

Loyola Academy Degree and PG College

B.sc Computer Science and Cloud Computing

AWS (Amazon Web Services) Workshop

Title: Beyond Basics: Advanced Cloud Computing with AWS

Date: 19th & 20th Dec 2024

Location: Loyola Hall, Loyola Academy Degree & PG College

Timings: 9:30 AM - 3:00 PM

1) Introduction

The **inter-college workshop** "Beyond Basics: Advanced Cloud Computing with AWS" was conducted at Loyola Academy by AWS Automation Engineer, Babji Allamsetti from Broadridge India. The event aimed to provide an in-depth understanding of cloud computing, focusing on hands-on experience with AWS services like EC2 and S3. This two-day event not only delivered technical insights but also provided participants with guidance on career paths and placement opportunities in the cloud industry.

With cloud adoption increasing globally, workshops like this play a crucial role in preparing students and professionals for real-world applications. The objective was to equip participants with advanced knowledge that extends beyond theoretical understanding, fostering skills that are highly relevant in today's job market. The workshop created an engaging learning environment with a blend of lectures, practical activities, and collaborative projects.



2) Workshop Overview

The workshop was structured to enhance participants' cloud computing skills, focusing on AWS services and solutions. The curriculum was designed to cater to individuals with a basic understanding of cloud computing, aiming to expand their knowledge to an advanced level. Participants were exposed to real-world scenarios that simulated business challenges and solutions through AWS platforms.

Key highlights of the workshop included:

- Practical sessions for hands-on experience with AWS infrastructure
- Live demonstrations of AWS services, including instance launches and configurations
- Group discussions and interactive Q&A segments to resolve participant queries
- Networking opportunities with industry experts and peers

The agenda was divided into morning and afternoon sessions, with theory-based learning in the morning and hands-on practical exercises in the afternoon. This balanced approach ensured that participants could immediately apply the concepts they learned.

The workshop witnessed the participation total of 202 students from various esteemed institutions, apart from Loyola Academy which includes St. Francis College, Malla Reddy College, Badruka College, and Bhavan's College.



3) Key Topics Covered

A. Introduction to Cloud Computing

Cloud computing is a transformative technology that provides on-demand access to a shared pool of computing resources, such as servers, storage, databases, networking, software, and

analytics, over the internet. It eliminates the need for businesses to own and manage physical hardware, enabling them to scale resources based on demand and pay only for what they use.

Cloud services are categorized into three main models:

- **Infrastructure as a Service (IaaS):** Offers virtualized computing resources over the internet. Users can rent virtual machines, storage, and networks.
- **Platform as a Service (PaaS):** Provides a platform allowing developers to build, test, and deploy applications without managing the underlying infrastructure.
- **Software as a Service (SaaS):** Delivers ready-to-use software applications over the internet, accessible from any device with an internet connection.

B. Deep Dive into AWS EC2 (Elastic Compute Cloud)

AWS EC2 is one of the most fundamental services that allow users to create and run virtual servers, known as instances. The session covered:

- Types of EC2 instances and their use cases
- Steps to create, configure, and manage instances
- Setting up security groups and connecting to instances via SSH
- Optimizing EC2 costs through reserved and spot instances

C. Mastering AWS S3 (Simple Storage Service)

AWS S3 provides scalable object storage that is highly durable and secure. The session included:

- Creating and managing S3 buckets
- Uploading and managing files with various access permissions
- Implementing bucket policies and lifecycle configurations
- Hosting static websites using S3
- Use of versioning, encryption, and access logging in S3 environments



4) Hands-On Exercises

Participants actively engaged in:

- **Launching and managing EC2 instances** to understand the core aspects of virtual server deployment.
- **Configuring security settings and key pairs** to ensure secure access to AWS resources.
- **Creating S3 buckets and uploading data**, followed by configuring bucket policies.
- **Implementing S3 lifecycle policies** to automate data archiving and deletion.
- **Deploying static websites** through S3, simulating real-world web hosting scenarios.
- **Launching sample websites** using EC2, understanding the integration of AWS services for seamless application deployment.

These exercises allowed participants to experiment and troubleshoot, reinforcing their understanding of AWS services in a controlled environment.

5) Key Takeaways

The workshop delivered numerous valuable takeaways for the participants, including:

- **Advanced knowledge of AWS services**, preparing participants for AWS certification exams.
- **Hands-on experience** with EC2 and S3, enhancing practical skills essential for cloud-based roles.
- **Insights into practical cloud solutions** that can be applied directly to academic and professional projects.
- **Networking opportunities** with peers and industry professionals, fostering collaboration and career growth.
- **Certificate of participation**, adding value to participants' resumes and demonstrating their commitment to learning cloud technologies.



6) Additional Highlights

- **Guest Speaker Session:** Babji Allamsetti shared his personal experiences and provided insights into industry trends and the growing demand for AWS professionals.
- **Career Guidance:** The workshop also included a segment on career paths in cloud computing, guiding participants on certifications like AWS Certified Solutions Architect and Developer Associate.
- **Team Projects:** Participants were divided into small teams and tasked with developing mini-projects using AWS resources. This collaborative approach enhanced learning through peer interaction and teamwork.
- **Feedback and Evaluation:** At the end of the workshop, participants were required to complete a feedback form, providing insights into the overall experience and suggestions for future workshops.

Conclusion

The workshop "Beyond Basics: Advanced Cloud Computing with AWS" was a valuable learning experience, significantly enhancing participants' cloud computing skills. The interactive format, expert guidance, and hands-on activities provided a solid foundation for further AWS certifications and career advancement in cloud technologies.

Participants left the workshop with improved confidence in deploying and managing AWS services, contributing to their readiness for industry roles and certifications. The event's success highlighted the importance of practical, skill-based learning in academic environments, aligning with industry standards and demands.

