



TECHNOLOGY CAMP

DAY 3 : CLOUD COMPUTING

Introduction to Cloud Computing

Session 1



YELLOW CIRCLE INC
PO Box 2383
Elk Grove, CA 95759-2383

Teacher Lesson Plan

Introduction to Cloud Computing

Session Name:

Introduction to Cloud Computing

Summary:

In this session, we will look at what is cloud computing, how it is related to virtualization, the components of a cloud environment, the types of clouds, cloud service models and major cloud providers

Time Allotment:

65 minutes

Learning Objectives:

- *Define Cloud Computing*
- *Explain how cloud is related to Virtualization*
- *Describe Components of a Cloud Environment*
- *Describe Cloud Types*
- *Describe Types of Cloud Service Models*
- *Name Major Cloud Providers*

Supplies:

- *Scrap paper / notepad to take notes*
- *Laptop / computer with Internet access to research topics*

Learning Activities:

- **(3 minutes) - Teacher Introduction**

Introduce yourself to students. Provide your name, industry experience, current job, fun activities you do, and something awesome about cyber security. This is session one, and a very good place to define some ground rules.



YELLOW CIRCLE INC
PO Box 2383
Elk Grove, CA 95759-2383

Day 3 : Session 1
Page 2 of 6

Introduction to Cloud Computing

- **(4 minutes) - Volunteers Introduction**

Introduce volunteers that are present in the classroom. Teachers will be provided with a quick bio of each volunteer who are helping in the classroom.

- **(3 minutes) - Session overview**

This session covers the topics like: What is Cloud Computing and how is cloud related to Virtualization. We will discuss common components of a cloud environment, types of clouds, types of cloud service models, and who are the major cloud providers

- **(5 minutes) - What is Cloud Computing?**

Cloud computing is a remote virtual pool of on-demand shared resources offering Compute, Storage, Database and Network services that can be rapidly deployed at scale – Cloud Academy

- **(2 minutes) - Video - What is Cloud Computing – Pause at 1:45**

https://youtu.be/Rh_fZb5pxgY

- **(5 minutes) - How is Cloud Related to Virtualization?**

- *Virtualization and Cloud computing work together*
- *Virtualization allows for multiple server instances to run on the same physical infrastructure*
- *Virtualization is the technology that makes Cloud Computing possible*
- *Cloud computing relies on virtualization to provide cloud computing services*
- *Discuss the historical development from physical servers to virtualization to cloud computing*

- **(4 minutes) - Video - Understanding Virtualization – Pause at 3:18**

https://youtu.be/Rh_fZb5pxgY



YELLOW CIRCLE INC
PO Box 2383
Elk Grove, CA 95759-2383

Day 3 : Session 1
Page 3 of 6

Introduction to Cloud Computing

- **(6 minutes) - Components of a Cloud Environment**

- *Compute – The processing resources (for example, servers)*
- *Storage – Allows data storage*
- *Databases – Used to store structured data that can be queried or used by applications*
- *Network – Provide the connections to allow the other components to communicate and work together*
 - *This includes routers to direct traffic and firewalls to control the flow of traffic within the network*
 - *Compare each component to real vs virtual (firewalls, servers, load-balancers, vswitch, routers, etc)*

- **(5 minutes) - Video - Components of a Cloud Environment – Pause at 5:20**

https://youtu.be/Rh_fZb5pxgY

- **(3 minutes) – Types of Clouds**

- *Infrastructure as a Service (IaaS) – Provides virtualized traditional infrastructure components including servers, storage, networking components*
- *Platform as a Service (PaaS)-Provides access to hardware and software tools on infrastructure hosted by the vendor. Allows the users to install applications without concern for server and infrastructure administration.*
- *Software as a Service (SaaS)- Provides access to applications that are hosted on the infrastructure and platform of the service provider.*

- **(5 minutes) - Major Cloud Providers**

Today we will be building different components and using different features 3 of the major cloud providers: Microsoft Azure, Amazon Web Services (AWS), and Google Compute Cloud.



YELLOW CIRCLE INC
PO Box 2383
Elk Grove, CA 95759-2383

Day 3 : Session 1
Page 4 of 6

Introduction to Cloud Computing

- *Microsoft Azure – Build a Webapp*
 - *Amazon Web Services (AWS) – Build a VPN*
 - *Google Cloud Platform – Build a virtual server and install an application*
- **(8 minutes) - Lab: First time login to laptops**
 - *Quick safety talk about the use of laptops*
 - *Provide students with password to student account (password will be provided)*
 - *Students will connect laptops to Wifi Internet*
 - *Test connectivity by browsing to google.com*
 - *Provide UserIDs for use with each of the 3 cloud service providers to be used in sessions 2, 3, 4. Explain that passwords will be provided in each session.*
- **(10 minutes) – Student Activity - Name the Provider and Service Model**

Each of the names below describes a cloud offering from one of the 3 providers we will be using today, Azure, AWS, or Google. Using your laptops, research the offering and be ready to describe the offering and the type of service model (IaaS, PaaS, or SaaS).

 - *G Suite*
 - *AWS Lambda*
 - *Google Compute Engine*
 - *AWS Elastic Beanstalk*
 - *Google App Engine*
 - *Microsoft Azure*
- **(2 minutes) – Closing/Wrap-up**

What is Cloud Computing

Introduction to Cloud Computing

How is Cloud Related to Virtualization

Components of a Cloud Environment

Types of Clouds

Types of Cloud Service Models

Major Cloud Providers

- **(1 minutes) - What's next?**

Inform students to head back to the cafeteria for snacks / break, and remind them to use the restroom before next session starts.



YELLOW CIRCLE INC
PO Box 2383
Elk Grove, CA 95759-2383

Day 3 : Session 1
Page 6 of 6