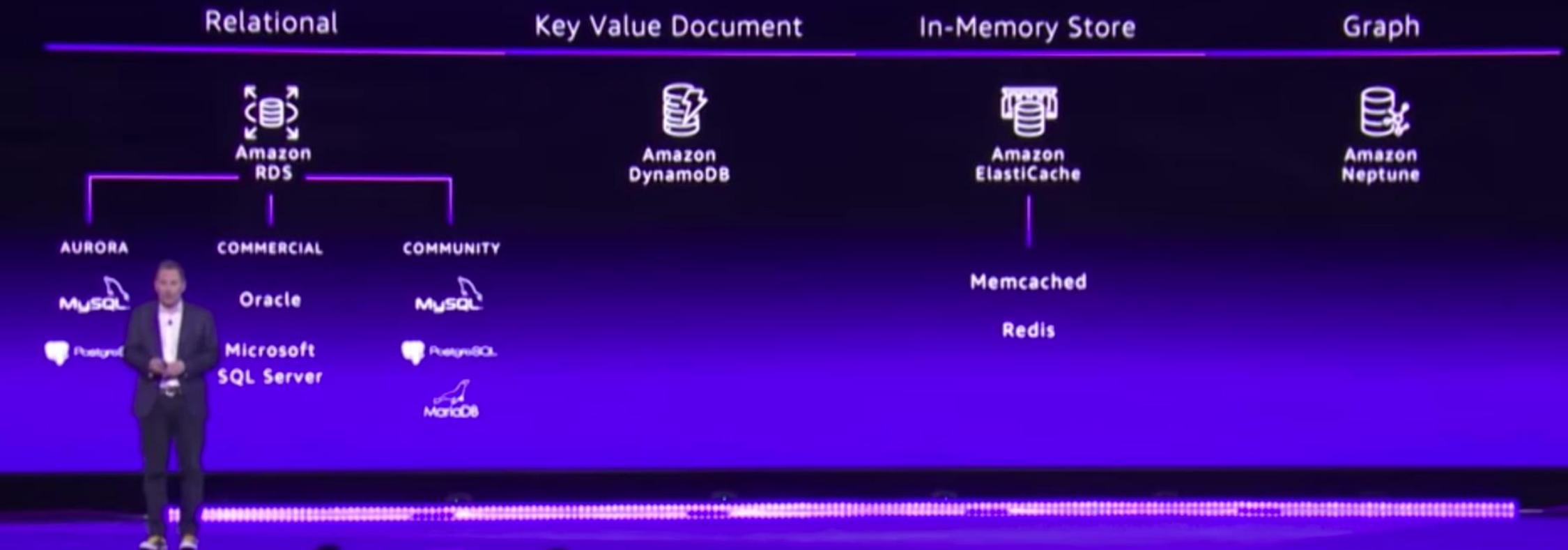


Database & Blockchain



aws
↗

Evolution of databases for all of your application needs



Tracking change over time



- 1 Clickstream data
- 2 IoT sensor readings
- 3 DevOps data



Relational databases

Unnatural for time-series data

Lack time-series analytic functions like smoothing, approximation, and interpolation

Relational schema inflexible for fast-moving time-series data



Building with time-series data is challenging



Existing time-series databases

Manual effort needed for enterprise-grade availability and reliability

Difficult to scale

Limited data lifecycle management capabilities

NEW!

Amazon Timestream

Fast, scalable, fully managed
time-series database

AVAILABLE IN PREVIEW TODAY



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Amazon Timestream

Fast, scalable, fully managed
time-series database



Multiple orders of magnitude improvement in
query performance



Timestream is 1,000X faster and 1/10th
the cost of relational databases



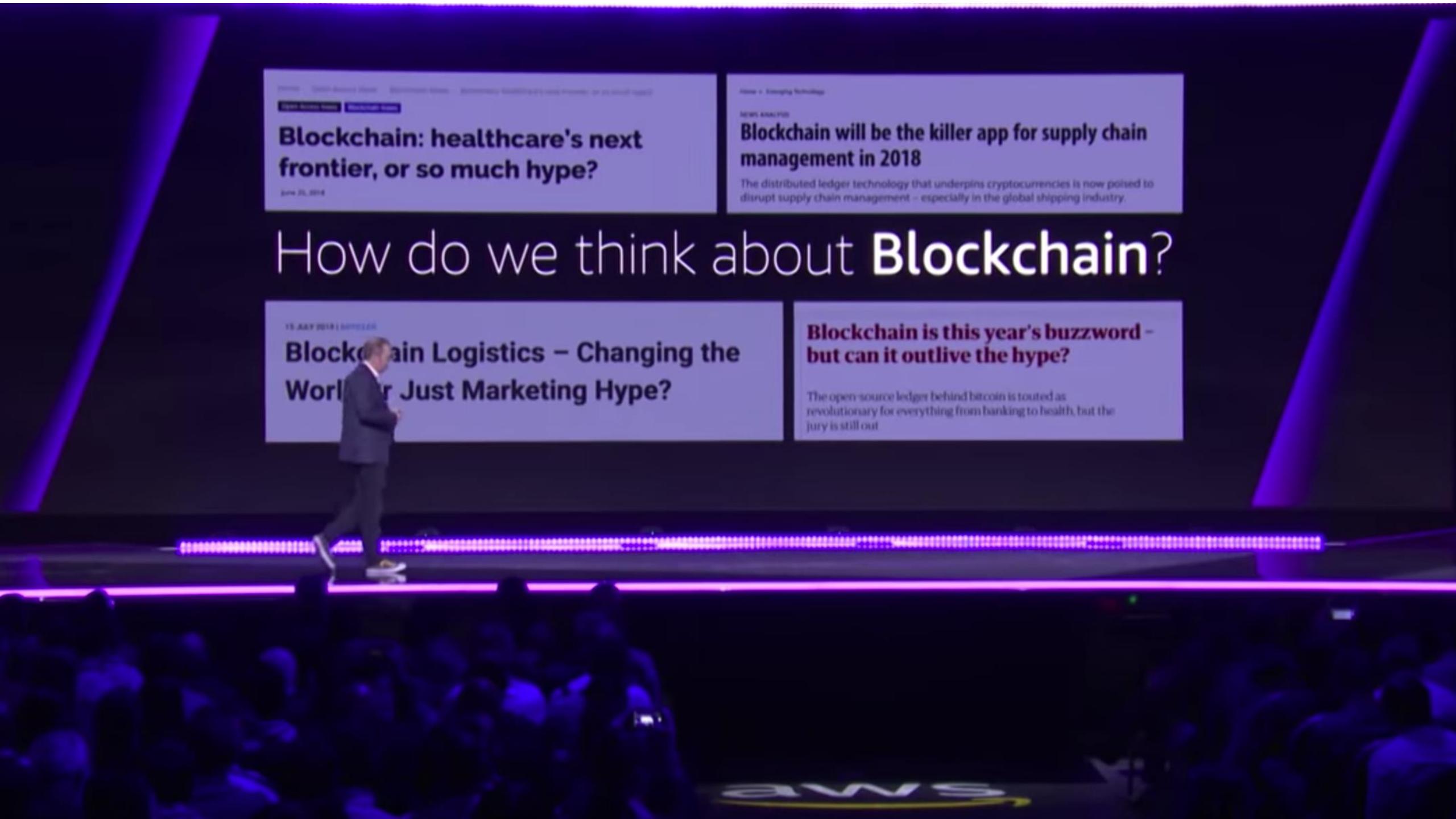
Trillions of daily events



Time-series analytics (interpolation, smoothing,
approximation) built in



Serverless



Blockchain: healthcare's next frontier, or so much hype?

June 21, 2018

Blockchain will be the killer app for supply chain management in 2018

The distributed ledger technology that underpins cryptocurrencies is now poised to disrupt supply chain management – especially in the global shipping industry.

How do we think about **Blockchain**?

15 JULY 2018 | BY PETER

Blockchain Logistics – Changing the World or Just Marketing Hype?

Blockchain is this year's buzzword – but can it outlive the hype?

The open-source ledger behind bitcoin is touted as revolutionary for everything from banking to health, but the jury is still out

aws

Common customer use cases



Using sub-optimal ways
to solve the problem



Common customer use cases



NEW!

Amazon Quantum Ledger Database (QLDB)

Fully managed ledger database
with a central trusted authority

AVAILABLE IN PREVIEW TODAY



Amazon (QLDB)

Fully managed ledger database
with a central trusted authority

AVAILABLE IN PREVIEW TODAY



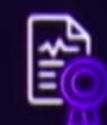
Immutable

Append-only, immutable journal
tracks history of all changes



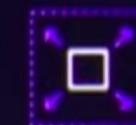
Fast

Execute 2-3X more transactions



Cryptographically Verifiable

All changes are cryptographically
chained and verifiable



Highly scalable

Automatically scale up or down



Transparent

Full visibility into entire data life



Easy to use

Query with familiar SQL operators

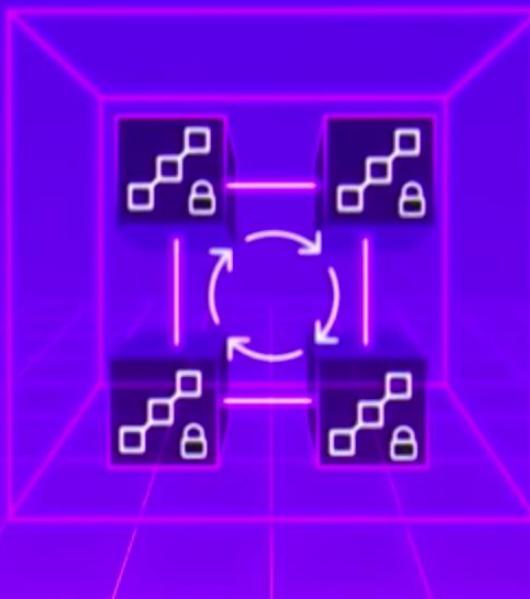


NEW!

Amazon Managed Blockchain

Fully managed blockchain service, supporting both Hyperledger Fabric and Ethereum frameworks

AVAILABLE NOW TODAY



Amazon Managed Blockchain

Create and manage scalable
blockchain networks



Choose Hyperledger Fabric or Ethereum



Scales to support thousands of applications
running millions of transactions



Create blockchain networks with a few clicks;
manage them with simple API calls



Easy to move data into QLDB for further analysis

.... and much much more

Further Resources

re:Invent 2018 Announcements <https://aws.amazon.com/new/reinvent/>

AWS re:Invent 2018 - Monday Night Live with Peter DeSantis

<https://www.youtube.com/watch?v=mDNHK-SzXEM>

AWS re:Invent 2018 - Global Partner Keynote

<https://www.youtube.com/watch?v=7NJs7CsstHc>

AWS re:Invent 2018 - Keynote with Andy Jassy

<https://www.youtube.com/watch?v=ZOlkOnW640A>

AWS re:Invent 2018 - Keynote with Werner Vogels

<https://www.youtube.com/watch?v=femopq3JWJg>

Thank you

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