

**A Report on Workshop on**  
**"Understanding Core AWS Service: EC2, S3, VPC"**  
**Organized by Department of Computer Science & Engineering**  
**from 03rd to 07th February 2026**



**Report Submitted by: Mr. A. Kumar, Assistant Professor, Department of Computer Science & Engineering.**  
**Resource Person: Mr. B. Krishnama Raju, AWS certified SolutionAs Architect- Associate Technical Trainer, Rampex Technologies.**

**Participants: III Year B.Tech – Computer Science & Engineering Students – MITS**

**Mode of Conduct: Offline**

**Report Received on 06.03.2026.**

The workshop commenced with opening remarks by **Dr. M. Sreedevi**, who expressed her gratitude to the Management for initiating this valuable program and creating an opportunity to invite a distinguished resource person for the benefit of the students.

The Department of Computer Science & Engineering organized a workshop on “**Understanding Core AWS Service: EC2, S3, VPC**” for III B.Tech students.

The workshop inauguration began at 10:00 a.m. in SRB 320. The dignitaries were Dr. M. Sreedevi, HoD—CSE, Mr. B. Krishnama Raju, AWS certified Solutions Architect- Associate Technical Trainer, Rampex Technologies.

The workshop was started with opening remarks by, Dr. M. Sreedevi who thanked Management for this great initiation of creating an opportunity to invite distinguished resource person for the benefit of the students.

Mr. A. Kumar has introduced about the speaker and invited him to share his valuable experiences to the students. The number of students who participated in the workshop were around 70.

The workshop was delivered by a **distinguished resource person** currently working as a Associate Technical Trainer in the IT industry. The speaker shared practical insights based on real-time project experience and career journey.

### **Workshop Overview**

This 5-day hands-on workshop provides foundational and practical knowledge of three core AWS services:

- **Amazon EC2** (Elastic Compute Cloud)
- **Amazon S3** (Simple Storage Service)
- **Amazon VPC** (Virtual Private Cloud)

Participants will gain theoretical understanding and practical experience deploying, managing, and securing cloud infrastructure.



## Day 1 – Introduction to Cloud & AWS Fundamentals

### Session 1: Cloud Computing Fundamentals

#### Topics:

- What is Cloud Computing?
- Cloud Deployment Models (Public, Private, Hybrid)
- Cloud Service Models (IaaS, PaaS, SaaS)
- Benefits of Cloud

### Session 2: Introduction to AWS

- What is AWS?
- Global Infrastructure (Regions, Availability Zones, Edge Locations)
- AWS Free Tier
- AWS Management Console Overview
- IAM Basics (Users, Roles, Policies)

#### Hands-On Lab 1

- Create AWS Free Tier Account
- Navigate AWS Console
- Create IAM User
- Configure MFA
- Setup Billing Alerts

## Day 2 – Deep Dive into Amazon EC2

### Session 1: EC2 Fundamentals

#### What is EC2?

Amazon EC2 provides scalable virtual servers in the cloud.

#### Topics Covered:

- Instance Types (General Purpose, Compute Optimized, Memory Optimized)
- AMIs (Amazon Machine Images)
- EBS vs Instance Store
- Key Pairs
- Security Groups
- Elastic IP

### Session 2: EC2 Advanced Concepts

- Launch Templates
- Auto Scaling Basics
- Load Balancer Introduction
- Monitoring with CloudWatch
- Instance Metadata

#### Hands-On Lab 2

1. Launch EC2 Instance (Linux)
2. Connect using SSH
3. Install Apache Web Server
4. Create Simple Web Page
5. Attach EBS Volume
6. Create Snapshot
7. Terminate Instance

## Day 3 – Deep Dive into Amazon S3

### Session 1: S3 Fundamentals

Amazon S3 is object storage built for scalability and durability.

#### Topics Covered:

- Buckets and Objects
- Storage Classes:
  - Standard
  - Intelligent-Tiering
  - Glacier
- Versioning
- Lifecycle Policies

- S3 Durability & Availability

### Session 2: S3 Security & Management

- Bucket Policies
- IAM Policies
- Access Control Lists (ACL)
- Pre-signed URLs
- Static Website Hosting
- Cross-Region Replication

### Hands-On Lab 3

8. Create S3 Bucket
9. Upload Objects
10. Enable Versioning
11. Configure Lifecycle Policy
12. Host Static Website
13. Create Pre-signed URL

## Day 4 – Deep Dive into Amazon VPC

### Session 1: VPC Fundamentals

Amazon VPC allows you to create isolated networks in AWS.

#### Core Concepts:

- CIDR Blocks
- Subnets (Public & Private)
- Route Tables
- Internet Gateway
- NAT Gateway
- Security Groups vs NACL

### Session 2: VPC Advanced Design

- Multi-tier Architecture
- Bastion Host
- VPC Peering
- Endpoints
- Flow Logs
- High Availability Design

### Hands-On Lab 4

14. Create Custom VPC
15. Create Public & Private Subnets
16. Attach Internet Gateway
17. Configure Route Tables
18. Launch EC2 in Public Subnet
19. Setup NAT Gateway
20. Deploy EC2 in Private Subnet

## Day 5 – Integrating EC2, S3 & VPC (Real-World Architecture)

### Session 1: Architecture Design

#### Build 3-Tier Architecture:

- Web Tier (Public Subnet)
- Application Tier (Private Subnet)
- Database Tier (Private Subnet)
- S3 for static content & backups

#### Architecture Diagram Components:

- VPC
- 2 Availability Zones
- Load Balancer
- Auto Scaling Group
- EC2 Instances
- S3 Bucket
- NAT Gateway
- Bastion Host

### Session 2: Security & Best Practices

- Least Privilege Principle
- Security Groups Hardening
- Backup Strategy (S3 + Snapshots)
- Cost Optimization
- Monitoring & Logging
- Basic AWS Well-Architected Framework

## Final Hands-On Capstone Lab

Participants will:

21. Design Custom VPC

22. Deploy Web Server in Public Subnet
23. Deploy App Server in Private Subnet
24. Store static files in S3
25. Configure security rules
26. Implement basic monitoring
27. Test end-to-end application flow

### **Outcomes of the workshop**

- Understand AWS fundamentals and explain core cloud concepts and AWS global infrastructure.
- Deploy and manage compute resources using Amazon EC2, including launching instances, configuring security groups, and attaching storage.
- Store and manage data using Amazon S3, including bucket creation, versioning, life cycle policies, and static website hosting.
- Design and configure secure networks using Amazon VPC, including subnets, route tables, internet gateways, and NAT gateways.
- Build and deploy a basic multi-tier cloud architecture by integrating EC2, S3, and VPC with security and cost optimization best practices.

### **Conclusion**

This workshop provides a solid foundation in core AWS services, enabling participants to confidently deploy compute resources with **Amazon EC2**, manage scalable storage using **Amazon S3**, and design secure cloud networks with **Amazon VPC**. By the end of the program, learners gain practical skills and hands-on experience to build secure, scalable, and efficient cloud solutions.

### **Vote of Thanks:**

Mr. A. Kumar proposed the vote of thanks to the Head of the Department and the resource person for attending the program. He also extended his thanks to the Principal and the Management for their support in conducting the training program.