Lesson 1 Introduction

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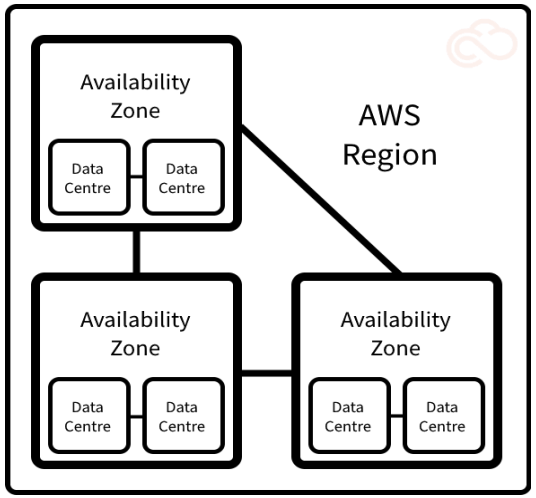
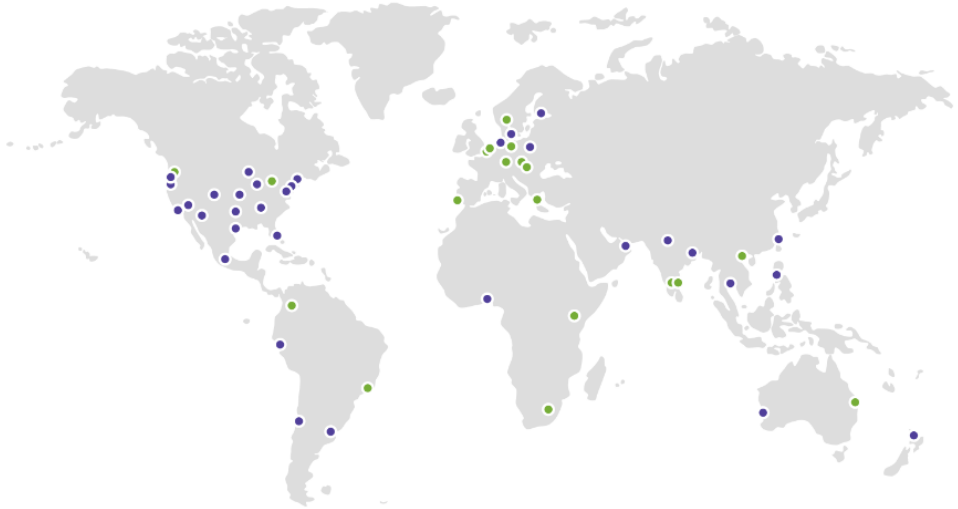
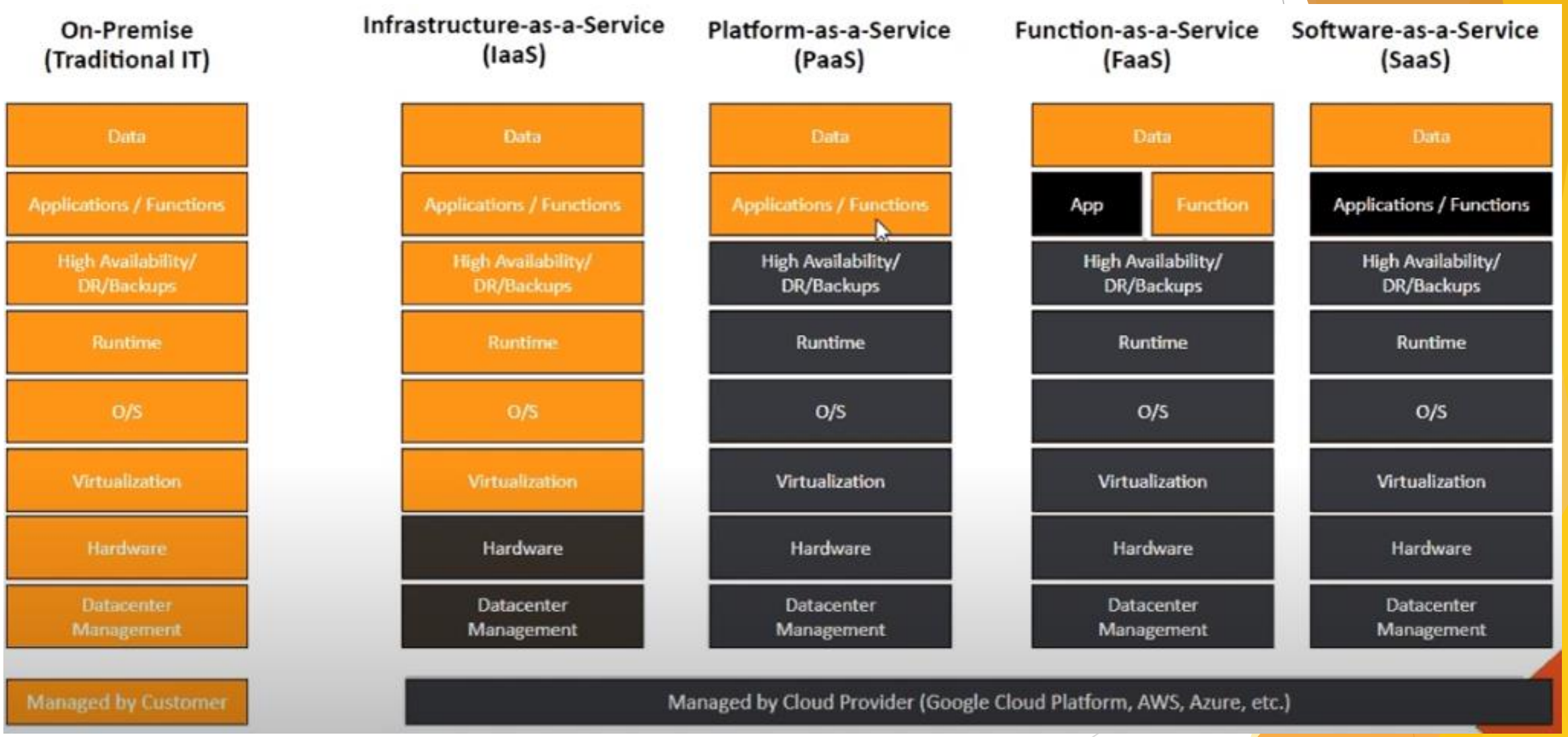
What is AWS

- *Amazon Web Services* (AWS) is a platform of web services that offers solutions for computing, storing, and networking, at different layers of abstraction.
- *Web services* are accessible via the internet by using typical web protocols (such as HTTP) and used by machines or by humans through a UI.
- As an AWS customer, you can choose among different *data centers*. AWS data centers are distributed worldwide.



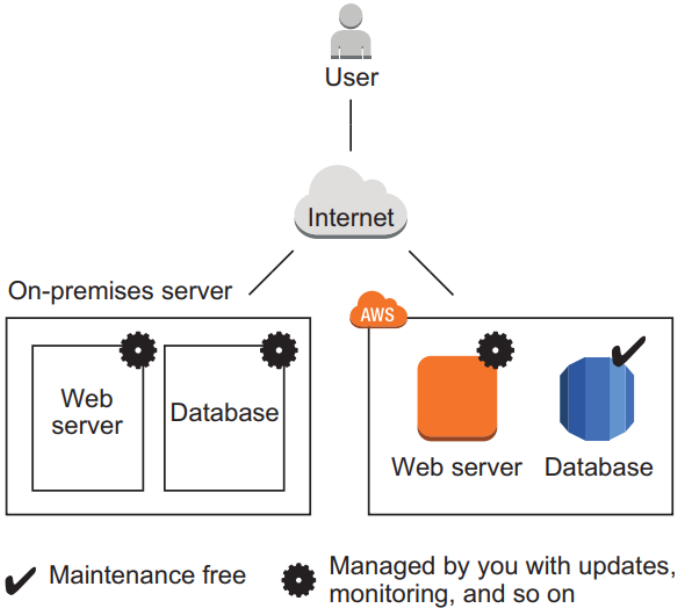


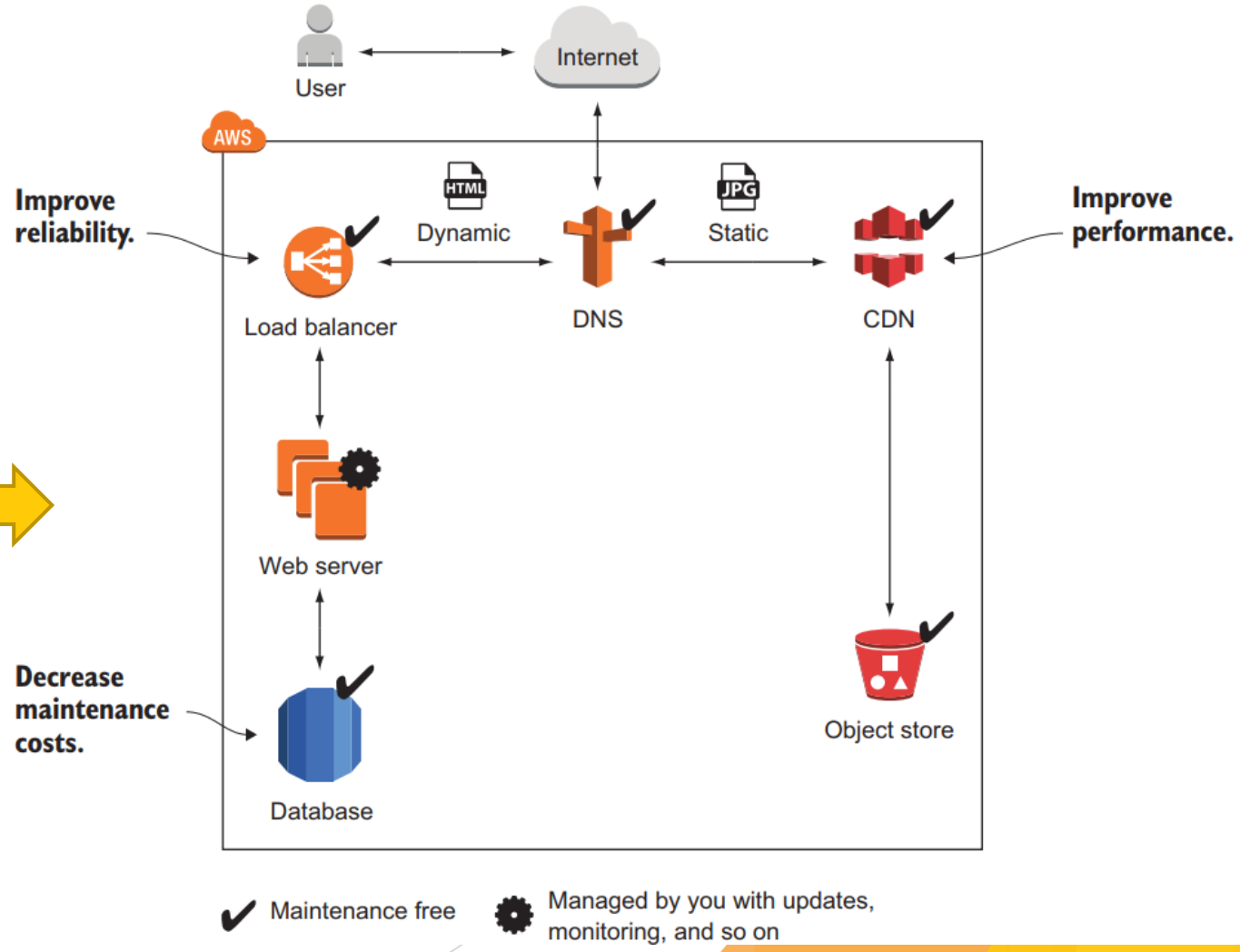
What is cloud computing



What can AWS do

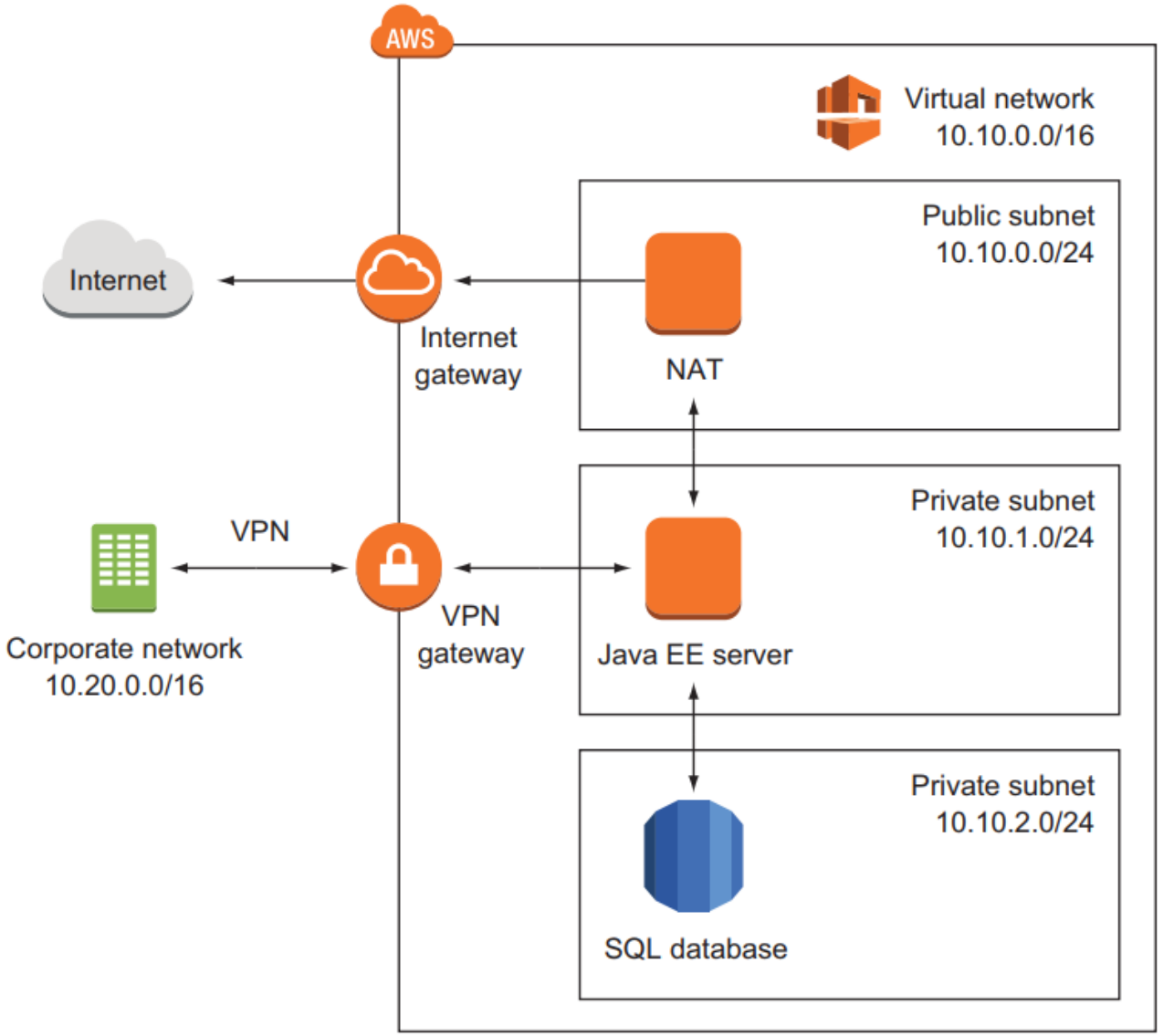
- Hosting a website





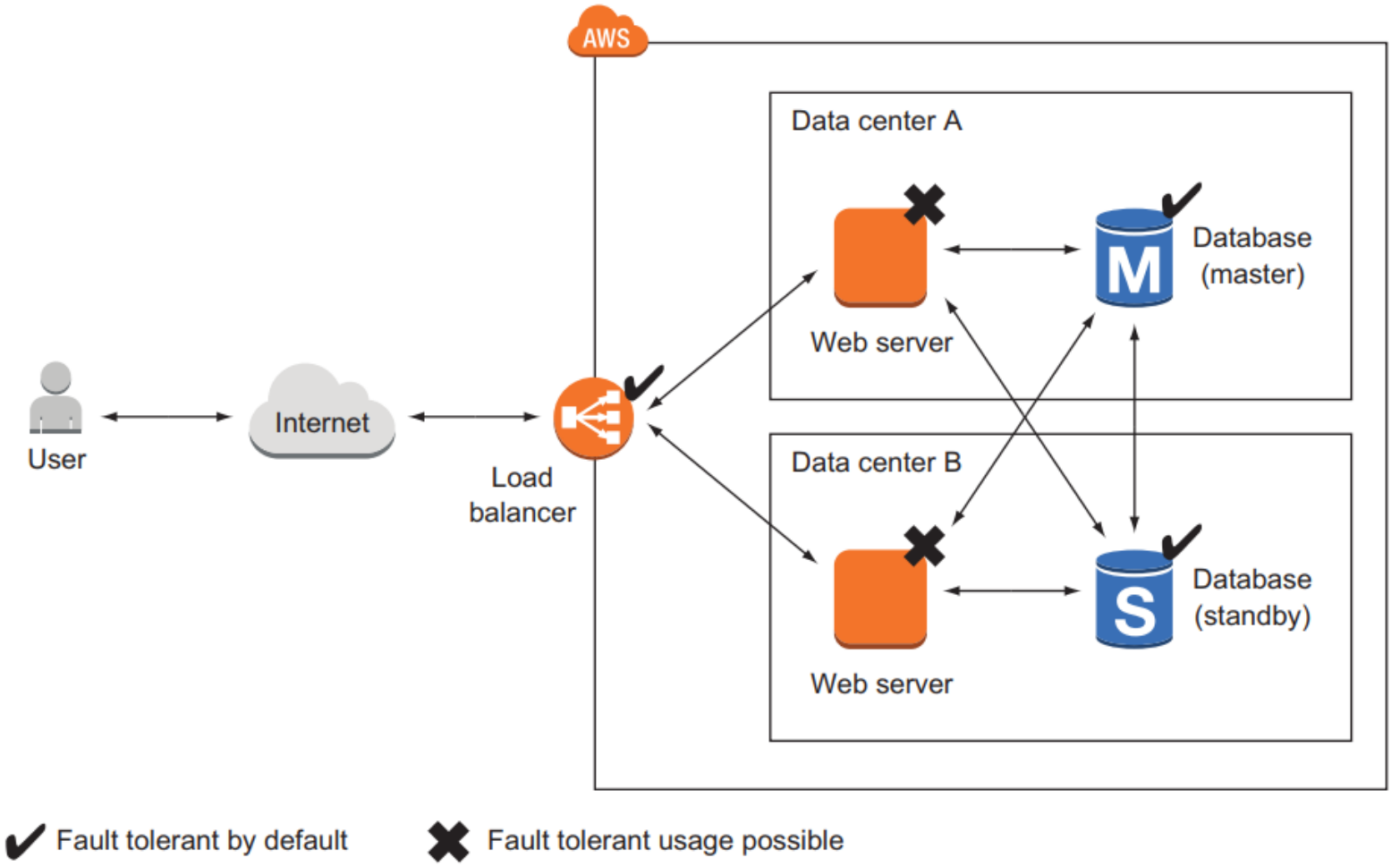
What can AWS do

- Hosting a Java EE application



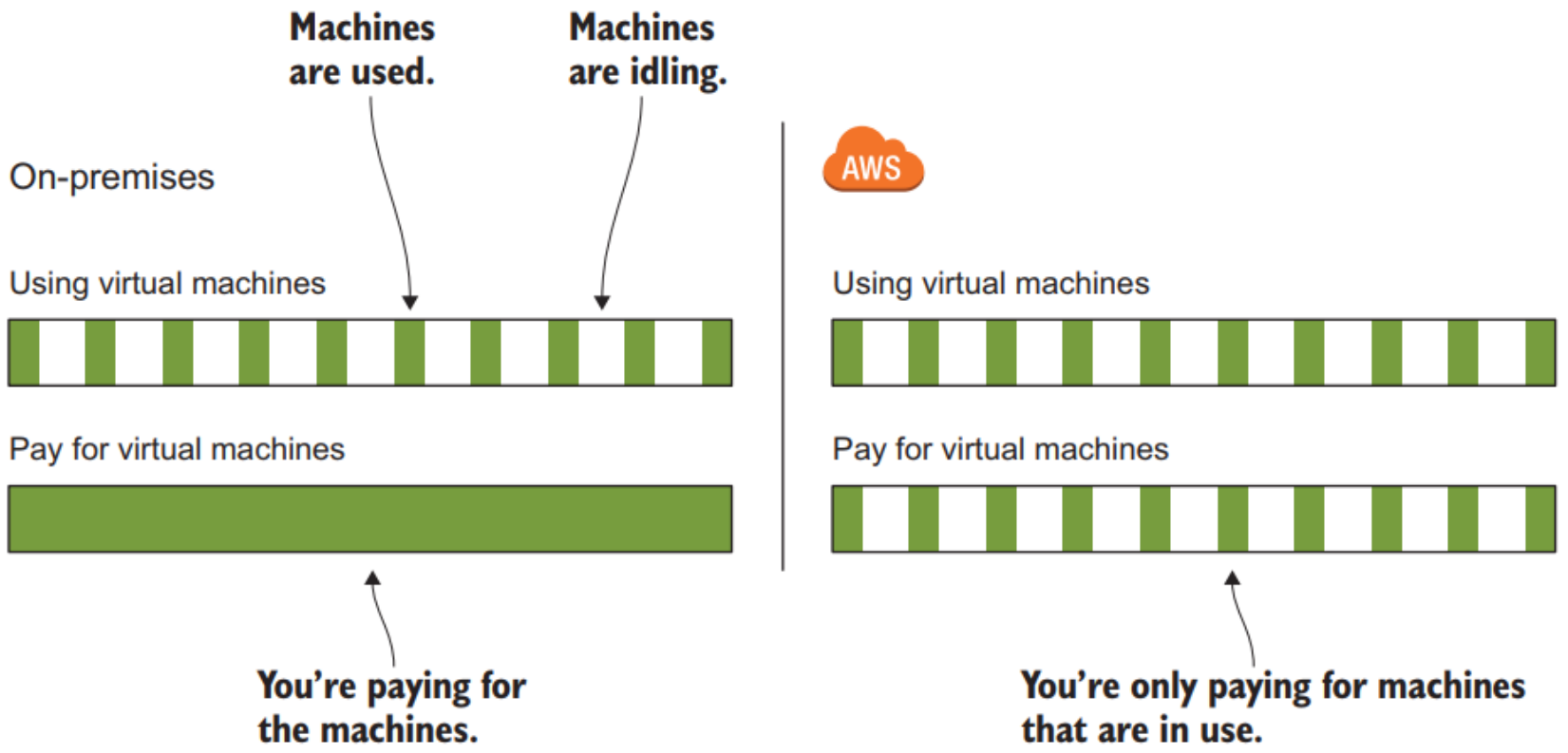
What can AWS do

- Implementing a highly available system



What can AWS do

- Profitting from low cost for batch processing infrastructure

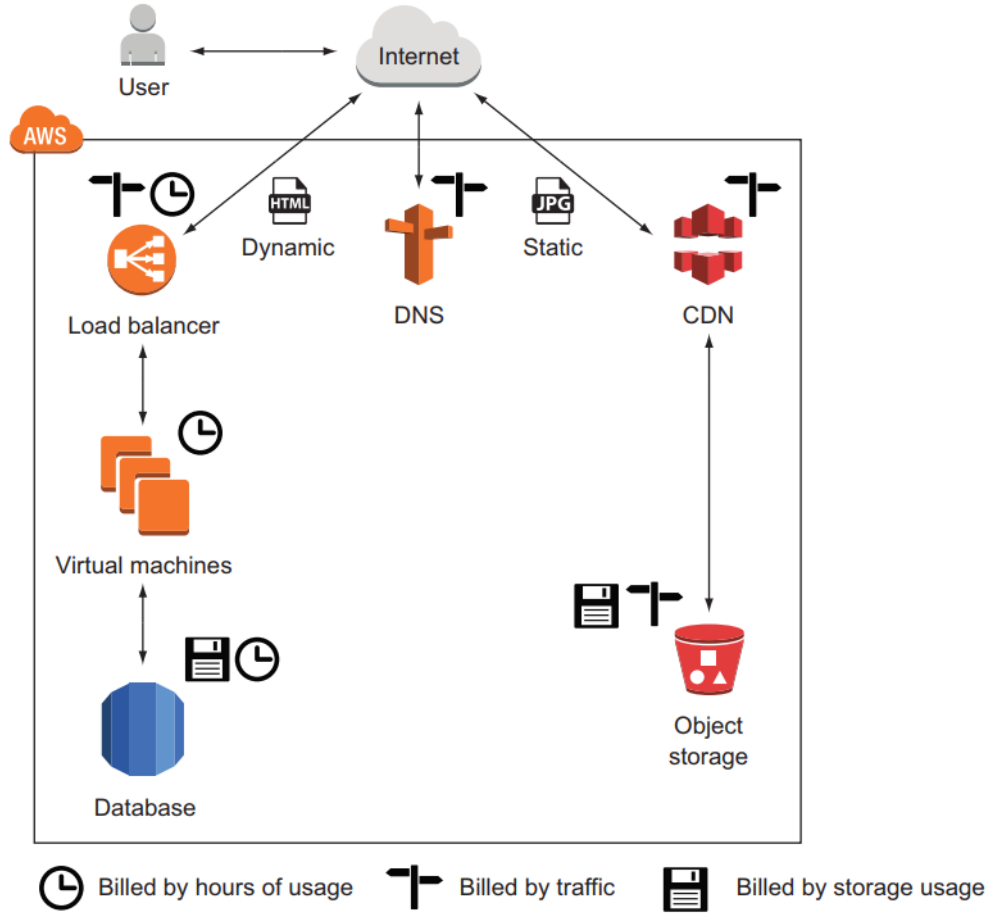


AWS Benefits

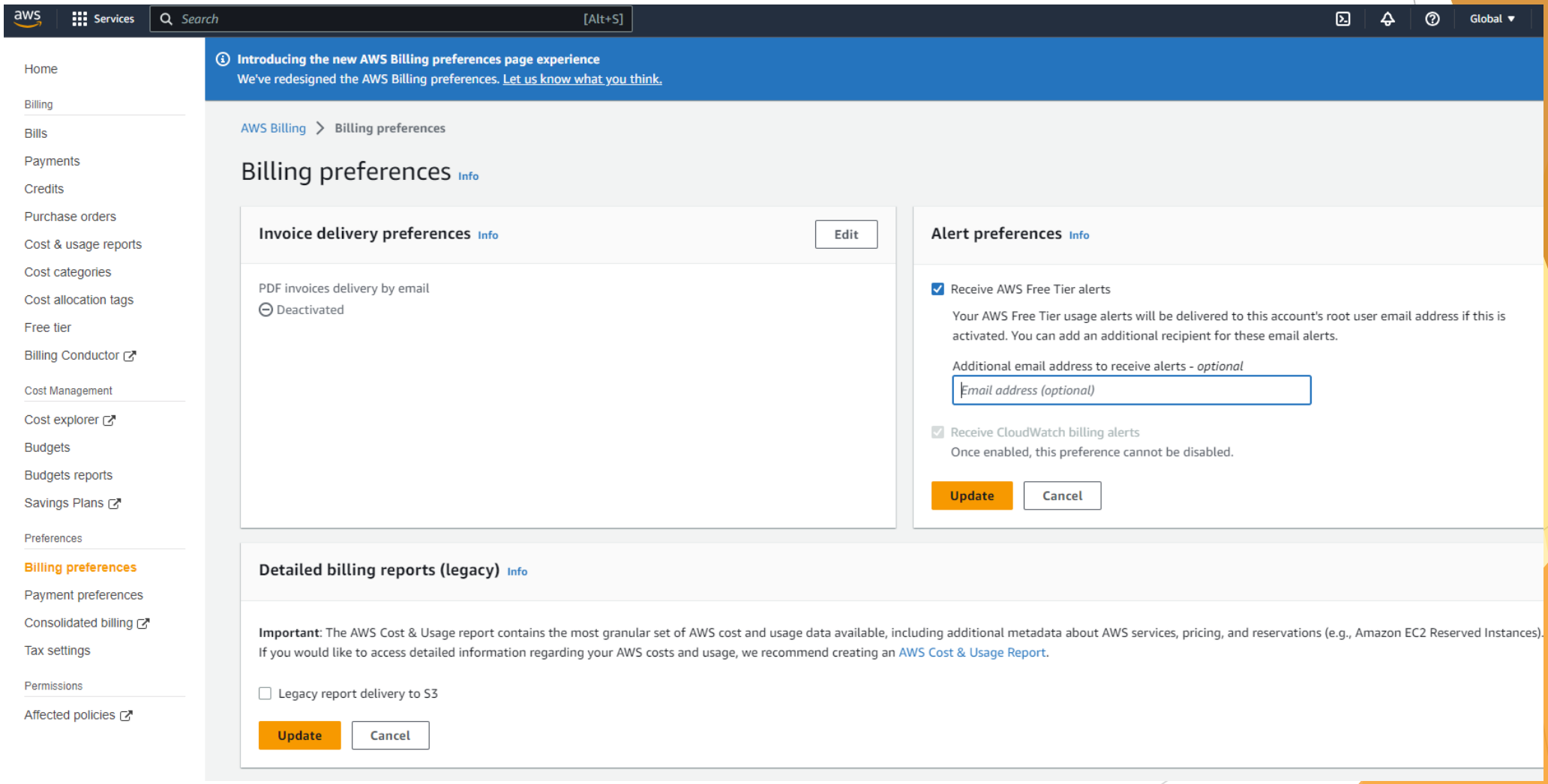
- Services solve common problems
- Enabling Automation
- Scalability (flexible capacity)
- Reliability (built for failure)
- Reducing time to market
- Global infrastructure

Billing

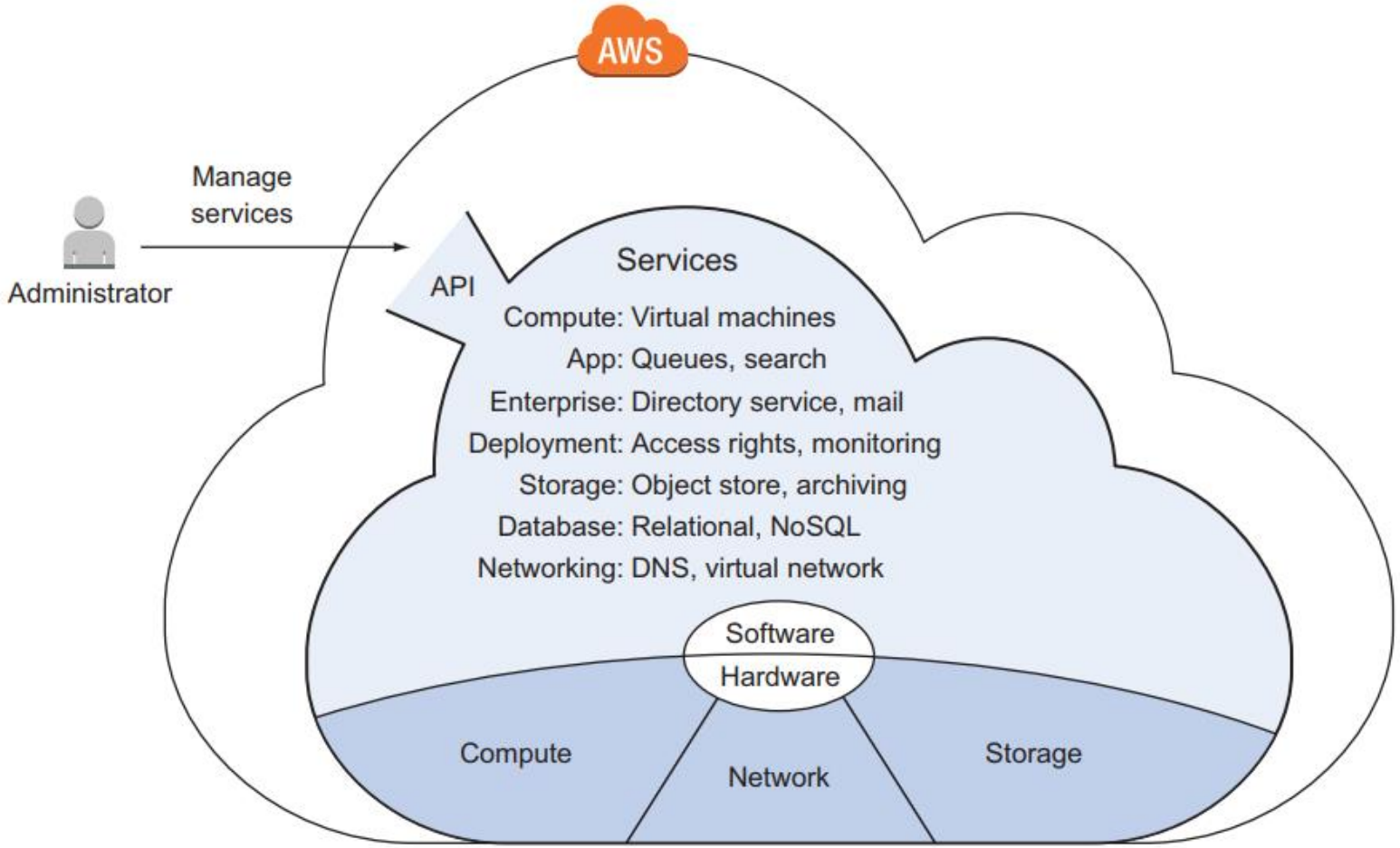
- Free Tier - You can use some AWS services for free within the first 12 months of your signing up
- Billing example



Track your Billing



Exploring AWS



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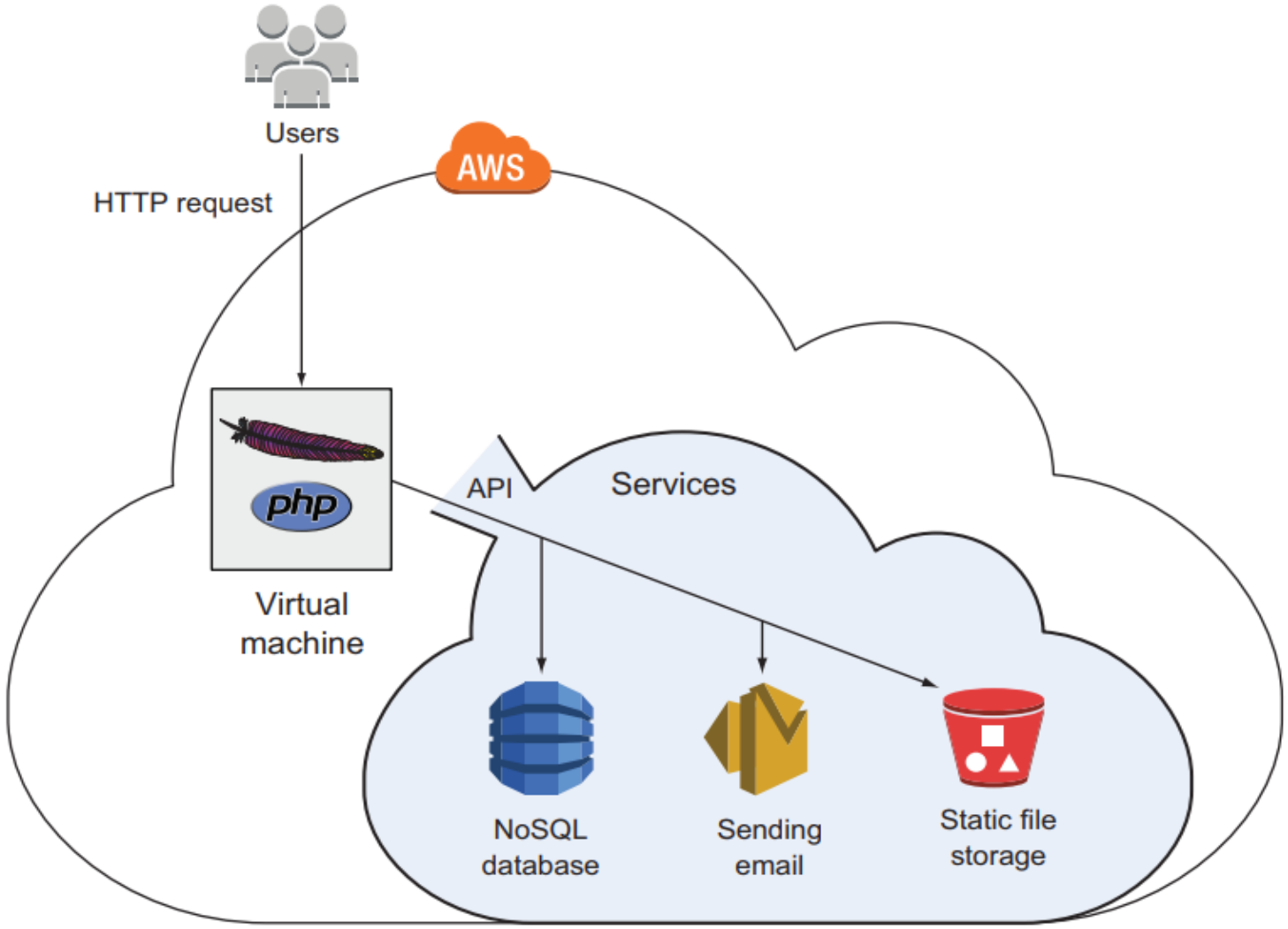
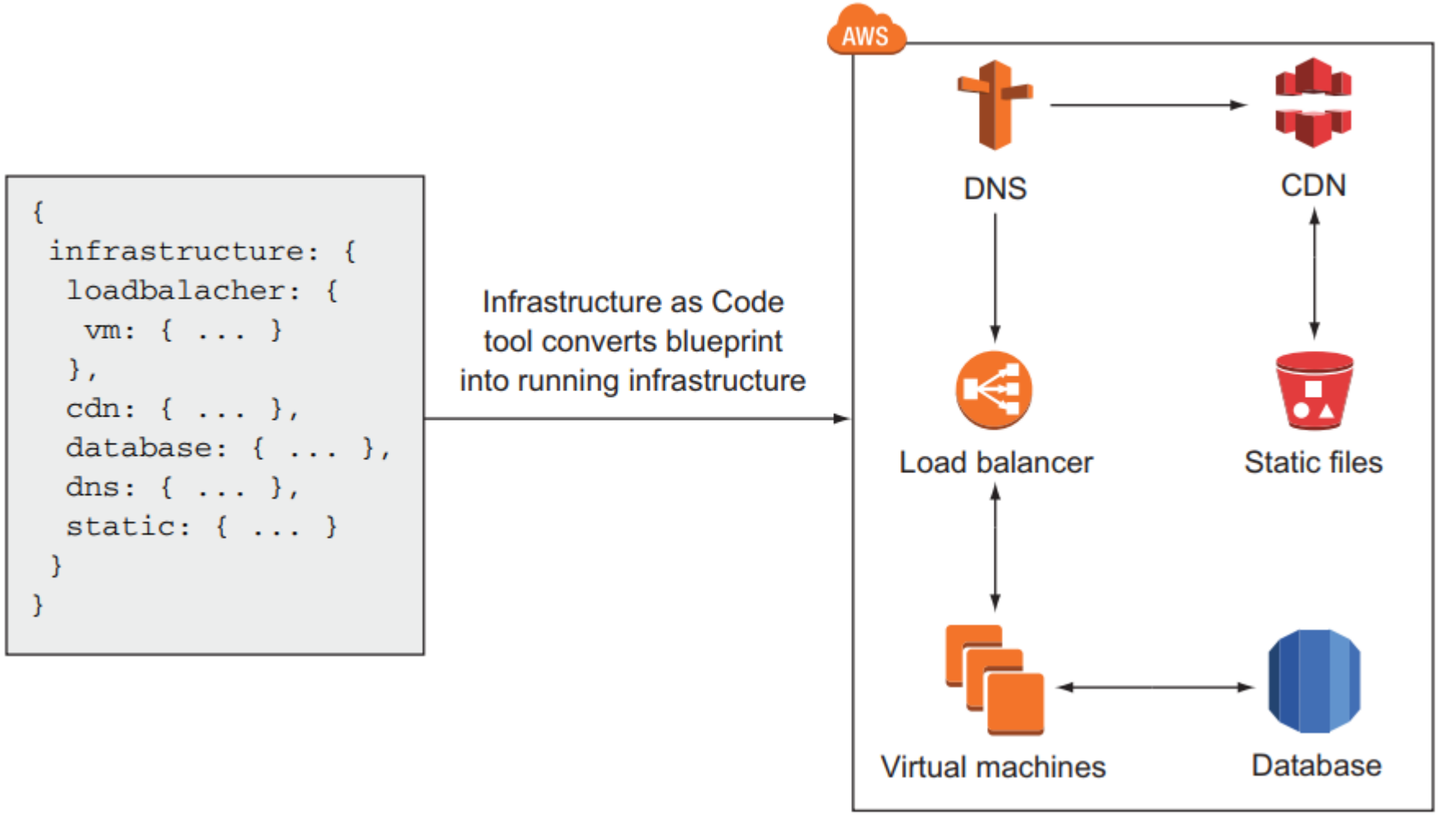


AWS Services Example

EC2—Virtual machines
ELB—Load balancers
Lambda—Executing functions
Elastic Beanstalk—Deploying web applications
S3—Object store
EFS—Network filesystem
Glacier—Archiving data
RDS—SQL databases
DynamoDB—NoSQL database
ElastiCache—In-memory key-value store
VPC—Private network
CloudWatch—Monitoring and logging
CloudFormation—Automating your infrastructure
OpsWorks—Deploying web applications
IAM—Restricting access to your cloud resources
Simple Queue Service—Distributed queues

Interacting with AWS



AWS Account

- **Container** – An AWS account is the basic container for all the AWS resources you create as an AWS customer.
- **Security boundary** – An AWS account is also the basic security boundary for your AWS resources. Resources that you create in your account are available to users who have credentials for your account.

Among the key resources you can create in your account are ***identities***, such as ***users*** and ***roles***. Identities have credentials that someone can use to sign in (*authenticate*) to AWS. Identities also have permission policies that specify what a user can do (*authorization*) with the resources in the account.

Exercise 1. Signing up

- The sign-up process consists of five steps:

1 Providing login credentials
2 Providing contact information
3 Providing payment details
4 Verifying your identity
5 Choosing a support plan

Root user vs IAM user

- The root user is the account owner and is created when the AWS account is created. Other types of users, including IAM users, and AWS IAM Identity Center (successor to AWS Single Sign-On) (IAM Identity Center) users are created by the root user or an administrator for the account. All AWS users have security credentials.
- **Root User credentials**

The credentials of the account owner allow full access to all resources in the account. You can't use IAM policies to explicitly deny the root user access to resources.

- **IAM credentials**

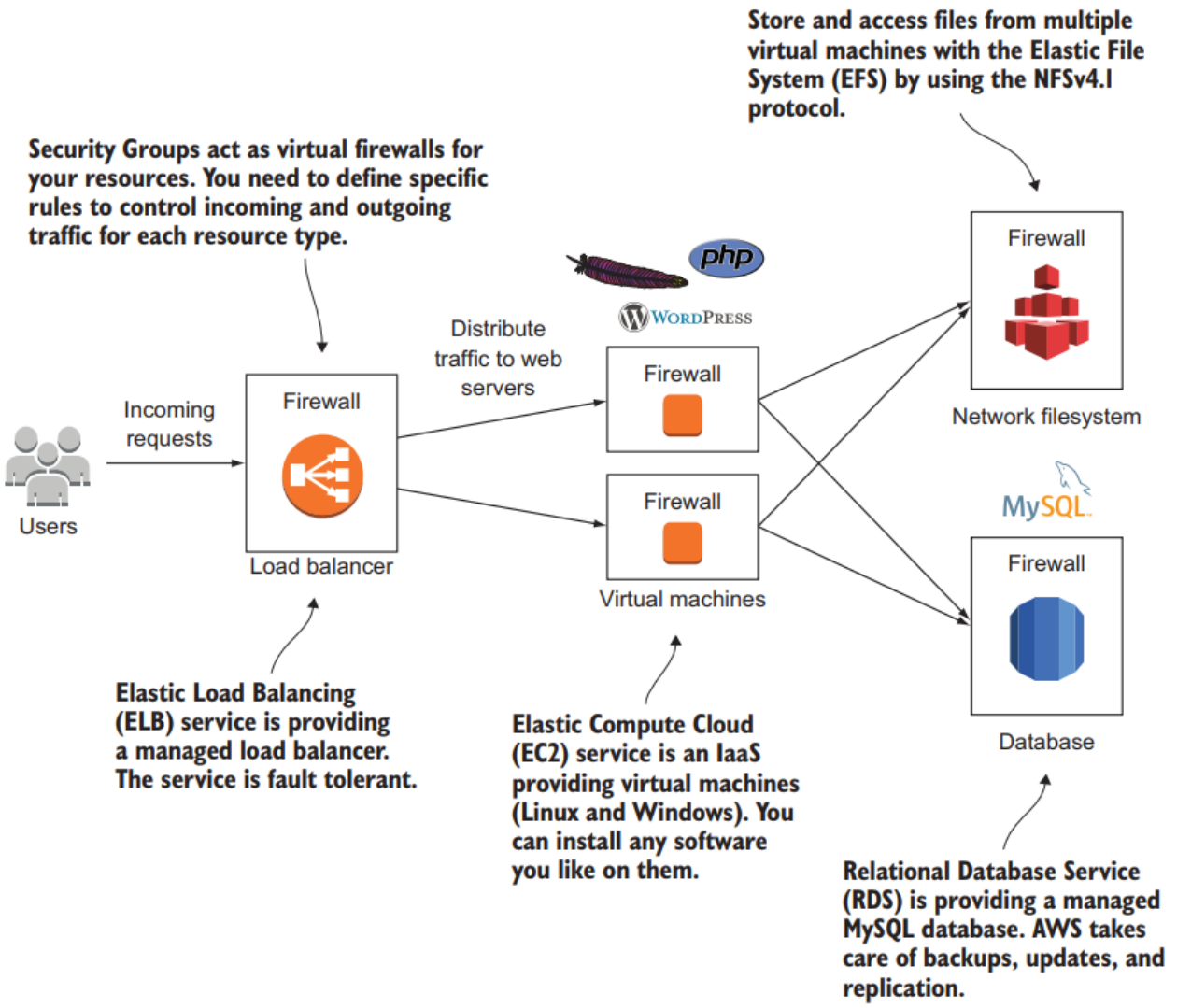
An IAM user is an entity you create in AWS that represents the person or service that uses the IAM user to interact with AWS resources. These users are identities within your AWS account that have specific custom permissions.

Access Keys

- When you use AWS programmatically, you provide your AWS access keys so that AWS can verify your identity in programmatic calls. Your access keys consist of an access key ID (for example, AKIAIOSFODNN7EXAMPLE) and a secret access key (for example, wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY).

Exercise 2 Exploring AWS

- Deploy an application *wordexpress* on AWS
- Infrastructure as Code



Summary

- Amazon Web Services (AWS) is a platform of web services for computing, storing, and networking that work well together.
- Cost savings aren't the only benefit of using AWS. You'll also profit from an innovative and fast-growing platform with flexible capacity, fault-tolerant services, and a worldwide infrastructure.
- Any use case can be implemented on AWS, whether it's a widely used web application or a specialized enterprise application with an advanced networking setup.
- You can interact with AWS in many different ways. You can control the different services by using the web-based GUI, use code to manage AWS programmatically from the command line or SDKs, or use blueprints to set up, modify, or delete your infrastructure on AWS.
- Pay-per-use is the pricing model for AWS services. Computing power, storage, and networking services are billed similarly to electricity.
- Creating an AWS account is easy. Now you know how to set up a key pair so you can log in to virtual machines for later use.
- Creating a billing alarm allows you to keep track of your AWS bill and get notified whenever you exceed the Free Tier.