Scale, baby, scale!

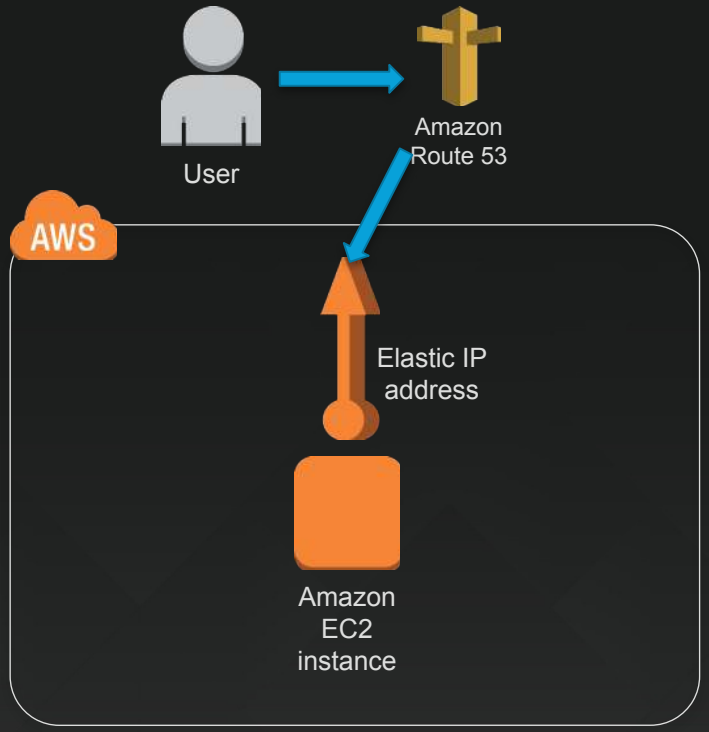
Julien Simon
Principal Technical Evangelist
Amazon Web Services

julsimon@amazon.fr
@julsimon

So let’s start from day 1, user 1 (you)

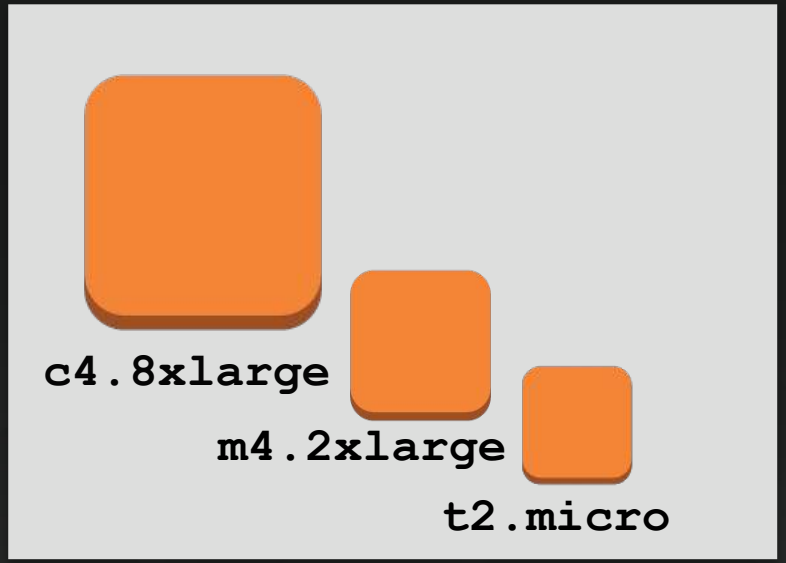
Day 1, user 1

- A single Amazon EC2 instance, with full stack on this host
  - Web app
  - Database
  - Management
  - And so on…
- A single Elastic IP address
- Amazon Route 53 for DNS



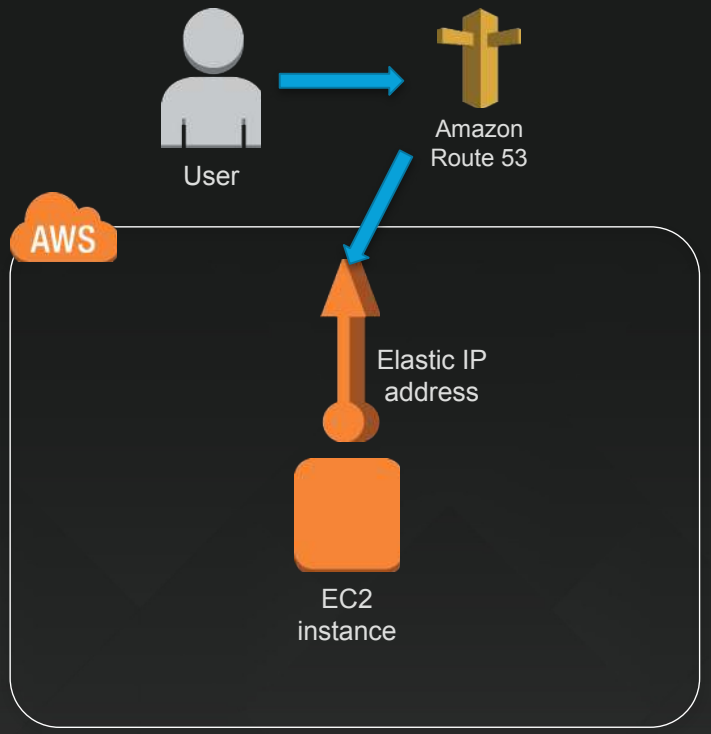
“We’re gonna need a bigger box”

- “Scale up”: simplest approach
- Can now leverage PIOPS
- High I/O instances
- High memory instances
- High CPU instances
- High storage instances
- Easy to change instance sizes
- **Will hit a wall eventually**



Day 1, user 1

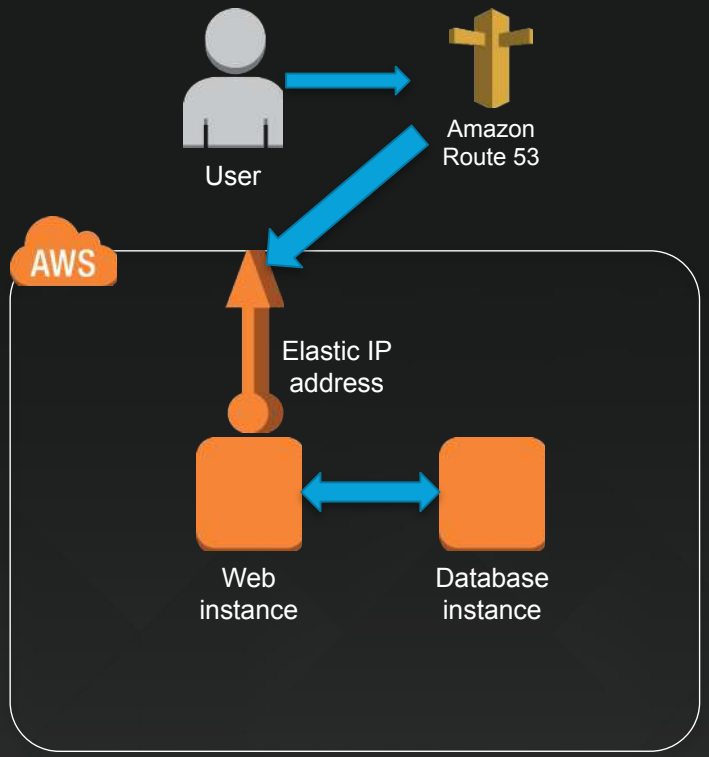
- We could potentially get to a few hundred to a few thousand depending on application complexity and traffic
- **No failover**
- **No redundancy**
- **Too many eggs in one basket**



Day 2, user > 1

First, let's separate out our single host into more than one

- Web
- Database
  - Make use of a database service?



Database options

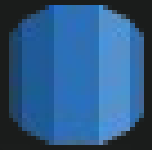
Self-managed

Database server on Amazon EC2

Your choice of database running on Amazon EC2

Bring Your Own License (BYOL)

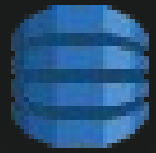
Fully managed



Amazon RDS

SQL Server, Oracle, MySQL, MariaDB, Aurora or PostgreSQL as a managed service

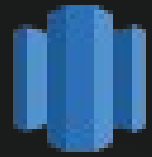
Flexible licensing: BYOL or license included



Amazon DynamoDB

Managed NoSQL database service using SSD storage

Seamless scalability Zero administration



Amazon Redshift

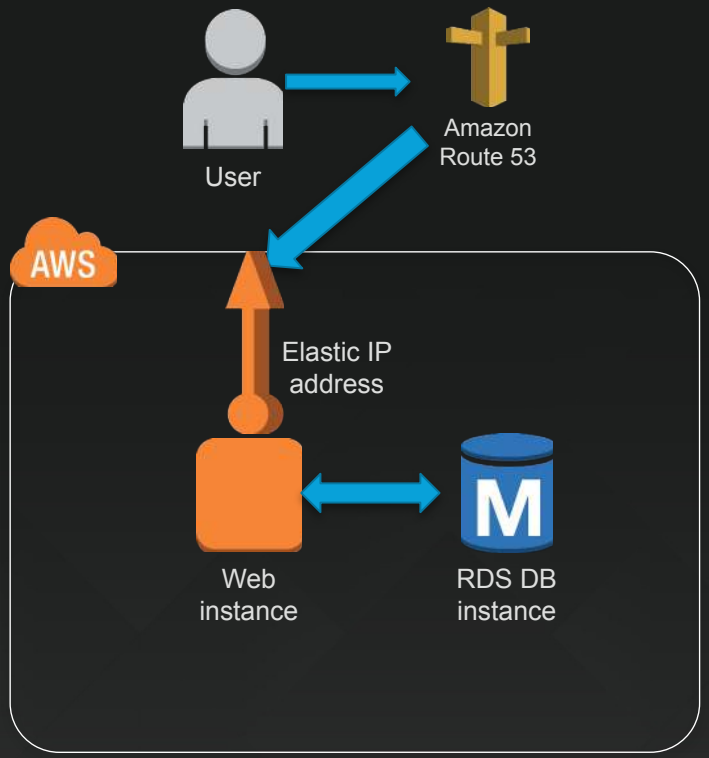
Massively parallel, petabyte-scale data warehouse service

Fast, powerful, and easy to scale

Users > 100

First, let's separate out our single host into more than one:

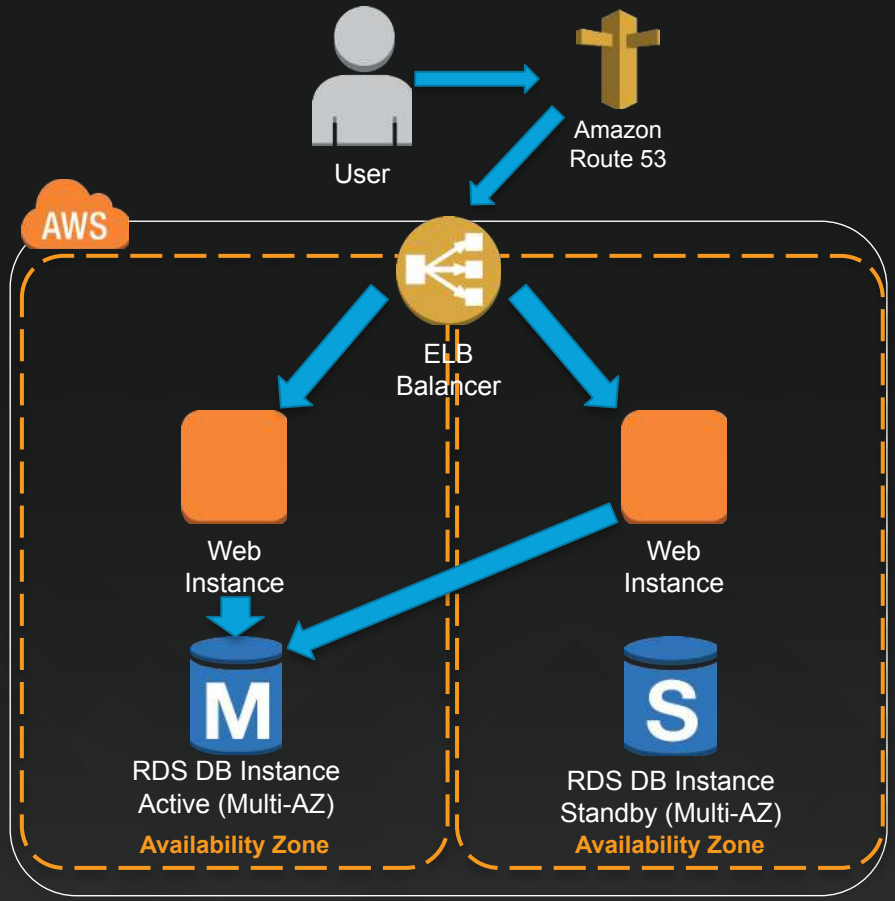
- Web
- Database
  - Use Amazon RDS to make your life easier



Users > 1000

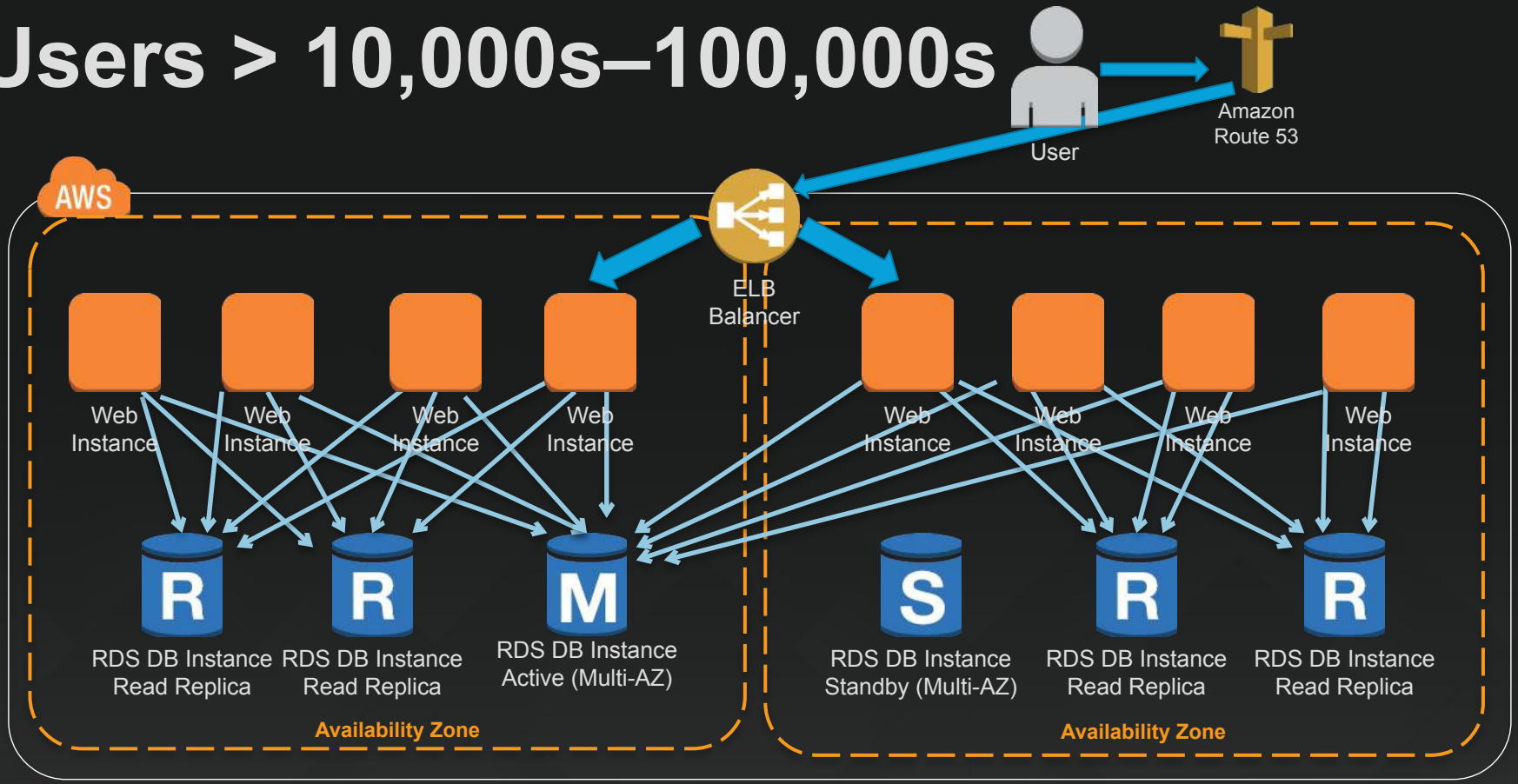
Next, let's address our lack of failover and redundancy issues:

- Elastic Load Balancing (ELB)
- Another web instance
  - In another Availability Zone
- RDS Multi-AZ



Scaling this horizontally and vertically will get us pretty far (tens to hundreds of thousands)

Users > 10,000s–100,000s



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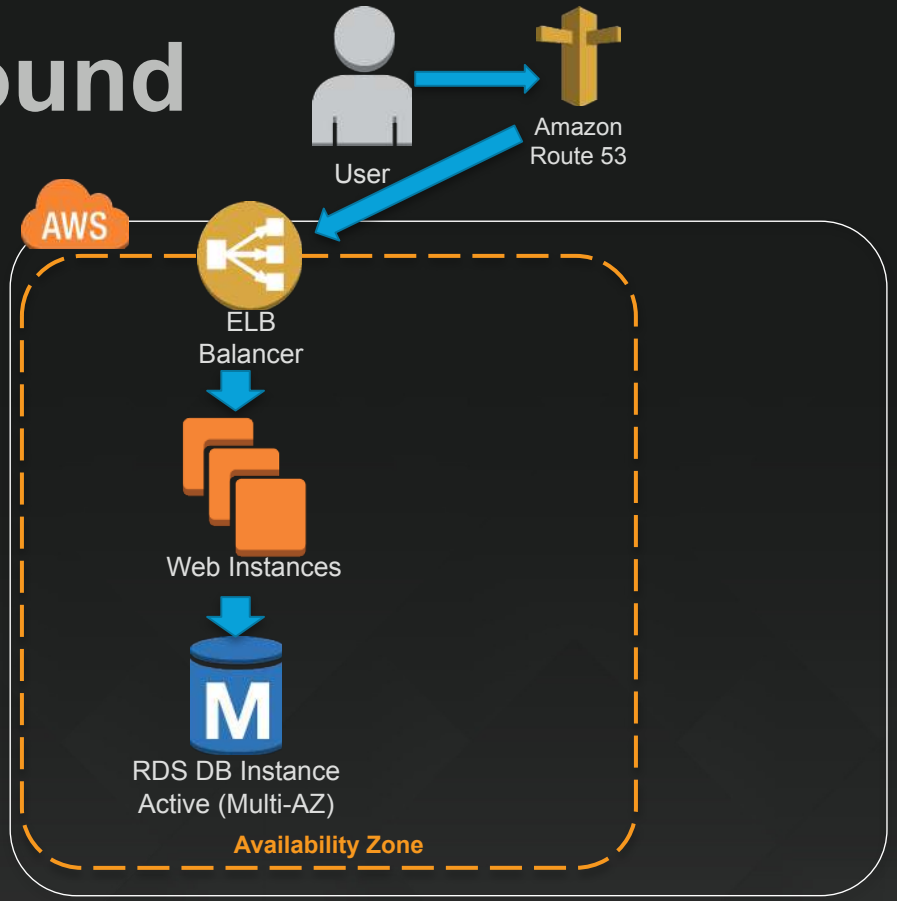
This will take us pretty far, but we care about *performance* and *efficiency*, so let's improve further

Shift some load around

Let's lighten the load on our web and database instances:

- Move static content from the web instance to Amazon S3 and Amazon CloudFront
- Move session/state and DB caching to Amazon ElastiCache or Amazon DynamoDB



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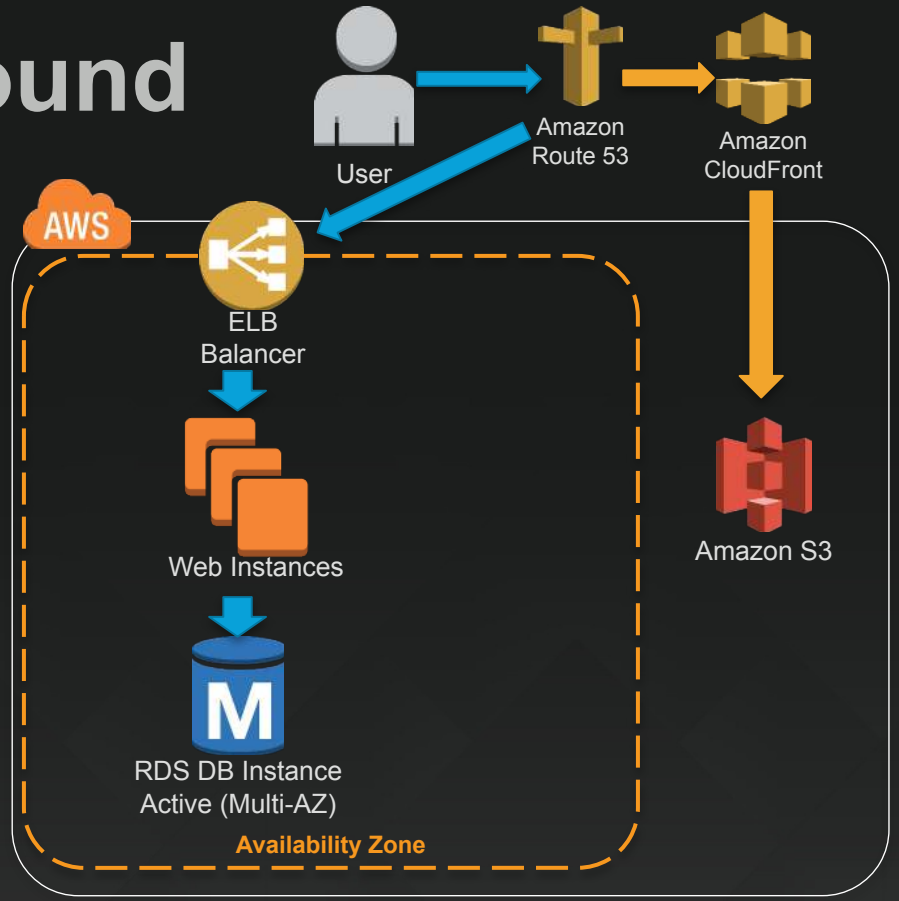

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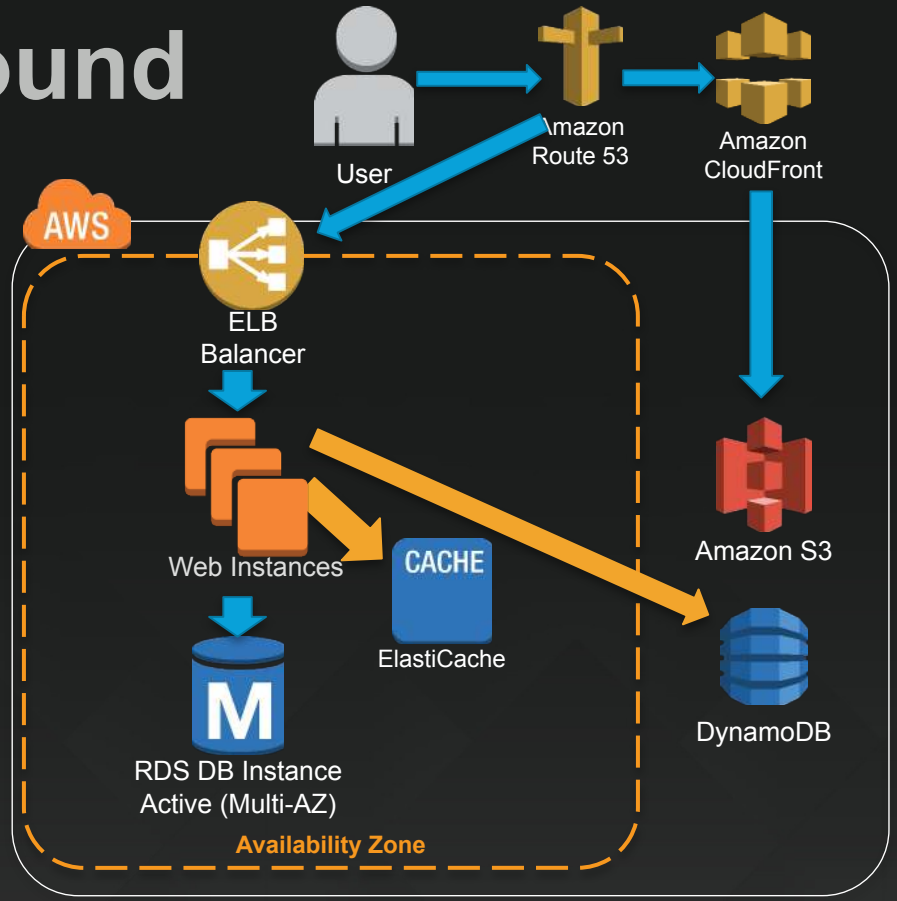

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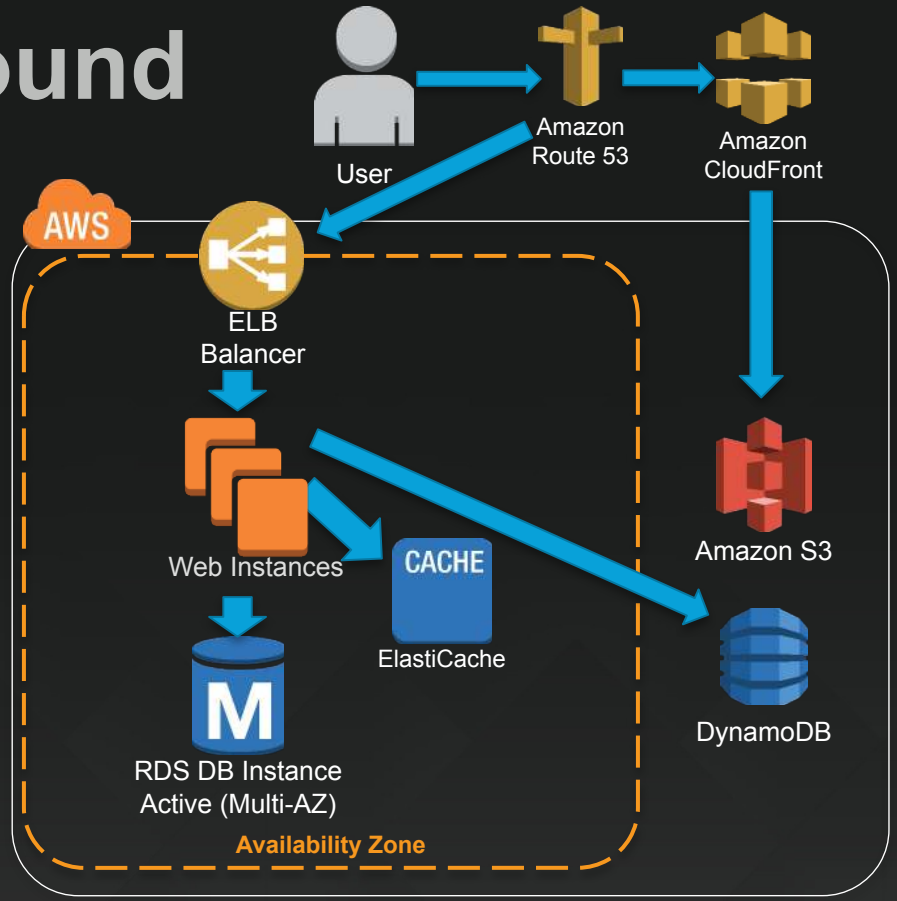

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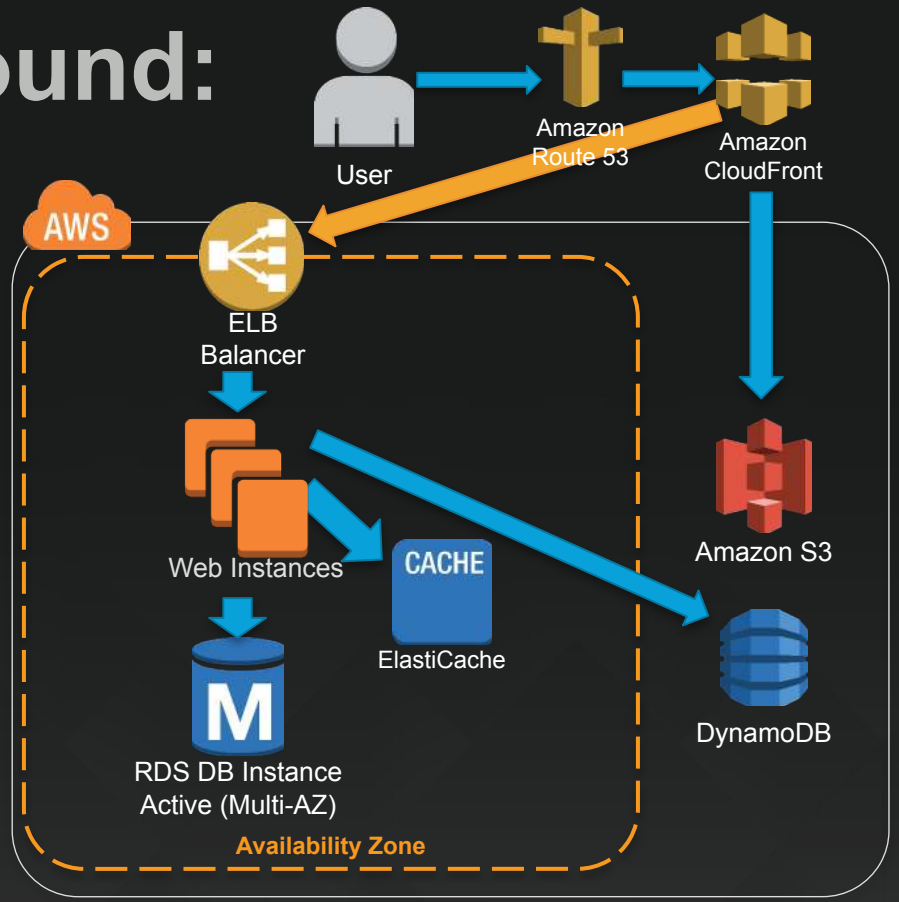

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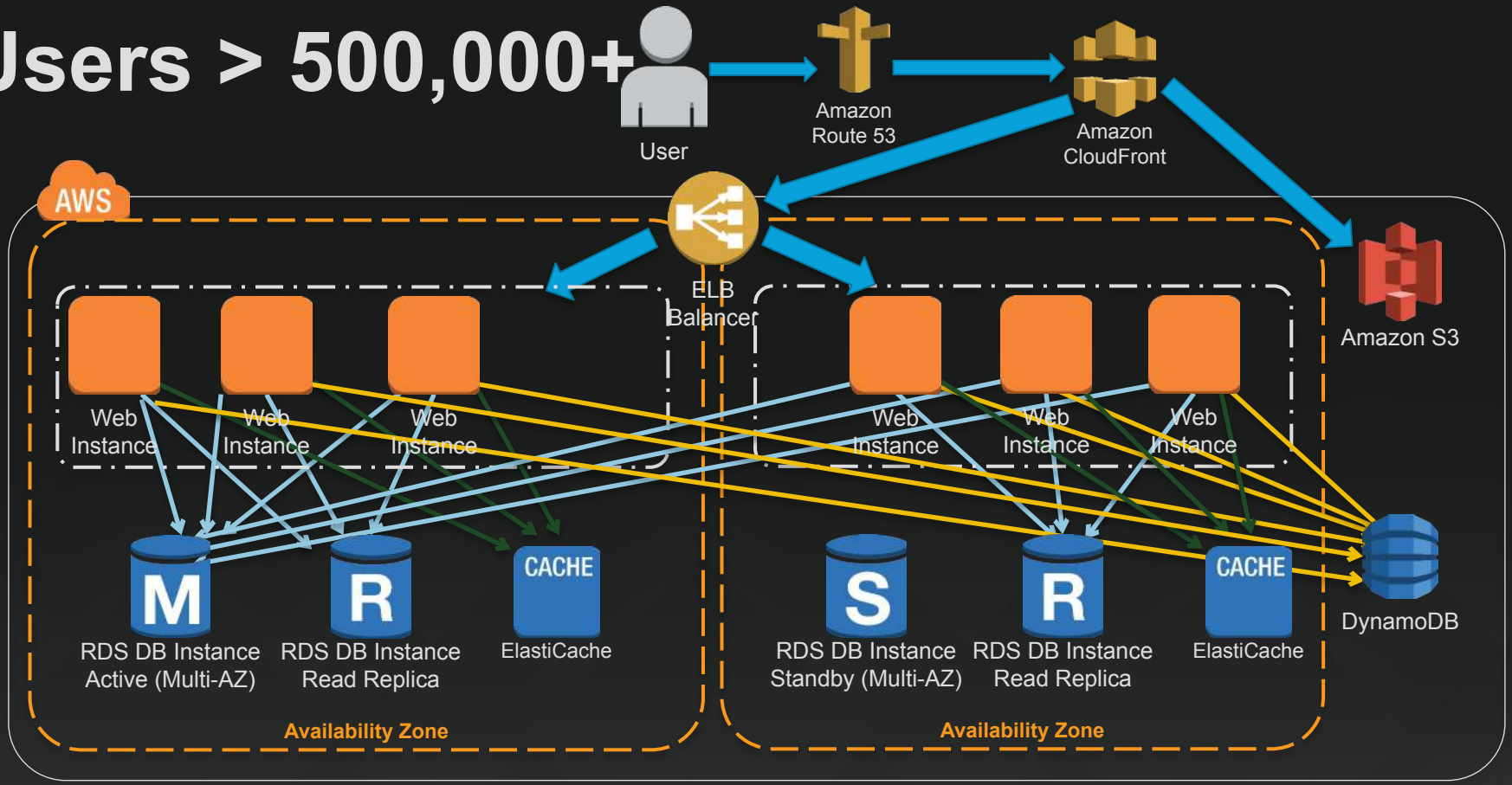
Now that our web tier is much more lightweight…

Auto Scaling!

Automatic resizing of compute clusters based on demand

Users > 500,000+



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There are more improvements to be made and we could get higher still, but…

Werner Vogels, CTO, Amazon.com
AWS re:Invent 2015

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Use the Force, Luke!

Managed services
+ AWS Lambda
= Serverless architecture

Many of our customers have figured it out.

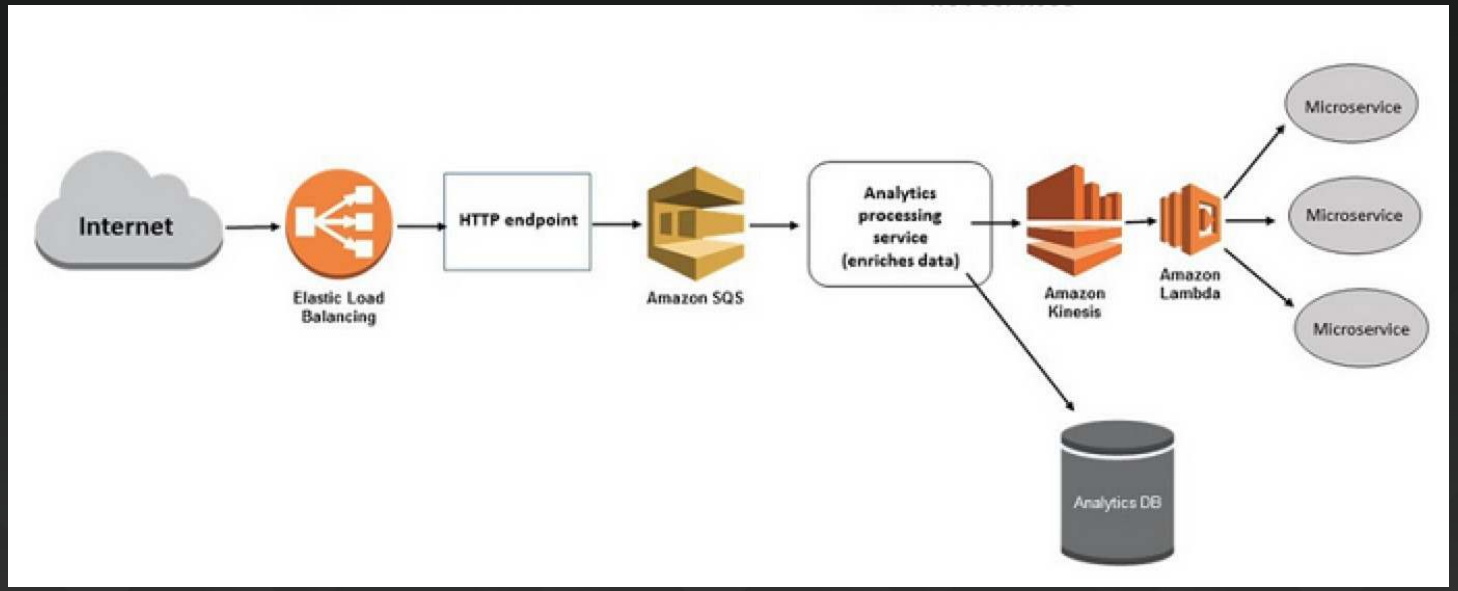
This is what they're building!

Case study : Localytics

https://aws.amazon.com/fr/solutions/case-studies/localytics/

Web and mobile app analytics

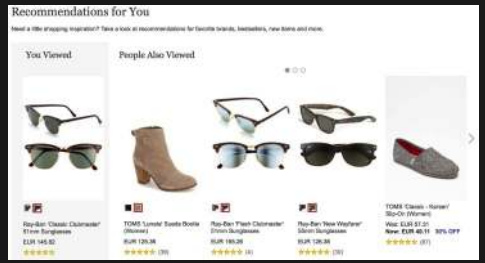
100 billion data points monthly

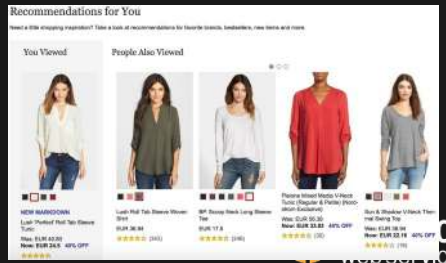


Case study: Nordstrom

https://aws.amazon.com/fr/solutions/case-studies/nordstrom/

All-in on Amazon Web Services !

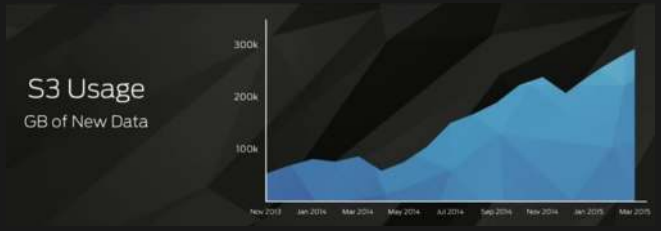


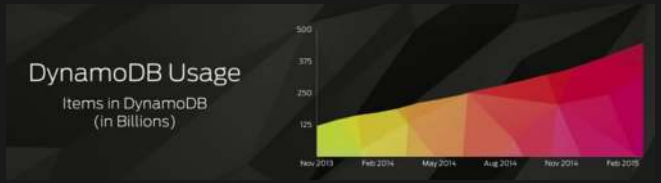


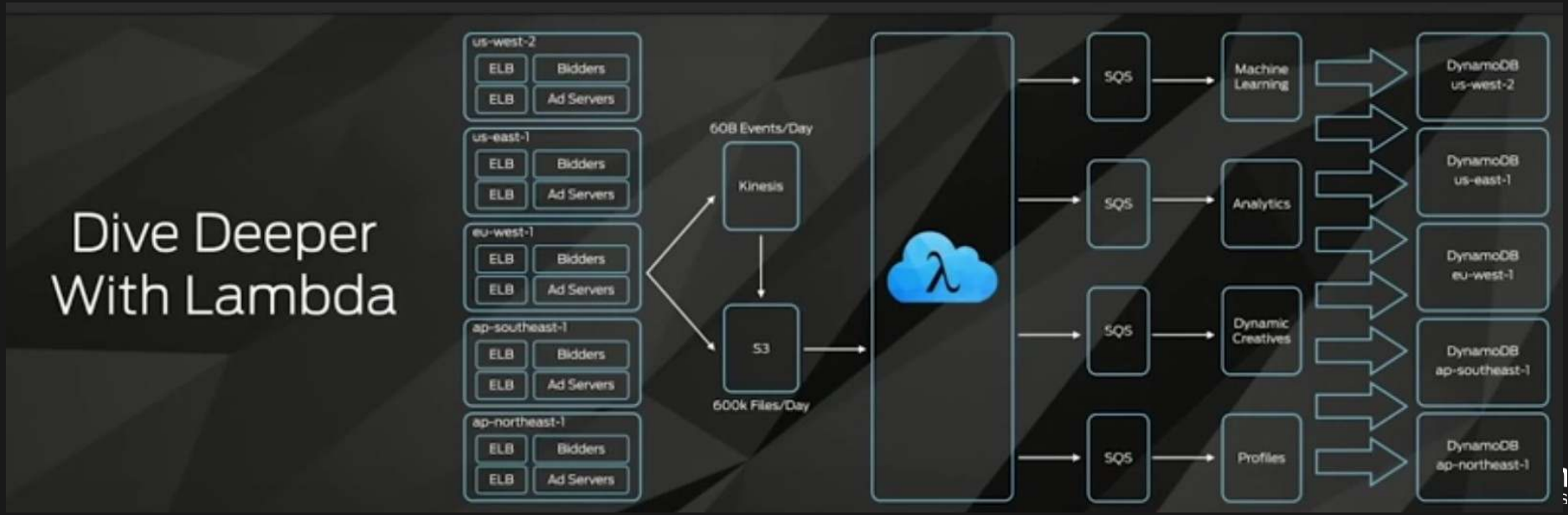
Case study: AdRoll

https://aws.amazon.com/fr/solutions/case-studies/adroll/
https://aws.amazon.com/fr/dynamodb/adtech/

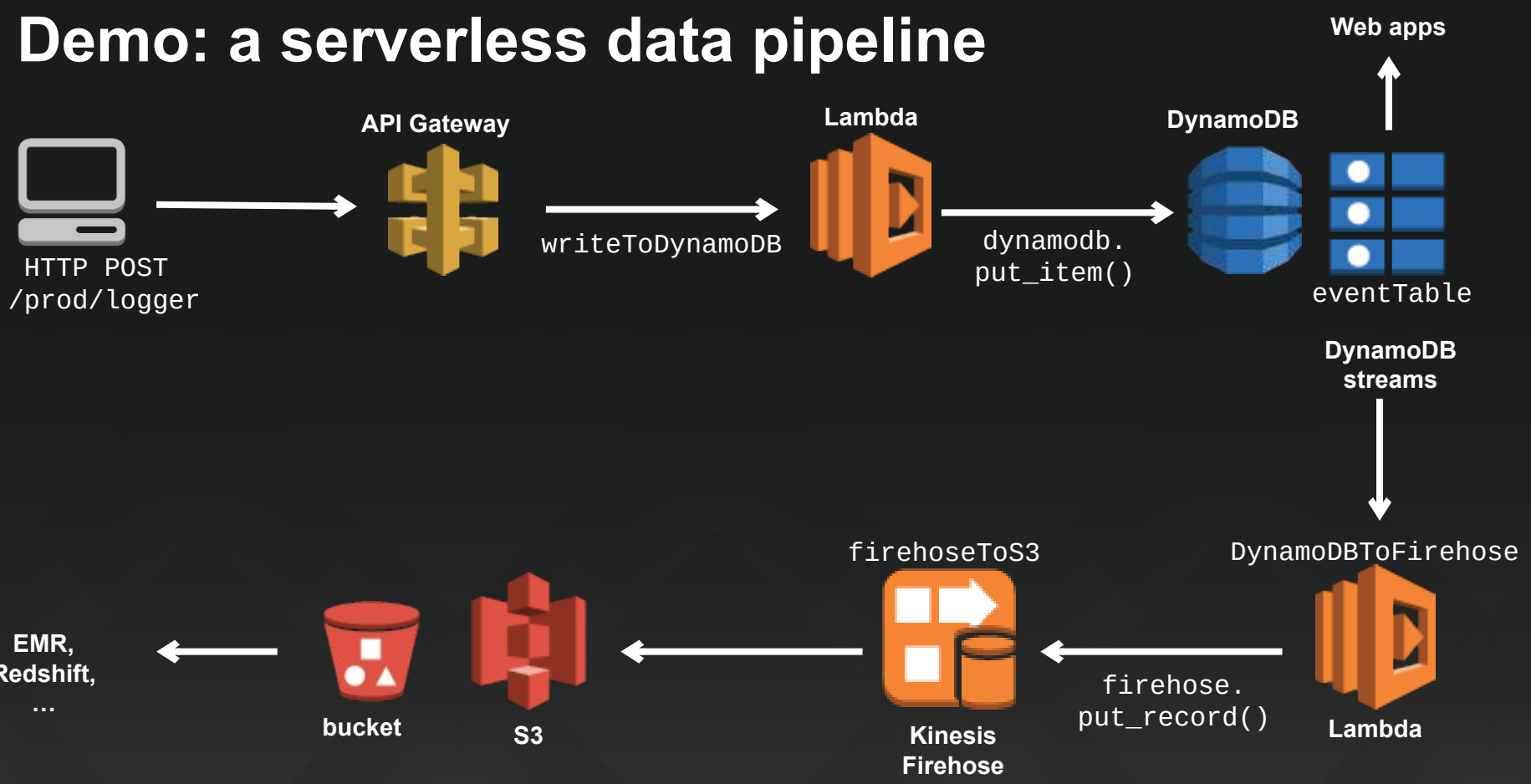
60 billion ad events daily







Demo: a serverless data pipeline



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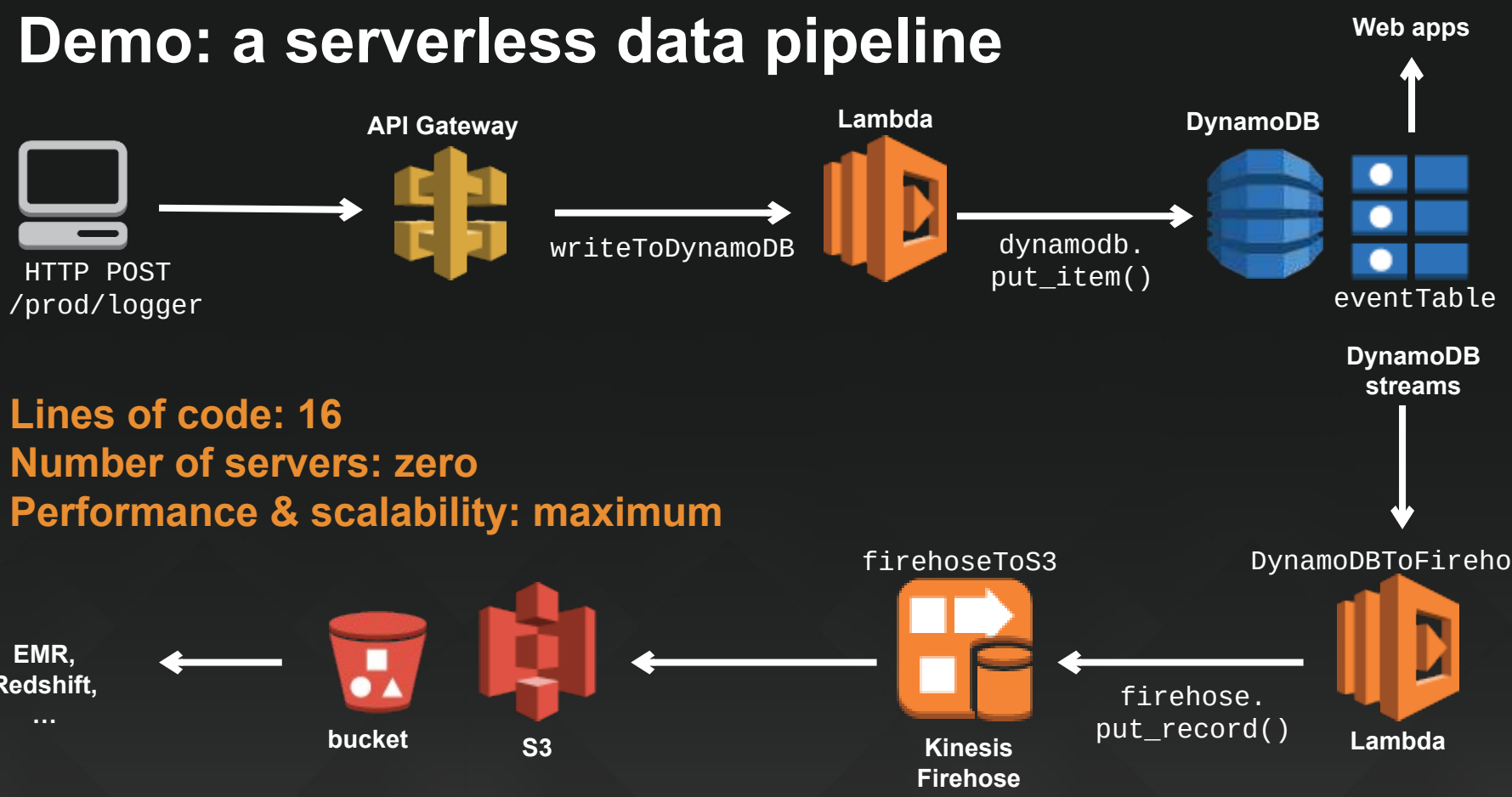


Putting all this together means we should now easily be able to handle 10+ million users!

Supercell: 100 million active users daily

Ilkka Paananen @ipaananen · 7 mars

Voir la traduction

100MILLION! Huge milestone for us,wanted to share some thoughts and a video: supr.cl/100m #welovetuvalu

Hi Everyone,

Today we've announced a major milestone in Supercell's history: **100m daily active players!**

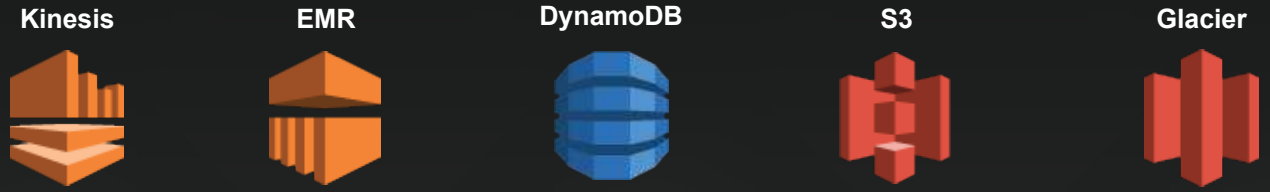
100 million! It blows my mind to think of that many people playing our games all around the world, every single day. I want to thank every single one of them: from Albania to Zimbabwe and everywhere else in between. Wish we had someone from Tuvalu! :-)

https://twitter.com/ipaananen/status/706844089216532480

Case study: Supercell

https://aws.amazon.com/fr/solutions/case-studies/supercell/

45 billion real-time events and 10 TB of data every day



“We don’t have to worry about being able to manage our infrastructure to match our growth — AWS tools make it easy for us.”

Sami Yliharju, Services Lead

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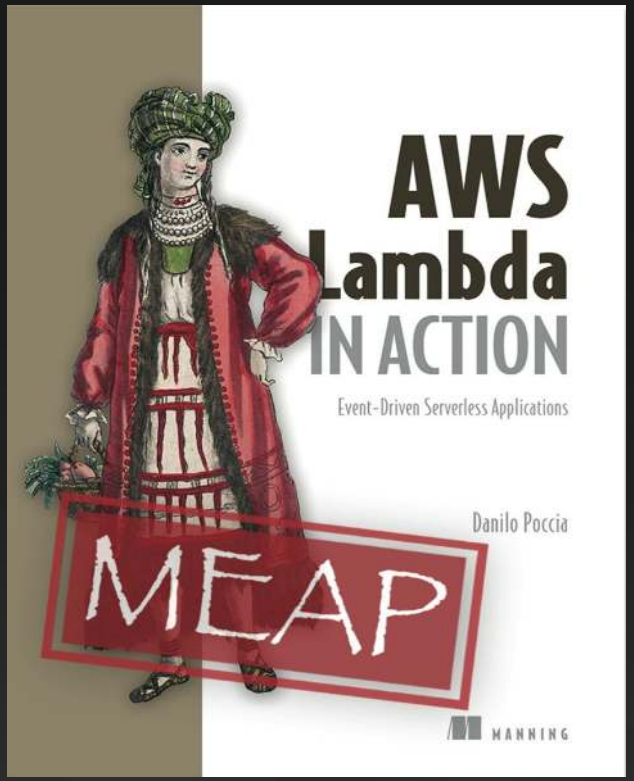
“AWS is the easy answer for any Internet business that wants to scale to the next level”

Nathan Blecharczyk
Co-founder & CTO of Airbnb

https://aws.amazon.com/fr/solutions/case-studies/airbnb/

And now it's your turn!
What will you build?

Upcoming book on AWS Lambda



Written by AWS Technical Evangelist Danilo Poccia

Early release available at:

https://www.manning.com/books/aws-lambda-in-action

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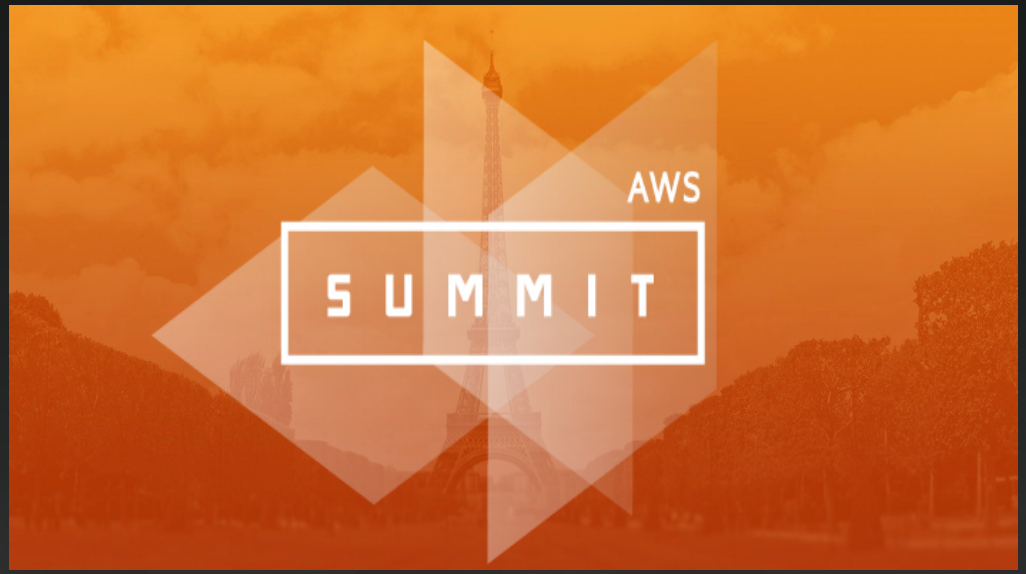
Next events

dot Scale

April 25



May 31st

AWSome Day

June 28
September 27
December 6

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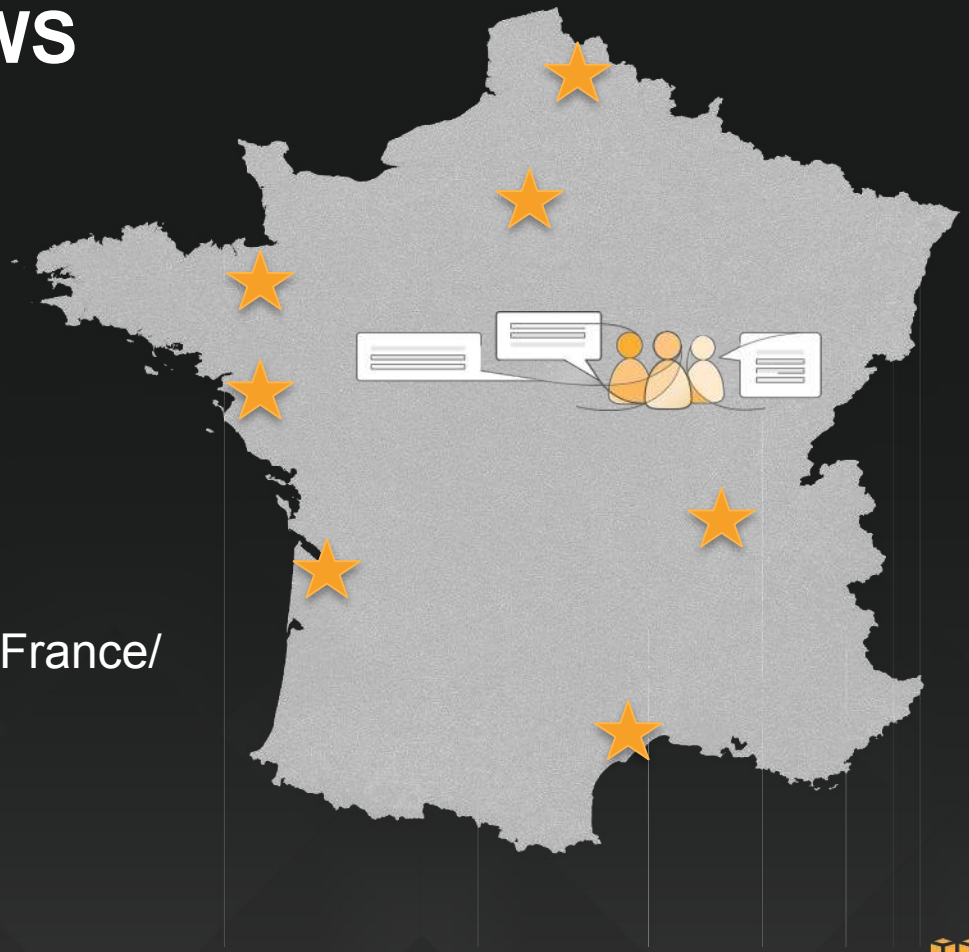
AWS User Groups AWS

Lille
Paris
Rennes
Nantes
Bordeaux
Lyon
Montpellier



facebook.com/groups/AWSFrance/

@aws_actus

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Thank You !

Julien Simon
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