ASSIGNMENT

Certification Report

Submitted To: Grace Joseph

Submitted By: Rony Binoy

Roll No: 51

INMCA S9

Introduction to Cloud

Overview

This course provides comprehensive coverage of cloud computing concepts, technologies, adoption considerations, architectures, and emerging trends. Designed as a foundational course for beginners, it approaches cloud computing from both business and technical perspectives. Learners will gain a holistic understanding of key fundamentals, components, models, and latest developments in the cloud domain. Though self-paced, the structured six module curriculum ensures systematic learning outcomes. Since no prior experience is required, it serves as an ideal introductory course for anyone interested in cloud computing.

The modules contain-

Module 1 - Cloud Computing Overview

This module provides a broad overview of cloud computing. It starts with formal definitions of cloud computing based on NIST guidelines. Essential characteristics like on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service are explained in depth. A brief history of evolution from mainframes to client-server to SaaS models charts the growth of cloud. Major cloud providers like AWS, Azure, GCP, and their service offerings are explored.

Module 2 - Cloud Adoption and Emerging Technologies

The business case for adopting cloud computing is presented in this module. Factors like agility, innovation, flexibility, scalability, reliability, and pay-as-you-go pricing are discussed. Cloud's impact on emerging technologies like artificial intelligence, machine learning, internet of things, blockchain, and big data analytics is covered. Real-world examples illustrate the benefits and accelerative effects of cloud. Risks like security, vendor lock-in, compliance issues are also addressed.

Module 3 - Cloud Computing Service and Deployment Models

Critical service models Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS), and Software-as-a-Service (SaaS) are described in detail. IaaS provisioning of core infrastructure like servers, storage, and networking is differentiated from PaaS development platforms and SaaS end-user applications. Key components, use cases, examples, and benefits of each service model are highlighted. Deployment models like public cloud, private cloud, hybrid cloud are also compared and contrasted.

Module 4 - Components of Cloud Computing

This module provides an overview of vital technology components and architectural building blocks that enable delivery of cloud services. These include virtualization, virtual machines, containers, bare metal servers, cloud storage, and networking. Different virtualization techniques like full virtualization, para-virtualization, and operating system level virtualization are explained with examples. Concepts like auto-scaling, load balancing, orchestration are also covered.

Module 5 - Cloud Storage

Since data storage is a key component of cloud computing, module 5 focuses exclusively on different types of cloud storage. Block storage, file storage, object storage, and CDNs are explained in detail. Comparisons are made between different storage modes, their use cases, benefits, and drawbacks. Other topics like data backup, retrieval, access controls, encryption, tiered storage are also covered in this storage-centric module.

Module 6 - Cloud Native and Emergent Cloud Trends

The final module examines latest trends in cloud-native architectures, hybrid multi-cloud, serverless computing, microservices, containers, and application modernization. The pros and cons of each emergent trend are weighed through real-world examples. This module brings together earlier concepts and ties them to contemporary developments in the dynamic cloud landscape.

Learning Outcomes

Completing this course equips learners with strong foundational knowledge as well as practical understanding of contemporary cloud computing concepts. Learners will be able to explain key characteristics, models, technologies, components, and trends along with relevant examples. The course provides the necessary conceptual basis for pursuing further advanced learning in cloud computing. It also enables informed decision making about cloud initiatives, architectures, and strategies in real-world scenarios.

IBM CC0101EN Certificate | Cognitive Class

Rony Binoy

successfully completed, received a passing grade, and was awarded this
Cognitive Class Certificate of Completion in

IBM CC0101EN: Introduction to Cloud

a course of study offered by IBM.

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