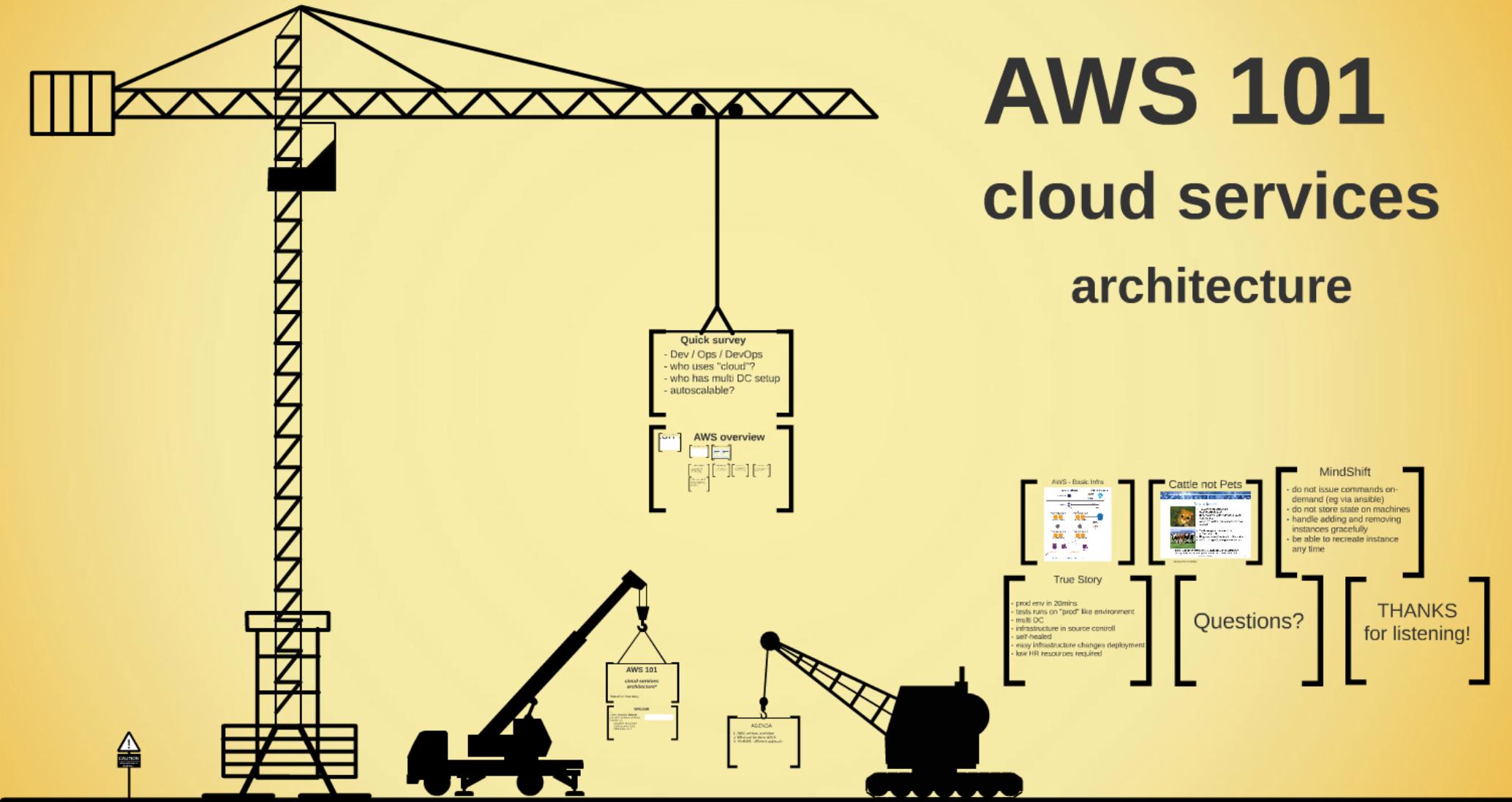


AWS 101

cloud services

architecture

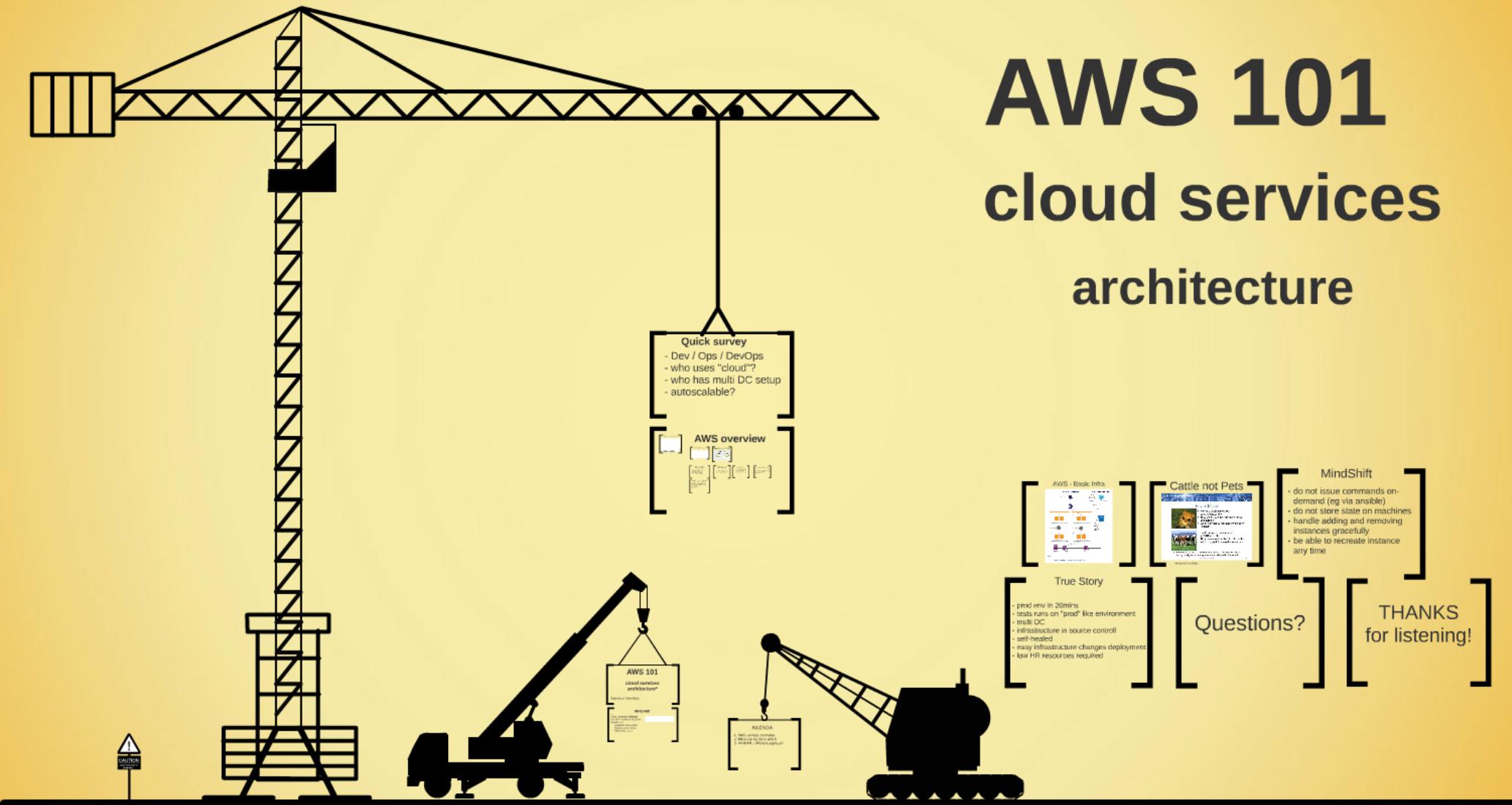




AWS 101

cloud services

architecture



AWS 101

*cloud services
architecture**

*based on true story

WHOAMI

*based on true story

WHOAMI

name: **Szymon Święcki**

job: AWS architect at Ziflow

experience:

- sysadmin since 2004
- DevOps since 2010
- AWS since 2014



AGENDA

1. AWS services overview
2. What can be done with it.
3. Mindshift - different approach.

Quick survey

- Dev / Ops / DevOps
- who uses "cloud"?
- who has multi DC setup
- autoscalable?

AWS overview

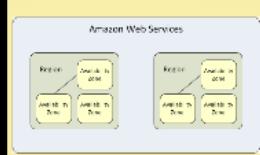
AWS Services Catalogue



AWS Global Network



Regions / Availability Zones



AWS Compute

- EC2 (Elastic Compute Cloud)
- ELB (Elastic Load Balancer)
- ASG (AutoScaling Group)
- AMI (Amazon Machine Image)
- EBS (Elastic Block Storage)

AWS - other useful

- SQS (Simple Queue Service)
- SNS (Simple Notification Service)
- CloudWatch
- CloudFormation!!!

AWS Storage

- S3 (Simple Storage Service)
- EBS (Elastic Block Storage)
- EFS (Elastic File System)

AWS Databases

- RDS (Relational Database Service)
- DynamoDB (AWS NoSQL)
- Redshift (Warehouse DB)
- ElastiCache (Redis, memcached)

AWS Security & Identity

- IAM (Identity Access Management)
- SecurityGroups (firewall)
- Certificate Manager

AWS Services Catalogue

Compute

Amazon EC2
Amazon EC2 Container Registry
Amazon EC2 Container Service
Amazon Lightsail
Amazon VPC
AWS Batch
AWS Elastic Beanstalk
AWS Lambda
Auto Scaling
Elastic Load Balancing

Storage

Amazon Simple Storage Service (S3)
Amazon Elastic Block Storage (EBS)
Amazon Elastic File System (EFS)
Amazon Glacier
AWS Storage Gateway
AWS Snowball
AWS Snowball Edge
AWS Snowmobile

Database

Amazon Aurora
Amazon RDS
Amazon DynamoDB
Amazon ElastiCache
Amazon Redshift
AWS Database Migration Service

Migration

AWS Application Discovery Service
AWS Database Migration Service
AWS Server Migration Service
AWS Snowball
AWS Snowball Edge
AWS Snowmobile

Networking & Content Delivery

Amazon VPC
Amazon CloudFront
Amazon Route 53
AWS Direct Connect
Elastic Load Balancing

Developer Tools

AWS CodeCommit
AWS CodeBuild
AWS CodeDeploy
AWS CodePipeline
AWS X-Ray
AWS Command Line Interface

Management Tools

Amazon CloudWatch
Amazon EC2 Systems Manager
AWS CloudFormation
AWS CloudTrail
AWS Config
AWS OpsWorks
AWS Service Catalog
AWS Trusted Advisor
AWS Personal Health Dashboard
AWS Command Line Interface
AWS Management Console
AWS Managed Services

Security, Identity & Compliance

AWS Identity and Access Management (IAM)
Amazon Inspector
AWS Certificate Manager
AWS CloudHSM
AWS Directory Service
Amazon Cloud Directory
AWS Key Management Service
AWS Organizations
AWS Shield
AWS WAF
AWS Artifact

Analytics

Amazon Athena
Amazon EMR
Amazon CloudSearch
Amazon Elasticsearch Service
Amazon Kinesis
Amazon Redshift
Amazon QuickSight
AWS Data Pipeline
AWS Glue

Artificial Intelligence

Amazon Lex
Amazon Polly
Amazon Rekognition
Amazon Machine Learning

Mobile Services

AWS Mobile Hub
Amazon API Gateway
Amazon Cognito
Amazon Pinpoint
AWS Device Farm

Application Services

AWS Step Functions
Amazon API Gateway
Amazon Elastic Transcoder
Amazon AppStream

Messaging

Amazon SQS
Amazon Pinpoint
Amazon SES
Amazon SNS

Business Productivity

Amazon Chime
Amazon WorkDocs
Amazon WorkMail

Desktop & App Streaming

Amazon WorkSpaces
Amazon AppStream 2.0

Software

AWS Marketplace

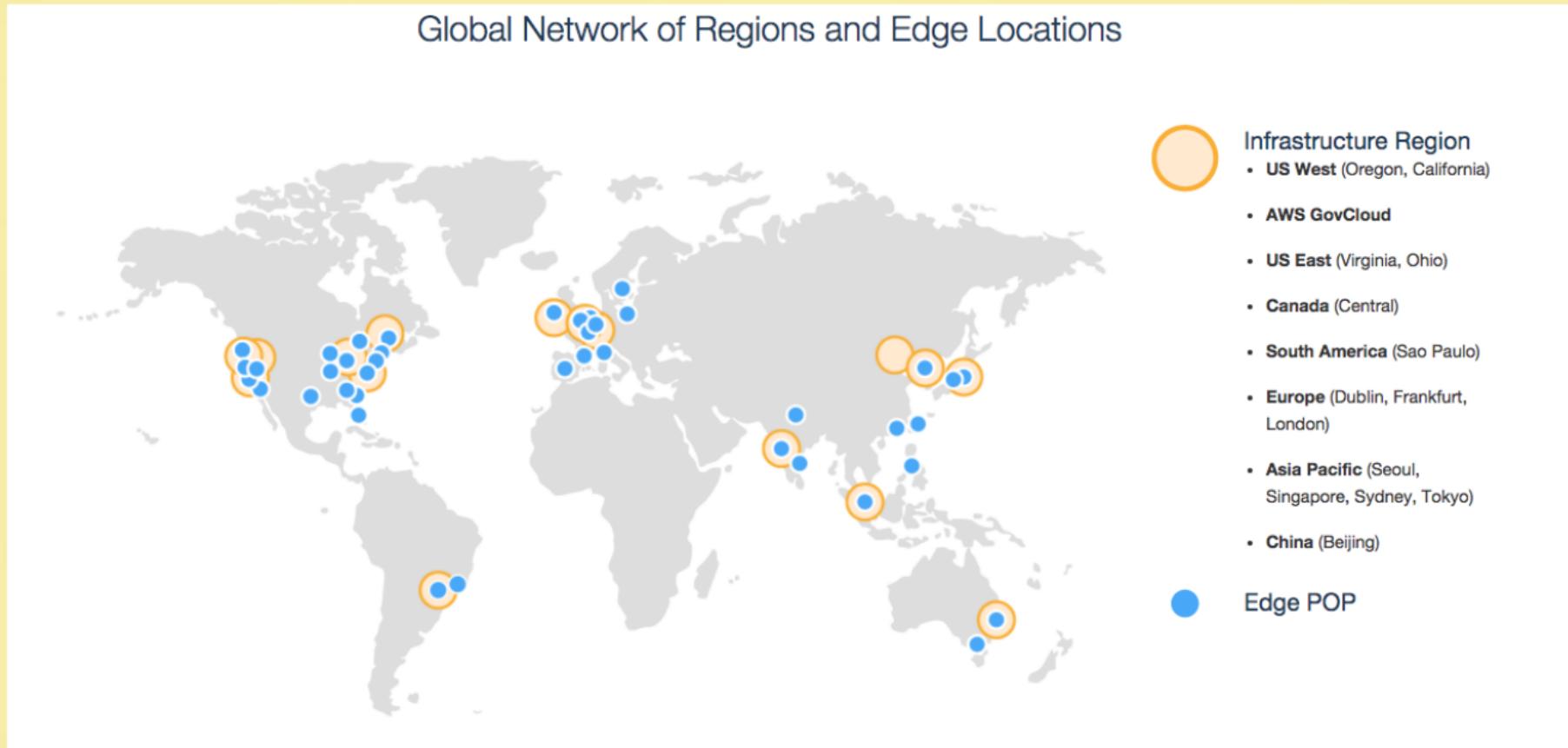
Internet of Things

AWS IoT Platform
AWS Greengrass
AWS IoT Button

Game Development

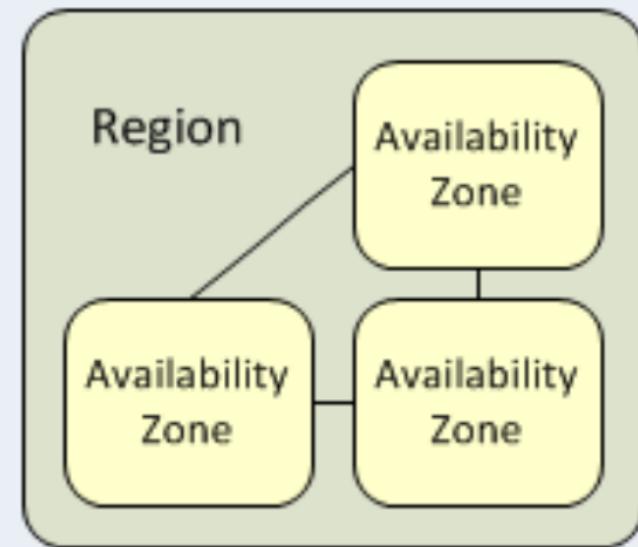
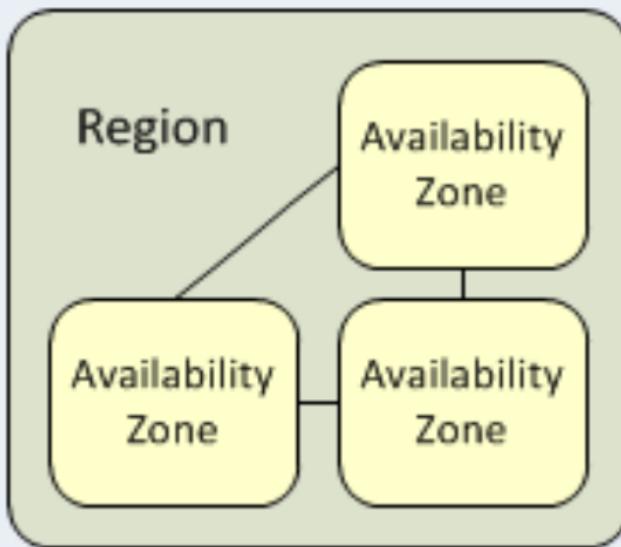
Amazon GameLift
Amazon Lumberyard

AWS Global Network



Regions / Availability Zones

Amazon Web Services



AWS Compute

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- EBS (Elastic Block Storage)

AWS Storage

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AWS Databases

- RDS (Relational Database Service)
- DynamoDB (AWS NoSql)
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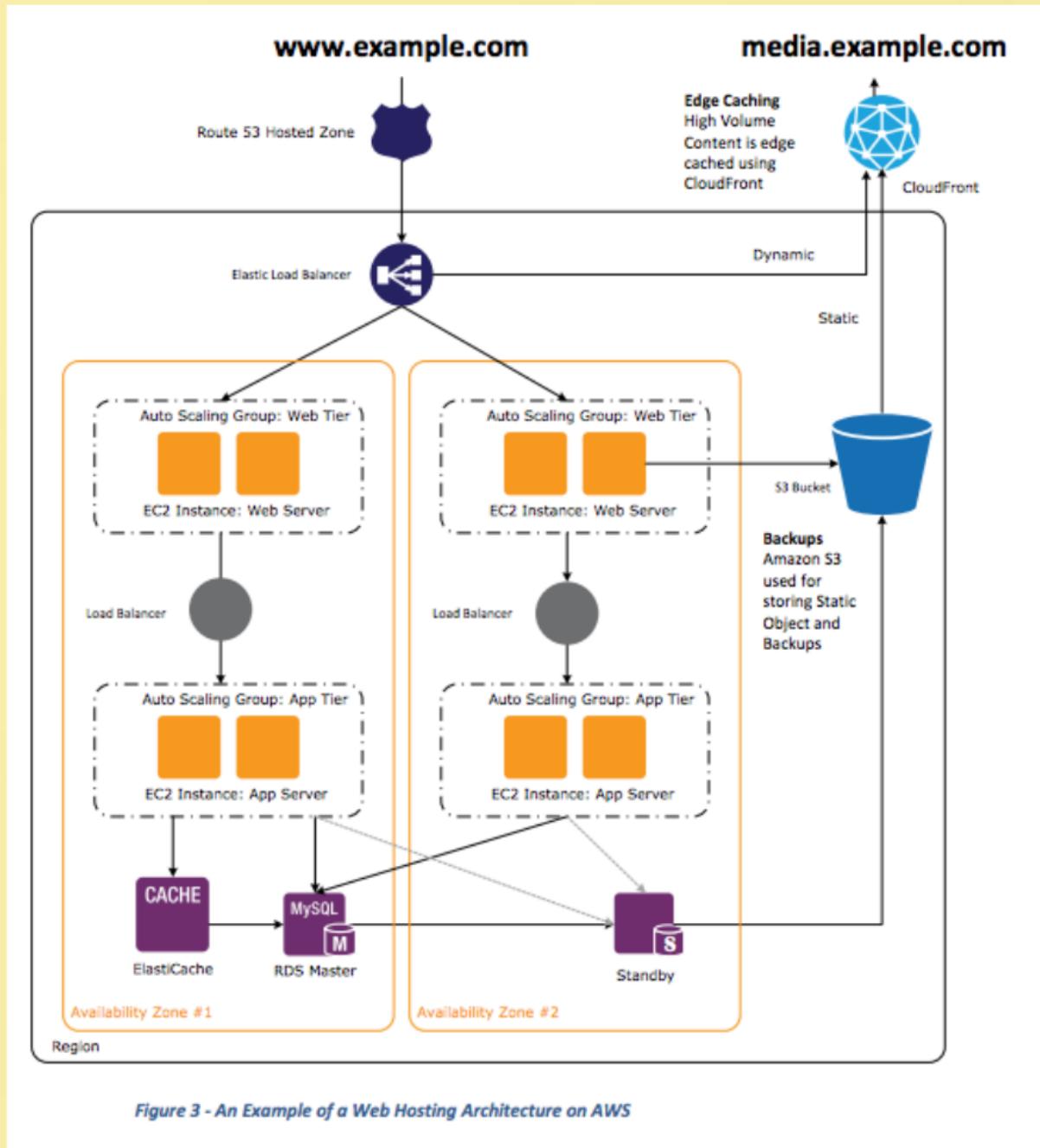
AWS Security & Identity

- IAM (Identity Access Management)
- SecurityGroups (firewall)
- Certificate Manager

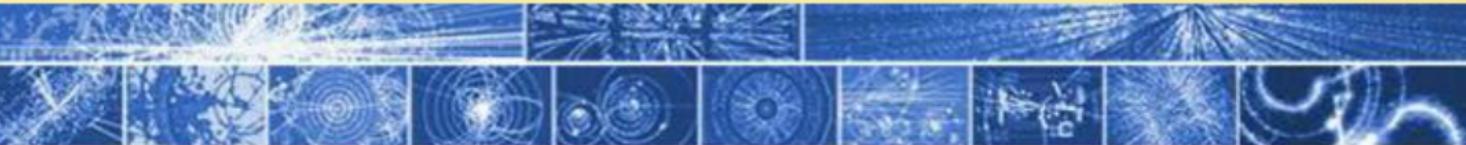
AWS - other usefull

- SQS (Simple Queue Service)
- SNS (Simple Notification Service)
- CloudWatch
- CloudFormation!!!

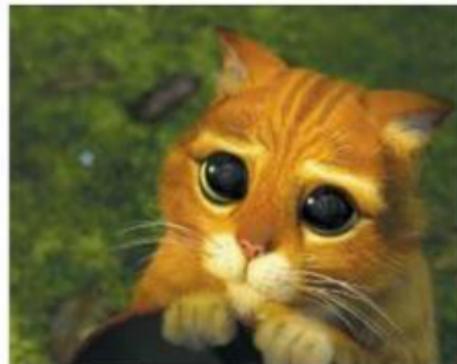
AWS - Basic Infra



Cattle not Pets



Service Model



- Pets are given names like `pussinboots.cern.ch`
- They are unique, lovingly hand raised and cared for
- When they get ill, you nurse them back to health



- Cattle are given numbers like `vm0042.cern.ch`
- They are almost identical to other cattle
- When they get ill, you get another one

- Future application architectures should use Cattle but Pets with strong configuration management are viable and still needed

Gavin McCance, CERN

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*wordpress example

MindShift

- do not issue commands on-demand (eg via ansible)
- do not store state on machines
- handle adding and removing instances gracefully
- be able to recreate instance any time



True Story

- prod env in 20mins
- tests runs on "prod" like environment
- multi DC
- infrastructure in source control
- self-healed
- easy infrastructure changes deployment
- low HR resources required



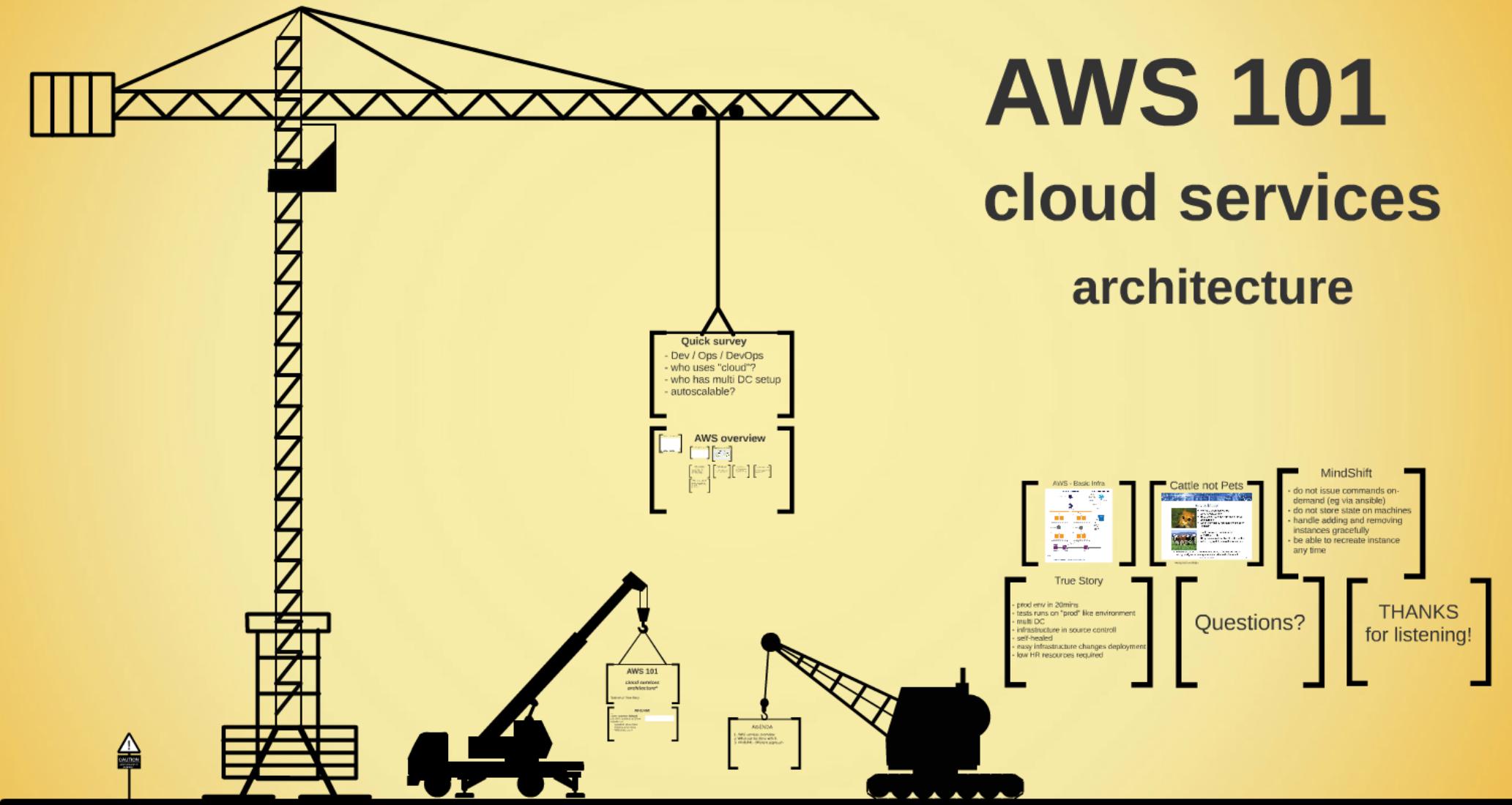
Questions?



AWS 101

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**THANKS
for listening!**