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Cloud Computing #5
Demo with AWS

Akitaka Matsuo
Essex IADS

Some background of AWS

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- Publicly launched in 2006 with EC2 and S3
- Intended to utilize the redundant computing resource at AWS
- Over three thousand services as of summer 2017

Core Services

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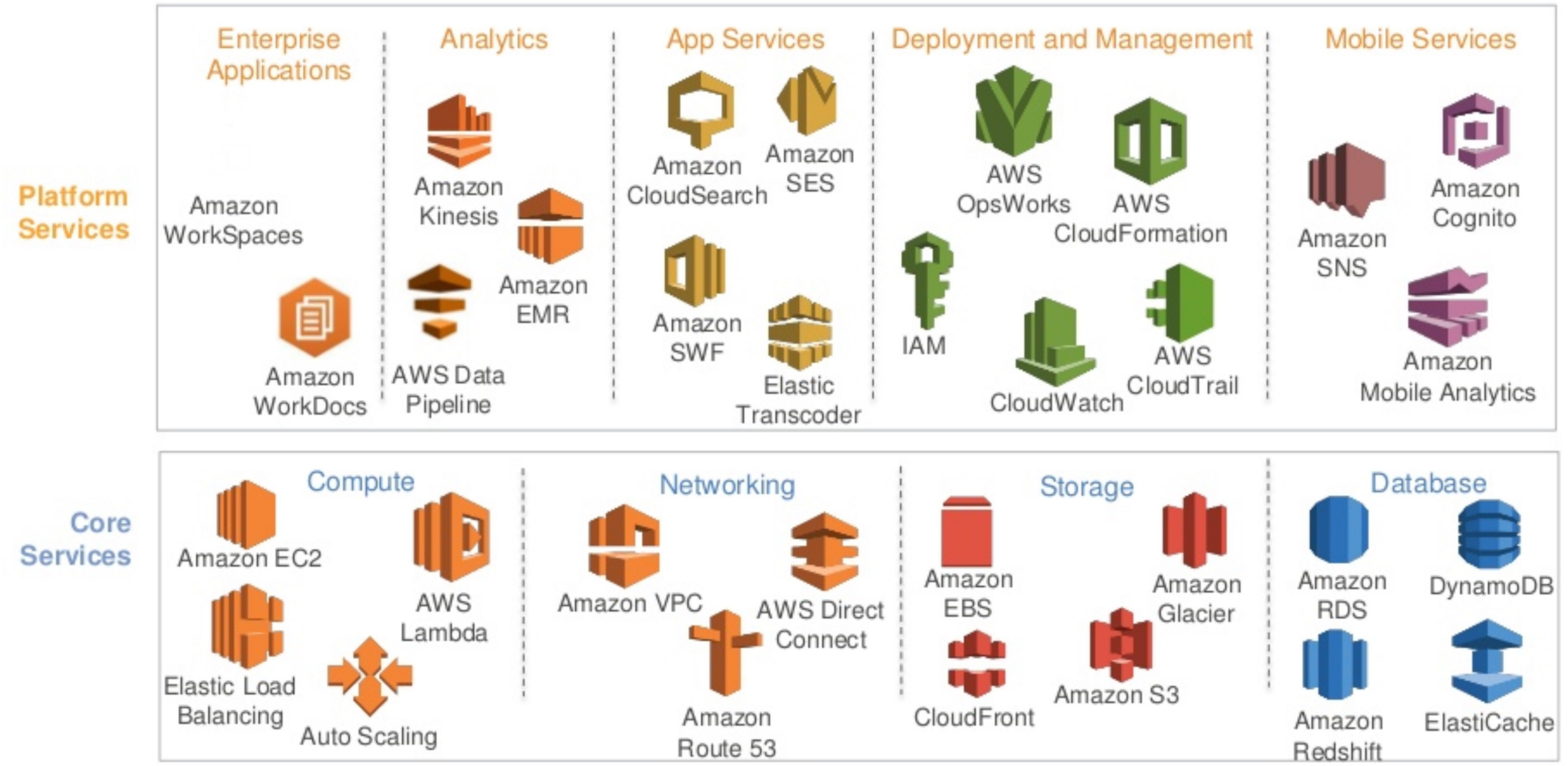

aws_services

Core services (1): EC2

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- EC2 = Elastic Computing Cloud
- What it is:
  - Virtual machine on a cloud
- How it works:
  - Configure the machine setup then launch
- Pricing
  - CPU usage + storage capacity + network traffic

Core services (1): EC2

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EC2 Configurations include:

- Machine capacity (CPU/Memory/Storage)
- Network
  - Inbound/outbound restrictions
  - “Security group”
- Machine image (AMI)
  - Operation systems (Linux/Windows)
  - Additional software
  - Customized images are available
    - Both free and proprietary

Core services (2): S3

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- S3 = Simple Storage Service
- What it is:
  - Object-based storage service
- How it works:
  - Create a bucket (=folder), then put objects (=files)
- Pricing:
  - Size of stored objects
    - different prices for different types of services (reliability/durability)
  - Network traffic
- Notes:
  - each object has a url and if the bucket/object is public, it's publicly accessible

AWS Academy

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- In this lab, we use AWS Academy Lab
  - Every student will get an invitation link
  - When you accept you get $100 AWS credit
  - Using the credit you can use various AWS services including
    - EC2, S3, Amazon RDS etc
    - Unfortunately EC2 stops when the lab ends (but you can resume)
  - The lab expires in December

If you want to keep using AWS, you may want to open a real account

Free-tier

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When you open an account, AWS gives you a lot of free resources for the first 12 months, including:

- EC2 (t2-micro, 750 hr/month, running one instance all the time)
- S3 (5GB)
- Lambda (1M calls/month)
- RDS (750 hr/month) + DynamoDB (25GB)

https://aws.amazon.com/free

Week 5 Class

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In the class, we will actually do some work with AWS.

Before the class

- Accept the invitation to the AWS Academy classroom (create AWS Academy Account)
  - This account will let you play with AWS without financial/security risk (i.e. account compromised)

In the class, we do:

- Set up an EC2 instance and run python on it
  - Jupyter notebook
  - Run Python scripts for data acquisition from the internet