

AWS and PostgreSQL

Štěpán Bechynský

Cloud and Web Services Senior Specialist

MSD IT Global Innovation Center @ Prague

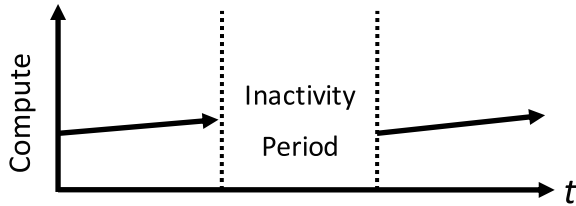
@stepanb

Basics of cloud computing

CLOUD

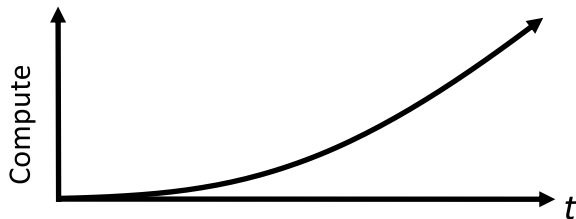
Cloud Computing Patterns

On and Off



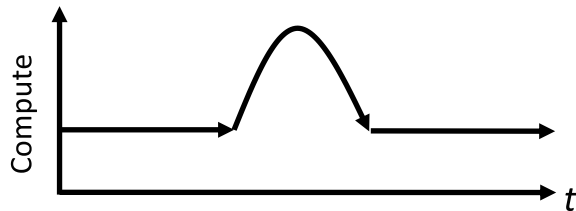
On & off workloads (e.g. batch job)
Over provisioned capacity is wasted
Time to market can be cumbersome

Growing Fast



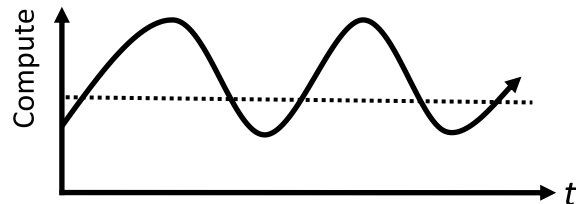
Successful services needs to grow/scale
Keeping up w/ growth is big IT challenge
Cannot provision hardware fast enough

Unpredictable Bursting



Unexpected/unplanned peak in demand
Sudden spike impacts performance
Can't over provision for extreme cases

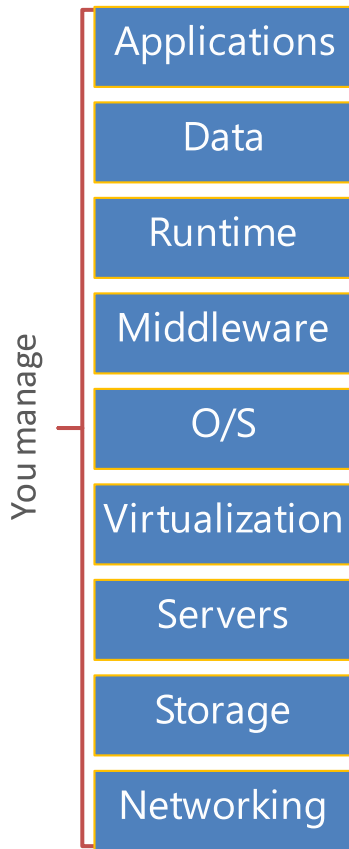
Predictable Bursting



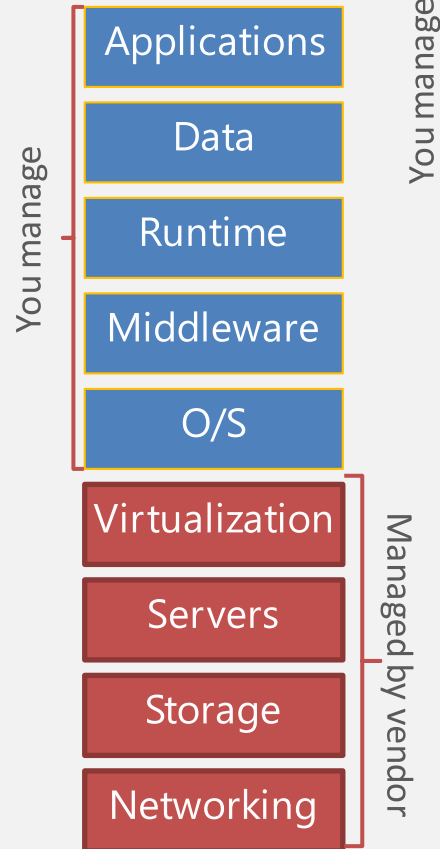
Services with micro seasonality trends
Peaks due to periodic increased demand
IT complexity and wasted capacity

Cloud Computing Variants

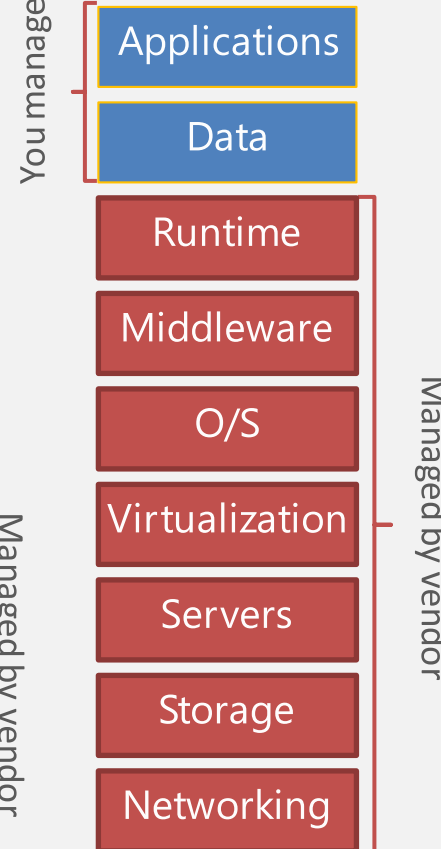
Packaged Software



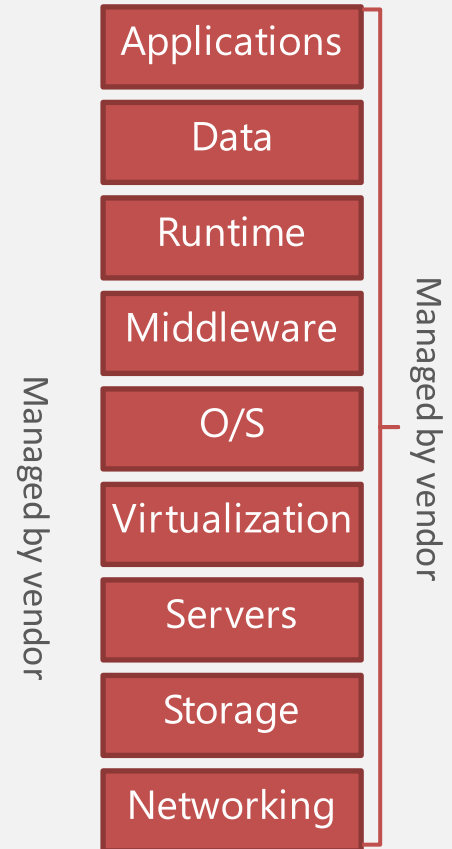
Infrastructure (as a Service)



Platform (as a Service)



Software (as a Service)



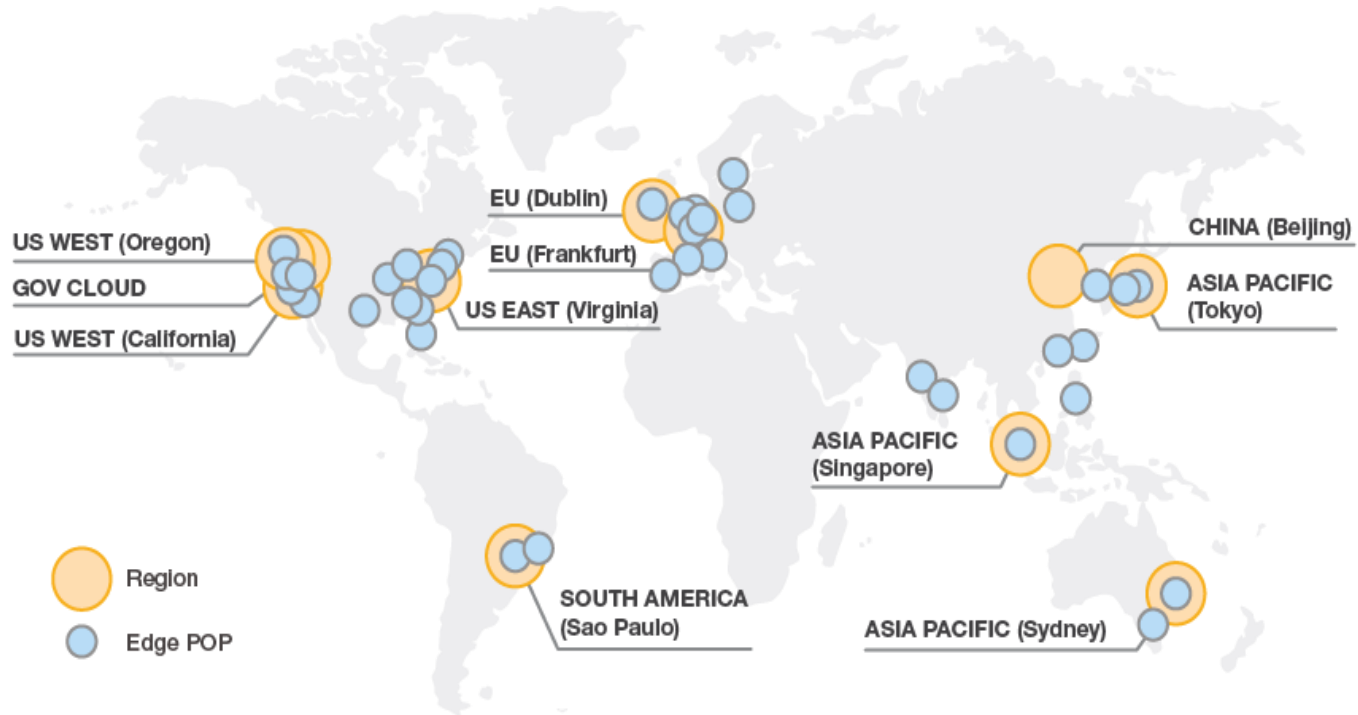
Database as Platform

- You maintain just database and security
- Automatic backups
- You have limited access to database server
- You have no access to operating system

Amazon Web Services

AWS

Regions and availability zones



Identity and Access Management

- Main security tool
- IAM controls who can do what in your account
- Manage access to AWS

The screenshot displays the AWS IAM console interface. At the top, there is a navigation bar with the AWS logo, 'Services', and 'Edit' dropdowns. A left-hand navigation menu lists various IAM components: Dashboard (highlighted), Details, Groups, Users, Roles, Identity Providers, Password Policy, Credential Report, and Encryption Keys. The main content area is titled 'Welcome to Identity and Access Management' and contains the following information:

- IAM users sign-in link:** <https://mercklabcloud.signin.aws.amazon.com/console> with 'Customize' and 'Copy Link' options.
- IAM Resources:**
 - 133 User(s)
 - 38 Role(s)
 - 44 Group(s)
 - 0 Identity Provider(s)
- Security Status:** A progress bar indicates '5 out of 5 complete'. Below it is a list of five security recommendations, all of which are checked as complete:
 - Activate MFA on your root account
 - Create individual IAM users
 - Use groups to assign permissions
 - Apply an IAM password policy
 - Rotate your access keys

Identity and Access Management

DEMO

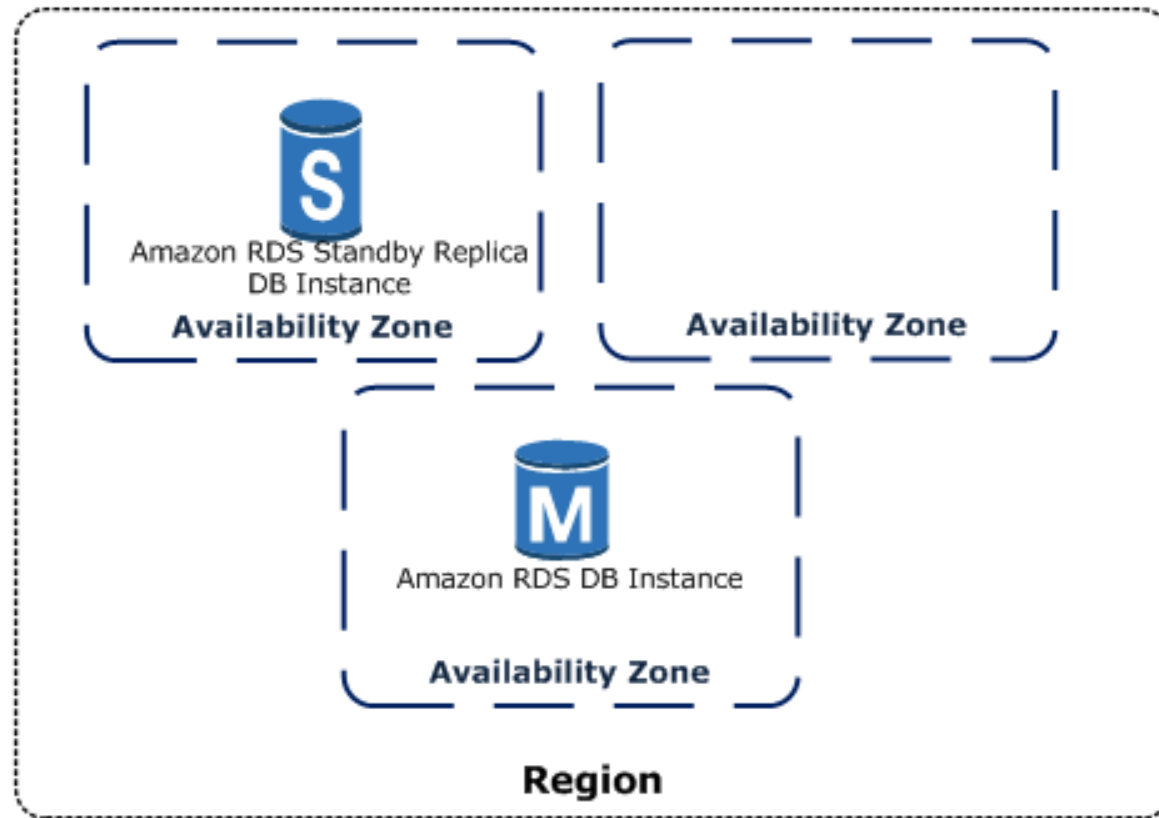
Amazon RDS

- Database as Platform
- Supports
 - Aurora
 - MS SQL
 - MySQL
 - ORACLE
 - PostgreSQL

PostgreSQL

- 9.3.3, 9.3.5
- Data encrypting
- Read replicas (standby)
- Monitoring
- Alternative – run database on EC2 instance

Availability



Run PostgreSQL using Management Console

DEMO

Security groups

- Firewall
- Internal (inside data center) rules
- External (internet) rules

Security groups

DEMO

Amazon SDK and Tools

- Automation scripts
- SDK supports different programming languages
- Security
 - EC2 instances roles
 - Keys

Create snapshot using AWS Cli

DEMO

Some questions?

Q & A