BeSA

We will be starting at 8.00 AM GMT

Agenda

1. Amazon EC2

2. Amazon EC2 Use Case

   – Christelle

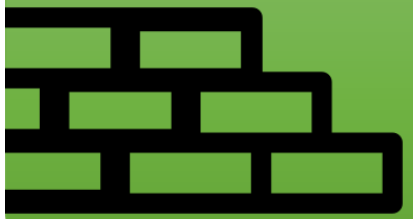
3. How to transition from non-tech domain to Cloud?

   – Prasad and Jamila

AWS Services Stack

Platform Services

- Databases
- Analytics
- App Services
- Deployment
- Mgmt.
- Many More…



Foundation Services

- Compute
- Networking
- Storage

Global Infrastructure

- Regions
- Availability Zones
- Edge Locations

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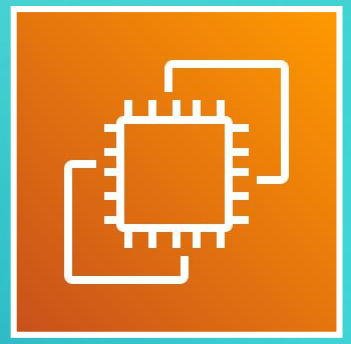
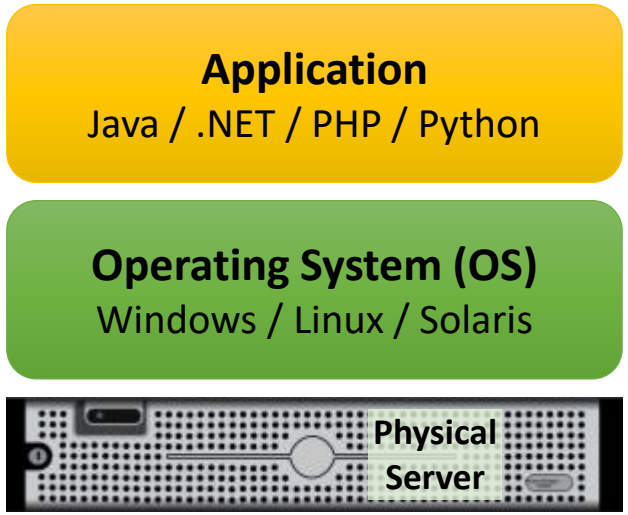
Compute - Amazon Elastic Compute Cloud (EC2)



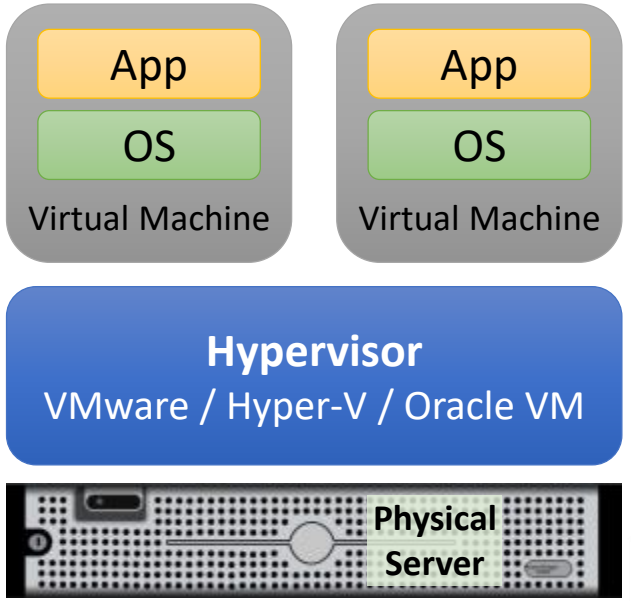
Amazon EC2

Physical Server vs. Virtual Machine



Traditional Approach

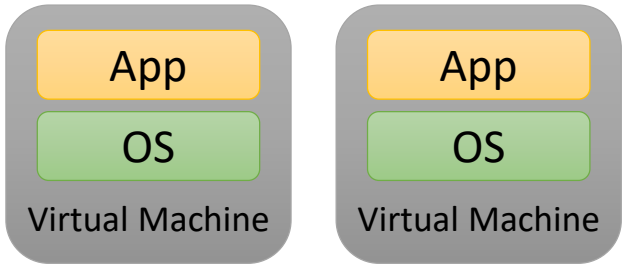
Average Server Utilization ~ 5/10 %



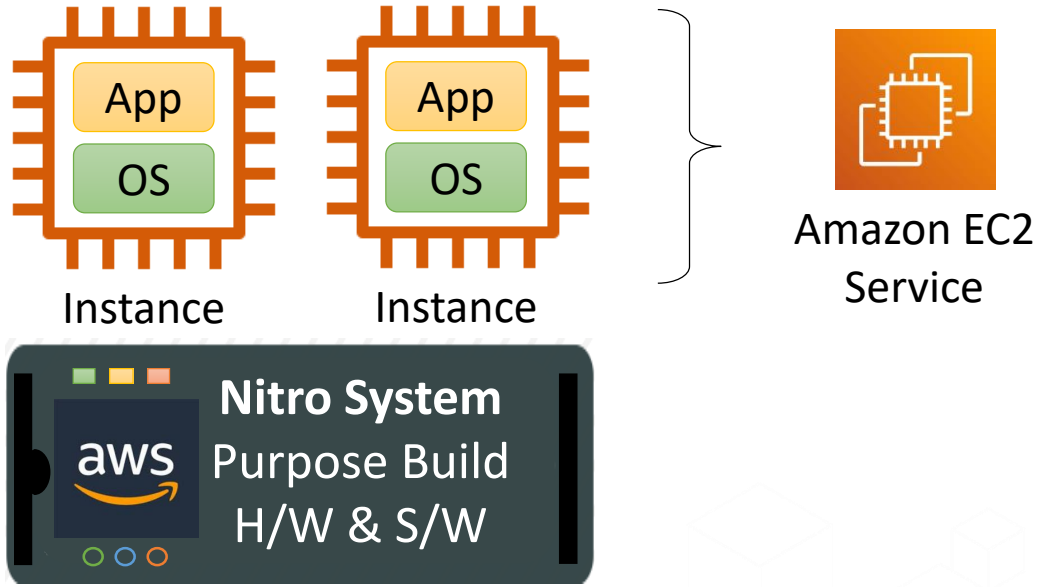
Virtualization Approach

Average Server Utilization ~ 70/80 %

Amazon Elastic Compute Cloud (EC2) – Virtual Server in Cloud



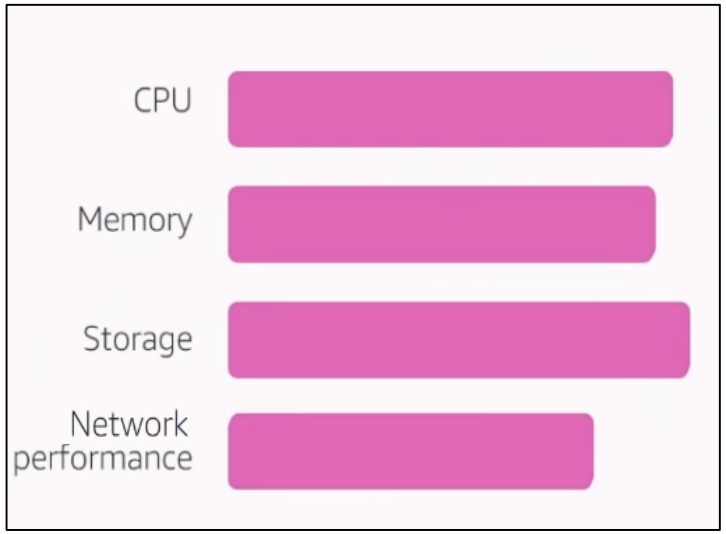
Virtualization Approach



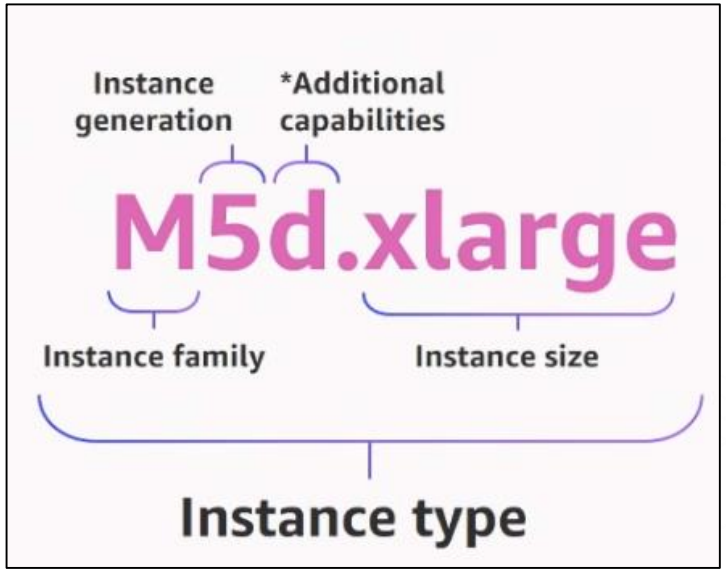
AWS Approach

Provisioning an EC2 Instance

- AMI – Amazon Machine Image
  - Template of common OS images
    - Quick Start
    - My AMI
    - Marketplace
    - Community



- Instance Type
  - Performance Characteristics
  - Optimized for different workloads
  - Elastic – Can be changed later
  - Region Specific



User Data

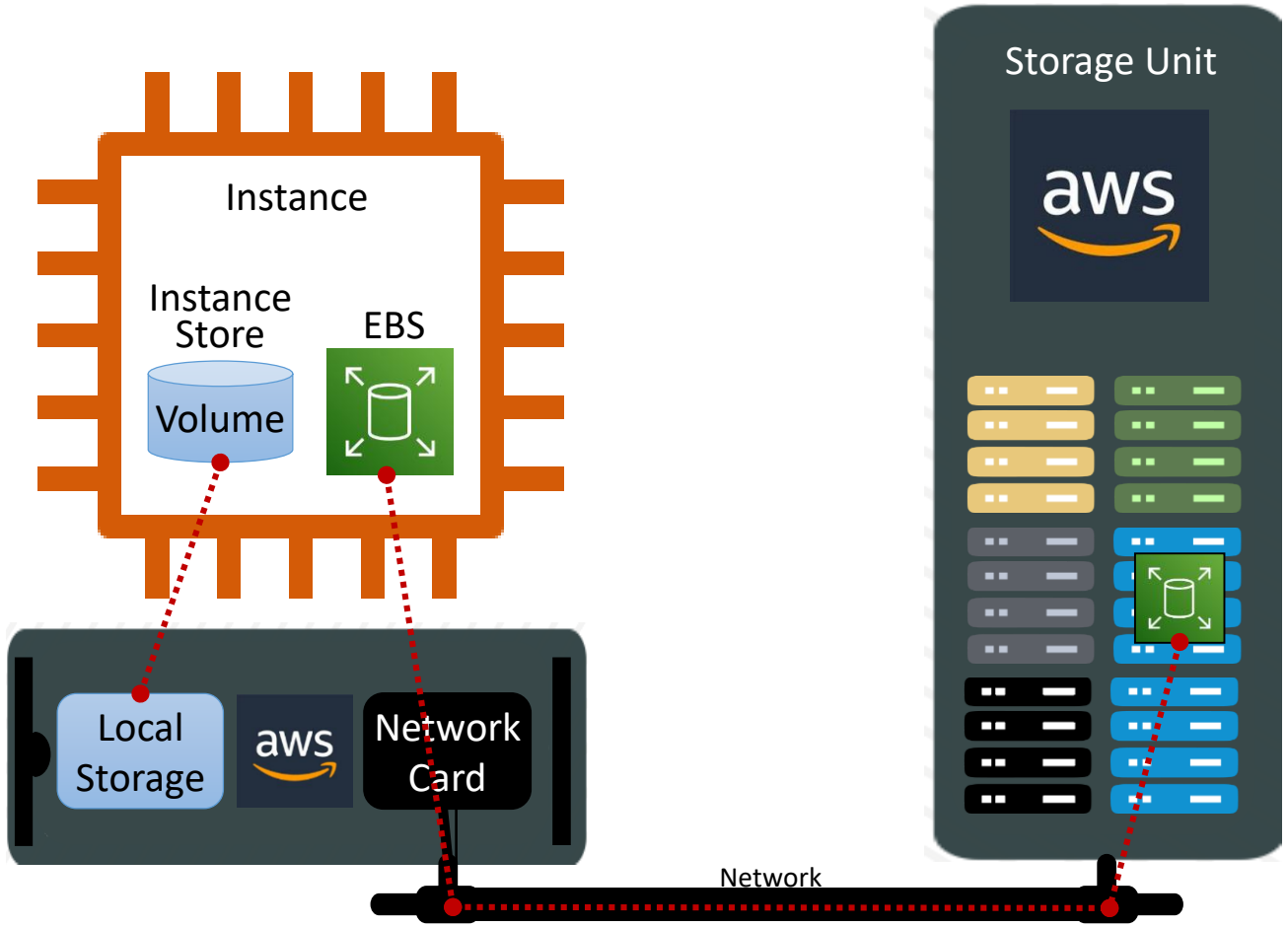
- Customize your instance at launch

```
#!/bin/bash
yum update -y
yum install httpd -y
echo "<html><body><center><h1>Welcome to AWS. Here is my web  page!
</h1></center></body></html>" > /var/www/html/index.html
systemctl start httpd
systemctl enable httpd
```

EC2 Storage Options

EC2 Storage Options – Block Storage

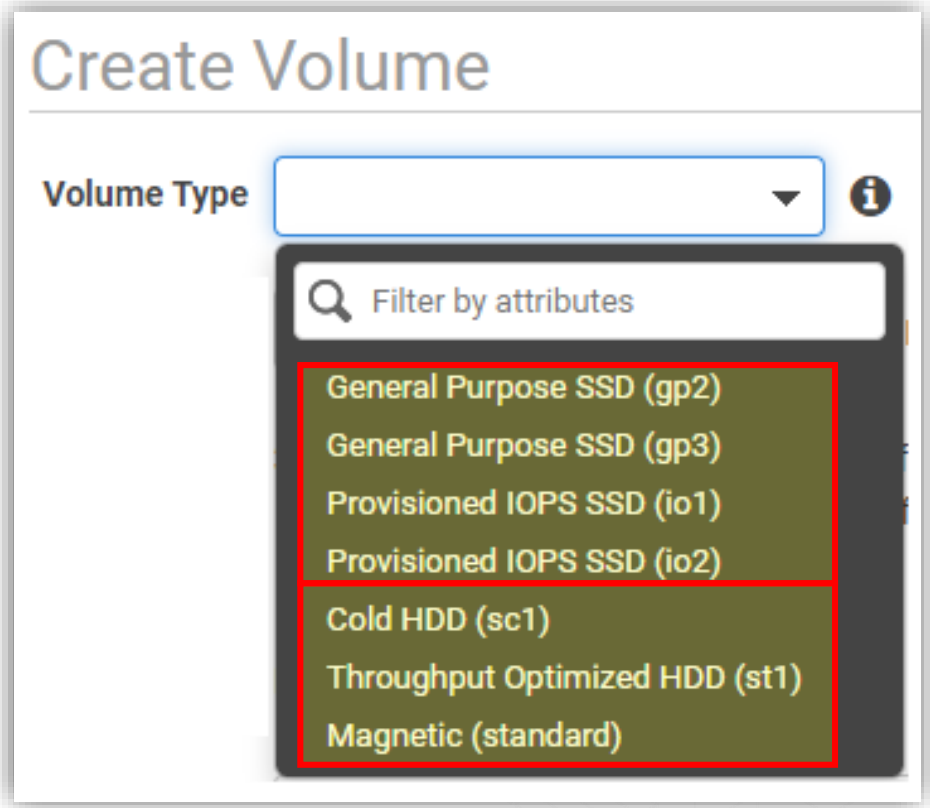
- Instance Store
  - Local Storage
  - Ephemeral
  - Limited Size
  - Not available on all instance types
  - Use case
    - Swap space
    - Temp. Storage

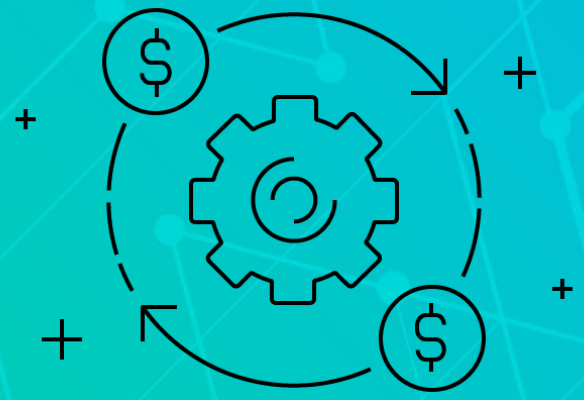


- Elastic Block Store (EBS)
  - Over Network
  - Persistent Storage
  - 16 TB Max Size
  - Choice of volume types
  - EBS Optimized instance type*
  - Use case
    - Any block storage need (OS/DB/Log)

Amazon EBS Volume

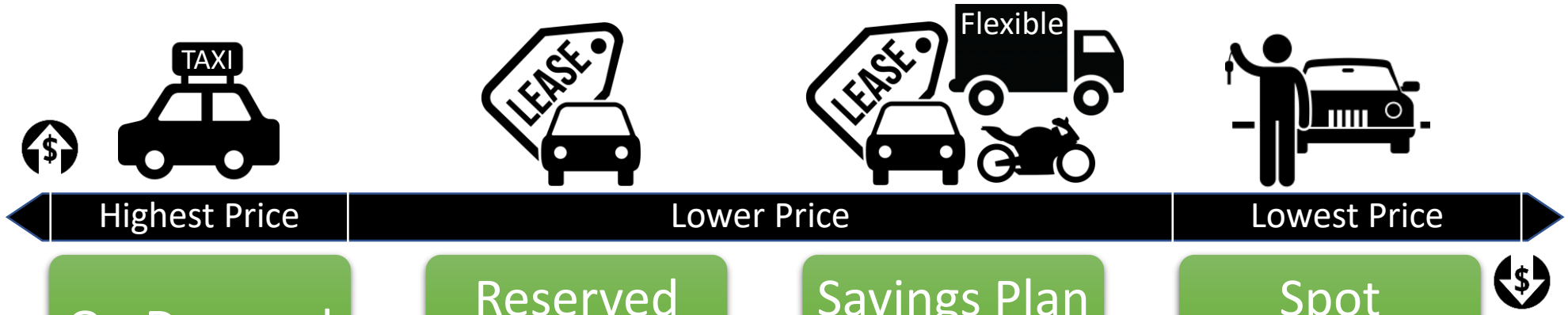
- Specific to a AZ
- Choose based on performance/cost need
- Can be expanded (can’t shrink)
- Supports Snapshot
- Snapshots can be copied to another Region
- Attached to Single EC2 Instance*
- Supports Encryption





EC2 Instance Pricing

EC2 Purchase Options



On Demand

- Pay by second – Amazon Linux Ubuntu and Windows
- Pay by hours – Other Operating Systems
- Unpredictable workload

Reserved Instance

- 1 Year or 3 Year commitment
- Long running and predictable workload
- Reserve Region / AZ / Instance Type / OS

Savings Plan (RI 2.0)

- Commitment of a fixed payment
- Flexible in terms of reservation

Spot Instance

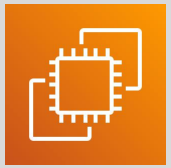
- Unused capacity of AWS infrastructure
- Supply and demand based pricing

Reference:

FAQs

Category:

Compute



Amazon EC2

What?

- Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable computing capacity—literally, servers in Amazon's data centers—that you use to build and host your software systems.
- An instance is a virtual server in the AWS Cloud.

Why?

- Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change.
- Amazon EC2 changes the economics of computing by allowing you to pay only for capacity that you actually use.

When?

- Run cloud-native and enterprise applications, Scale for HPC applications, Develop for Apple platforms.
- You want complete control of your computing resources and run it on Amazon’s proven computing environment.
- You want to import your virtual machine images to Amazon EC2.

Where?

- Amazon EC2 is a regional service. An EC2 Instance runs in an Availability Zone.
- By launching instances in separate Availability Zones, you can protect your applications from failure of a single location.

Who?

- Customer must take care of OS patches, high availability and scaling. AWS provides tools and services for Patch Management, Auto Scaling, Monitoring, Backup and Vulnerability Scanning.

How?

- Select an AMI (Amazon Machine Image) >> Select Instance Type >> Select Additional Settings (Disk Size / Security Group Setting / Network / Start-up Script etc.).

Created by:

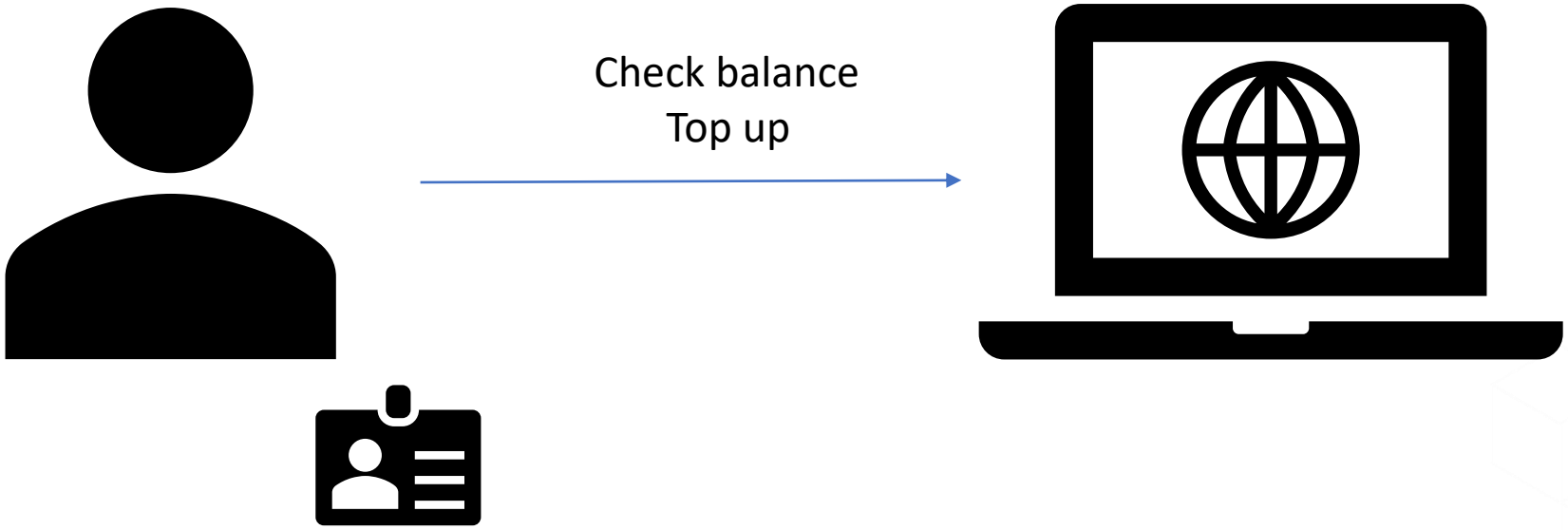
Ashish Prajapati

How much?

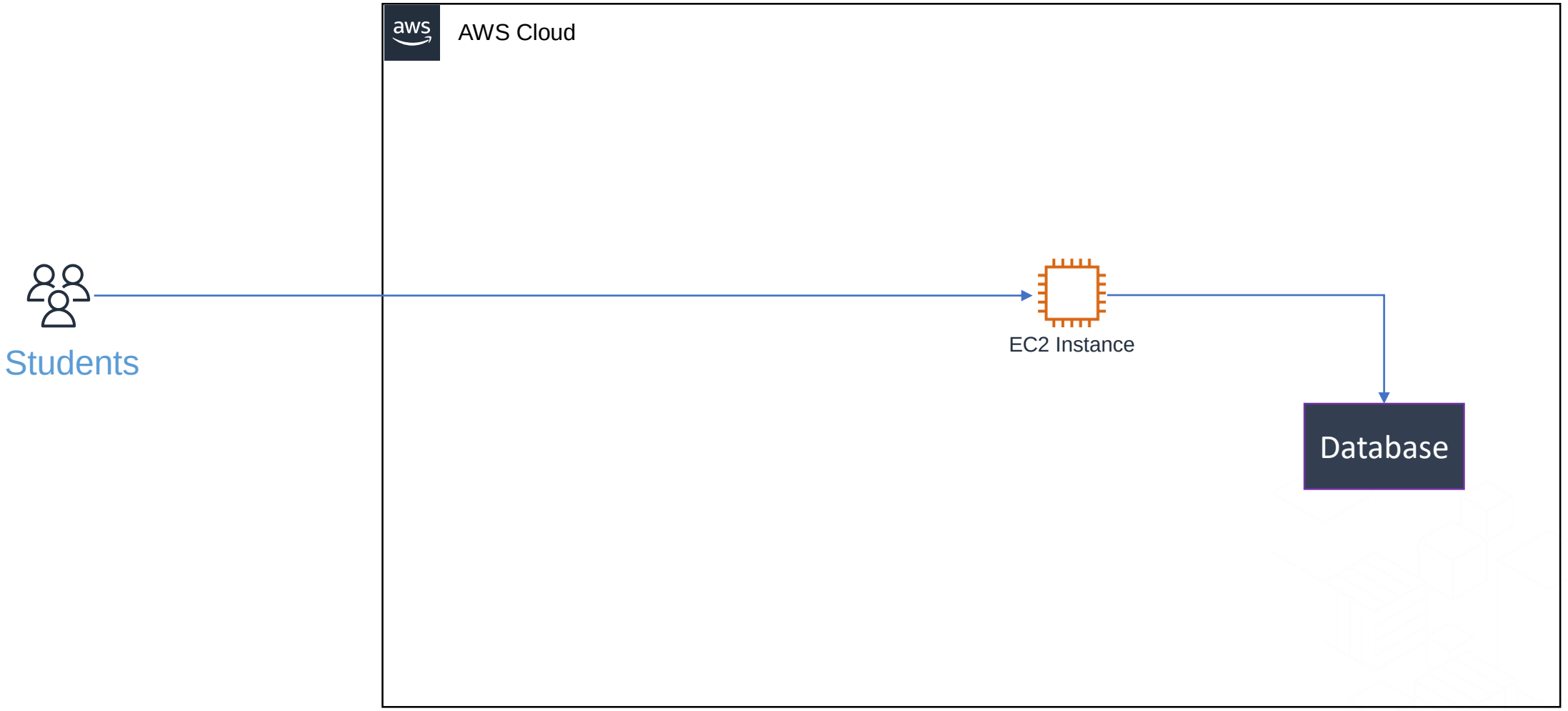
- On-Demand Instance – Pay per second / hour.
- Reserved Instances / Savings Plan – Commitment for 1-year / 3-year term.
- Spot Instances – Supply and Demand based pricing. May be terminated by AWS after giving a 2 min notice.

Amazon EC2 Use Case - Christelle

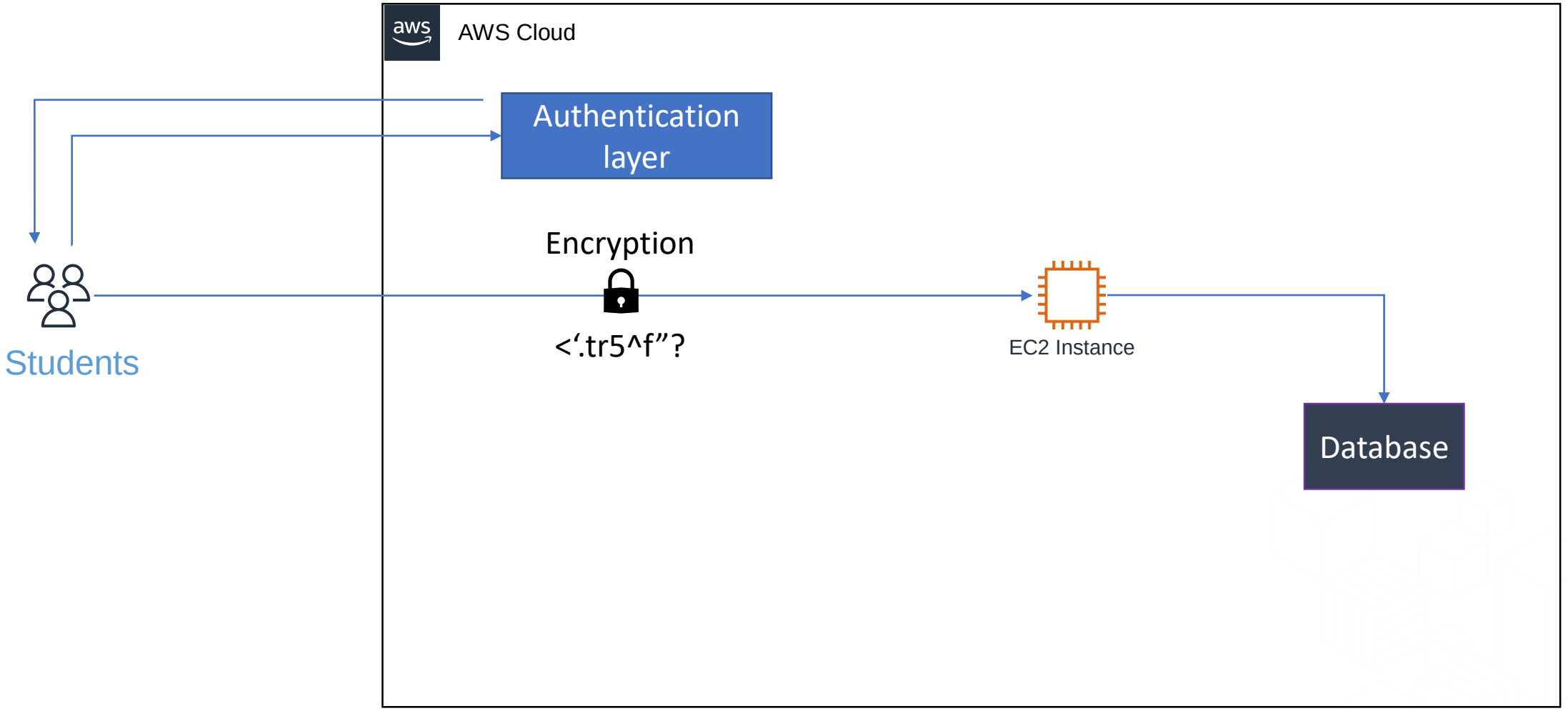
Online top up – school catering service



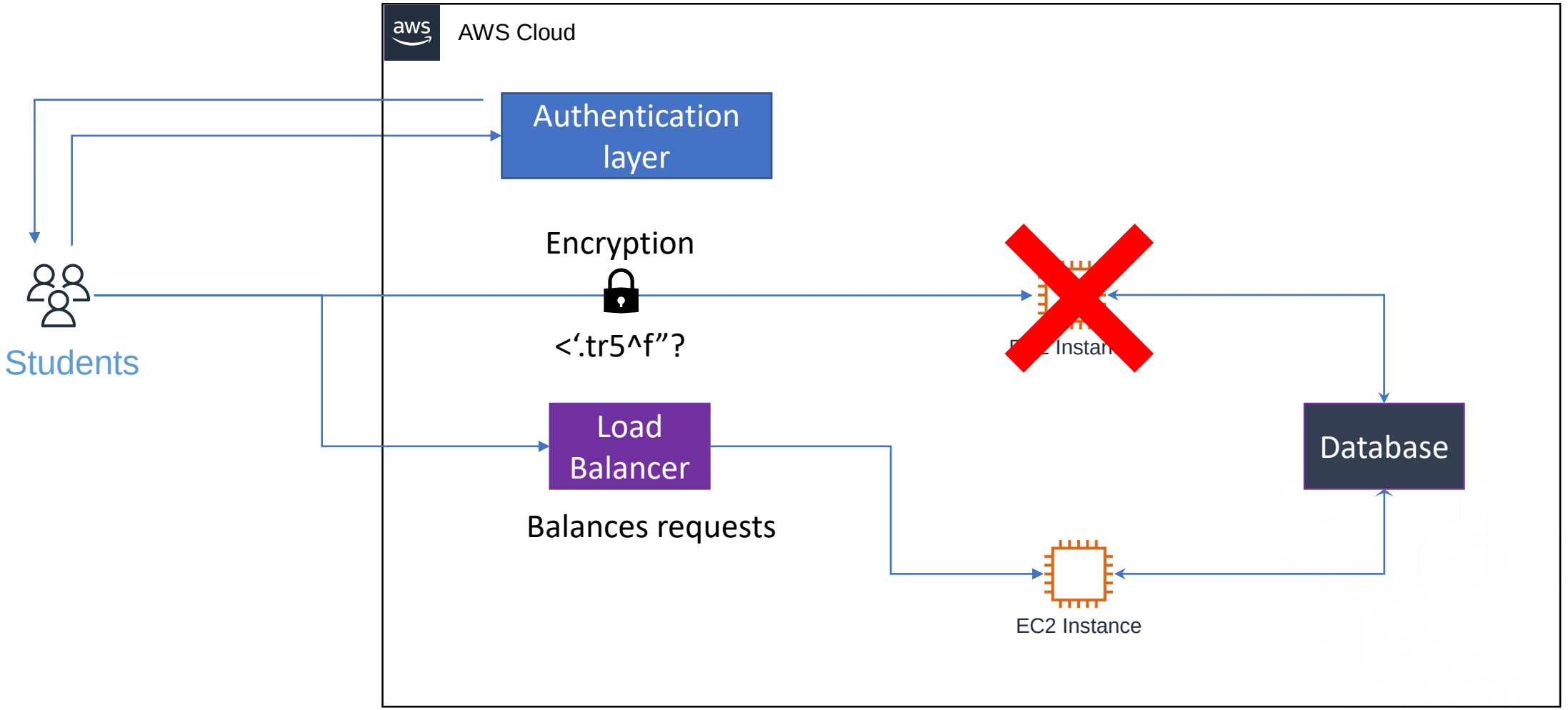
Prototype Architecture



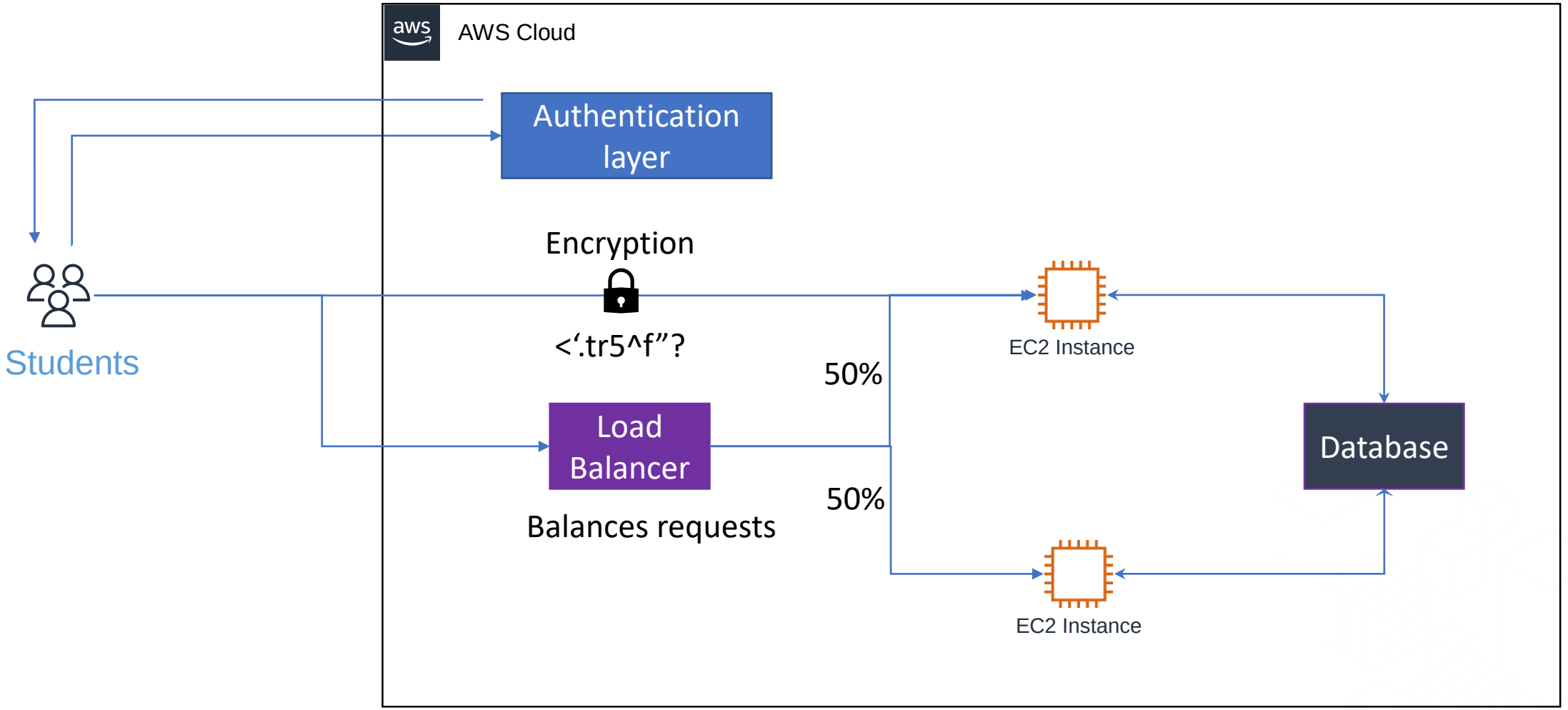
Prototype Architecture – Security



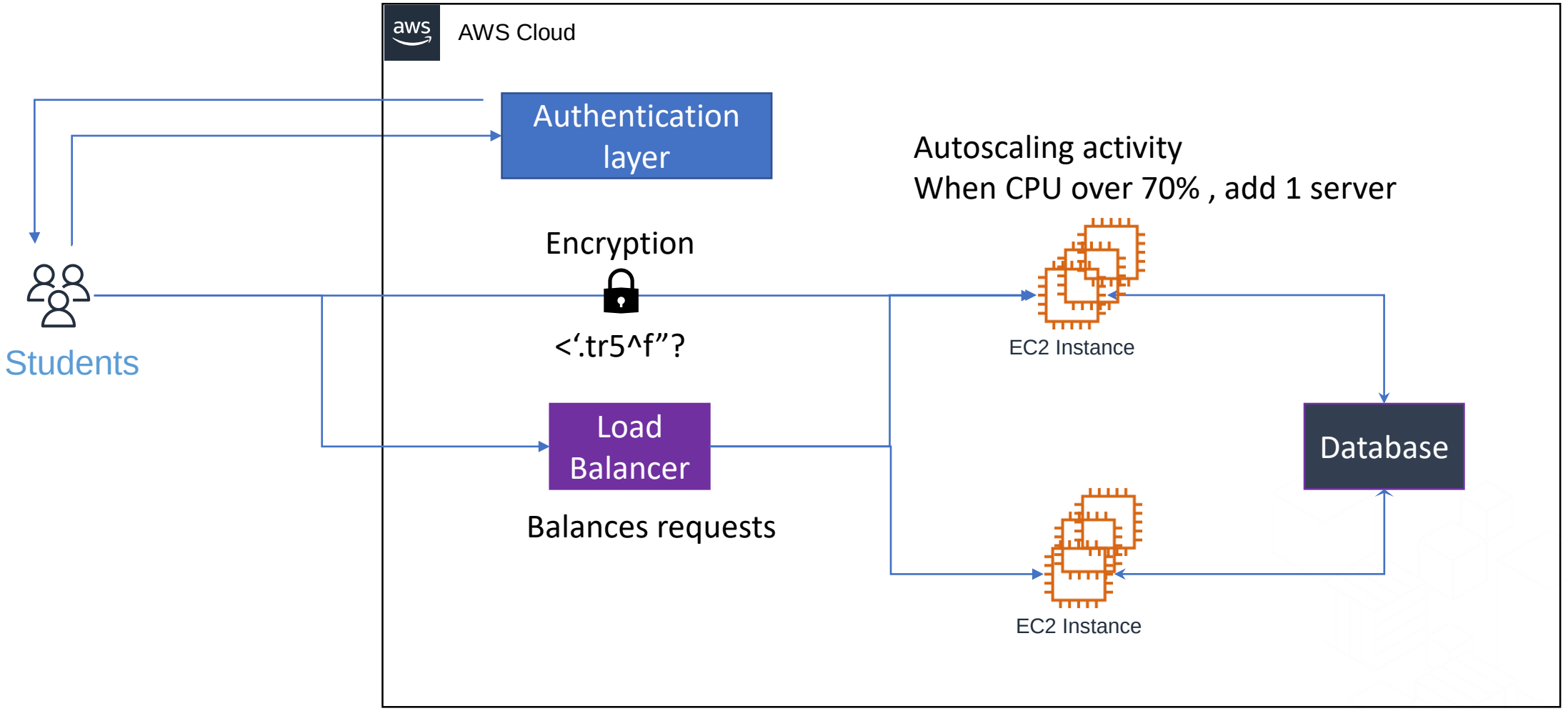
Prototype Architecture – Reliability



Prototype Architecture – Reliability



Prototype Architecture – Performance



How to transition from non-tech domain to Cloud?

Prasad and Jamila

Thank you for attending. See you next Saturday (21-May-2022

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For content check **Resources Link** on BeSA Home Page