

22<sup>nd</sup> Jan 2020

To

APSSDC,

Poranki,

Vijayawada.

Respected sir,

Sub: Guest Speaker Invitation


The department of Computer Science wishes to conduct a One-Week workshop on "Amazon Web Services" for III BSc II Semester students of our college from 27-01-2020 to 01-02-2020.

Kindly depute the technical skill trainers as resource persons to deliver an expert lecture on "Amazon Web Services". We believe that your contribution to this field is unparalleled and a workshop on this topic will be of great benefit.

Thanking you.



Yours Sincerely

  
PRINCIPAL  
Dr. B.V. R.I.C.F.  
Vishnupur, BHIMAVARAM-534 202

1<sup>st</sup> Feb 2020

To

Mr Neelapala Gopi Krishna,

Technical Skill Trainer,

APSSDC.

Dear Sir,

Sub: Letter of Appreciation.

Thank you very much for delivering an informative and thought provoking lecture series on "Amazon Web Services" held from 27<sup>th</sup> Jan 2020 to 1<sup>st</sup> Feb 2020 at B V Raju College, Vishnupur, Bhimavaram.

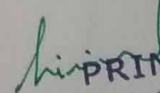
It is really a splendid lecture that exposed our students to the field practices. All the students appreciated and got benefitted from your views on the subject.

Looking forward for your cooperation for the promotion of compute education in future as well.



Thanking you.

Yours Sincerely,

  
PRINCIPAL  
Dr. B.V. R.I.C.E.  
Vishnupur, BHIMAVARAM-534 202

1<sup>st</sup> Feb 2020

To

Mr Varanasi Anil Kumar,

Technical Skill Trainer,

APSSDC.

Dear Sir,

Sub: Letter of Appreciation.

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Yours Sincerely,

*Principal*  
DR. B.V. R.I.C.E.  
Vishnupur, BHIMAVARAM-534 202.



**B V Raju College: Vishnupur::Bhimavaram**  
**A Three Day Workshop on AWS by APSSDC**  
**From 30-01-2020 to 01-02-2020**  
**Attendance Sheet - 30-01-2020**

Sl.No	Roll.No	Student Name	Attendance	
			Morning	Afternoon
1	173117137331	POLIREDDI ROHINI DEVI	9:00 P.Rohini Devi	2:00 P.Rohini Devi
2	173117137332	PURILLA GEETHIKA TULASI DURGA	9:00 P.G.T.Durga	2:00 P.G.T.Durga
3	173117137333	PURILLA KRUPA VARA PRASAD		
4	173117137334	PUTTA BALA MAHATHI	9:00 P.Bala Mahathi	2:00 P.Bala Mahathi
5	173117137335	RAJANA DEVI CHANDUNEELESH	9:00 R.Neellesh	2:35 R.Neellesh
6	173117137336	RONGALA DURGA PAVANI	9:00 R.D.Pavani	2:00 R.D.Pavani
7	173117137338	SAKA RAVITEJA	9:00 S.Raviteja	2:35 S.Raviteja
8	173117137339	SAMAVEDAM SRI LALITHA RASMITHA	9:00 S.S.L.Rasmitha	2:00 S.S.L.Rasmitha
9	173117137340	SAMUDRALA DEVA SAI SURYA RAO	9:00 S.D.S.Surya Rao	
10	173117137341	SEERA HEMANTHI		
11	173117137342	SHEIK ABDUL RAZAK		
12	173117137343	SHWETA DEEPIKA	Shweta Deepika 9:00	2:00 Shweta
13	173117137344	S PAVAN VEERA MANIKANTA	9:00 S.P.V.Manikanta	S.P.V.Manikanta
14	173117137345	SUNKARA ASHOK KUMAR	9:00 S.Ashok Kumar	2:00 S.Ashok Kumar
15	173117137346	SUVVARI SIVAKUMAR	9:00 S.Siva Kumar	2:20 S.Siva Kumar
16	173117137347	TALLURI PRADEEP	9:00 T.Pradeep	2:00 T.Pradeep
17	173117137348	THOTA PURUSHOTHAM	9:00 T.Purushotham	2:00 T.Purushotham
18	173117137349	TOOMU HARSHAVARDHINI	9:00 T.Harshavardhini	2:00 T.Harshavardhini
19	173117137350	TOOPATI YOGAMBICA	9:00 T.Yogambica	2:00 T.Yogambica
20	173117137351	UNDAVALLI JYOTHI V D SRAVANI	9:00 U.Sravani	2:00 U.Sravani
21	173117137352	VANKAYALA SAI PRIYA	9:00 V.Saipriya	2:00 V.Saipriya
22	173117137353	VARRE PURNA SAI KUMAR	9:00 V.purna Sai Kumar	
23	173117137354	VEERAGUMMULA ANUSHA	9:00 V.Anusha	2:00 V.Anusha
24	173117137355	VENDRA ADITYA KUMAR	9:00 V.Aditya Kumar	2:00 V.Aditya Kumar
25	173117137356	VINUKONDA JHANSI DURGA	9:00 V.Jhansi Durga	2:00 V.Jhansi Durga
26	173117137358	YADLA SAI RAMA SWAMY ANIL		
27	173117137359	YARAGOGU KRISHNA SATISH	9:00 Y.Krishna Satish	2:00 Y.Krishna Satish
28	III Msc			
28	173117109179	VANAPALLI PRATHYUSHA	9:00 V.Prathyusha	V.Prathyusha
29	173117109161	PAMARTHI LAKSHMI SAILAJA	9:00 P.L.Sailaja	2:00pm P.L.Sailaja
30	173117109184	SOWBHAGYA LAKSHMI AKULA	9:00 S.Lakshmi	2:00pm S.Lakshmi
31	173117109152	KANAKA RATNAM KURELLA	9:00 K.Kanaka Ratnam	2:00pm K.Kanaka Ratnam
32	173117109136	GANDHARAPU S P PHANI KUMARI	9:00AM G.S.P.Phanikumar	2:00 U.S.P.Phanikumar
33	173117109171	SHEK. HASEENA	9:00AM Haseena	2:00 Haseena
34	173117109139	GUNTURI CHITRAKRITHI SRI SINDHU	9:00AM G.Chitra	2:00 Chitra
35	173117109156	MANGALAMPALLI LAKSHMI MANASA	9:00 Am M.L.Manasa	2:00 M.L.Manasa
36	173117109166	POTTI JYOTHI SAI SRI LAKSHMI	9:00 Am Jyothi	2:00pm Jyothi
37	173117109132	CHITTOINA LEEIA MANUSHA	9:00 AM Chit.Manusha	2:00pm Chit.Manusha
38	173117109180	VANGIPURAPU YAMINI HARI PRIYA	9:00 AM V.Yaminithappa	2:00 V.Yaminithappa
39	173117109138	GIUNTU SINDHU	9:00 AM G.Sindhu	2:00pm G.Sindhu
40	173117109160	NOTHAKKI GOVATHANI	9:00 AM N.Govathani	2:00pm N.Govathani
41	173117109146	KANUKU VIJAYA SRI	9:00 AM K.Vijaya Sri	2:00pm K.Vijaya Sri
42	173117109121	Vanitha abbiseti	9:00AM Vanitha	2:00PM Vanitha
43	173117109142	Kadiyam Daneswari	9:00AM K.Daneswari	2:00PM K.Daneswari
44	173117109131	Chesupati sruthi	9:00AM Ch.Sruthi	2:00PM Ch.Sruthi



B.Sc. (M.E.CJ)

B V Raju College: Vishnupur::Bhimavaram  
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2	173117137302	KOTTU KARTHIK	9:10 K.Karthik	2:00 K.Karthik
3	173117137303	KROVIDI VANI VEERA VENKATA BHAVA DURGA	8:55 K.V.V.B. Durga	2:00 K.V.V.B. Durga
4	173117137304	KUNCHE LAKSHMI DURGA BHAVANI	9:30 K.L. Durga Bhavani	2:00 K.L. Durga Bhavani
5	173117137305	LANKAPALLI SAI VENKATA SUDHIR	9:10 L.V. Sudhir	2:00 L.V. Sudhir
6	173117137306	MADDULA SURYANARAYANA MURTHY	9:10 Murthy	
7	173117137307	MAGAPU VENKATESH		
8	173117137308	MALLADI VAMSI SAI CHANDU	9:00 M.V.S. Chandu	2:00 M.V.S. Chandu
9	173117137309	MALLUVALASA KARTHIK		
10	173117137310	MANGINA YESU BABU	9:10 M. Yezubabu	2:10 M. Yezubabu
11	173117137311	MENTE SRI SAI SATYA SRAVANI		
12	173117137312	MUDENDLA MEGHANA	9:10 M. Meghana	2:00 M. Meghana
13	173117137313	MUDUNURI DHARANI	9:10 M. Dharani	2:00 M. Dharani
14	173117137314	MUTHYALA NAGA SAI DILEEP KUMAR	9:20 M. Dileep Kumar	2:00 M. Dileep Kumar
15	173117137315	NAGIDI MOHINI GANGA BHAVANI	9:00 N. Bhavani	2:00 N. Bhavani
16	173117137316	NAGIDI MOUNIKA	9:00 N. Mounika	2:00 N. Mounika
17	173117137317	NAIDU DUNDI VENKATA SATYA MAVULLU	9:00 N. D. V. S. Mavullu	2:00 N. D. V. S. Mavullu
18	173117137318	NALLAM LAKSHMI BHAVANI SAI	9:00 N. L. Bhavani Sai	2:00 N. L. Bhavani Sai
19	173117137319	NANDYALA SIRISHA	9:05 N. Sirisha	2:00 N. Sirisha
20	173117137321	NIMMALA NAGA VENKATA SIVA GANESH	9:00 N. N. V. S. Ganesh	
21	173117137322	NIMMALA VIJAY KUMAR		
22	173117137323	PALAPARTHI JASWANTH	9:00 P. Jaswath	2:00 P. Jaswath
23	173117137324	PALLAPOTHU RAMYA	9:15 P. Ramya	2:00 P. Ramya
24	173117137325	PANDALA PAVAN KUMAR	9:20 P. Pavan	2:00 P. Pavan
25	173117137326	PENIMATHSA SIRISHA	9:05 P. Sirisha	2:00 P. Sirisha
26	173117137327	PENMETS SA GEETHIKA	9:30 P. Geethika	2:00 P. Geethika
27	173117137328	PENMETS SA HARITHA	9:15 P. Haritha	2:00 P. Haritha
28	173117137329	PENUKUDURU AJAY KUMAR		
29	173117137330	PILLI MONISHA	9:00 P. Monisha	2:00 P. Monisha
30	173117102067	BALLARI SHABREEN	9:00 B. Shabreen	
31	173117102087	KUDIPUDI DURGA BHAVANI	9:00 K. Durga	2:00 R. Prasanna
32	173117102098	MUKKU SITA MAHALAKSHMI	9:00 M. S. Mahalakshmi	
33	173117102113	RUDRARAJU GEETA NAGA LAKSHMI PRASANNA	9:15 R. G. M. Prasanna	2:00 R. Prasanna
34	173117102117	VALAVALA BALA TRIPURA SUNDARI	9:05 V. B. T. Sundari	2:00 V. B. T. Sundari
35	173117102120	YERRA YAMINI LAKSHMI	9:05 Y. Yamini Lakshmi	2:00 Y. Yamini Lakshmi
36	173117109147	KEERTHANA B.S	9:05 Keethana	2:00 Keethana
37	173117109170	JAHEENA SHAIK	9:05 Sh. Jaheena	2:00 Sh. Jaheena

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30	173117109131	CHEMPATI SRUTHI	9:00 Ch. Sruthi	2:00 Ch. Sruthi
31	173117109132	CHITTIBOINA LEELA MANUSHA	9:00 L. Leela	2:00 L. Leela
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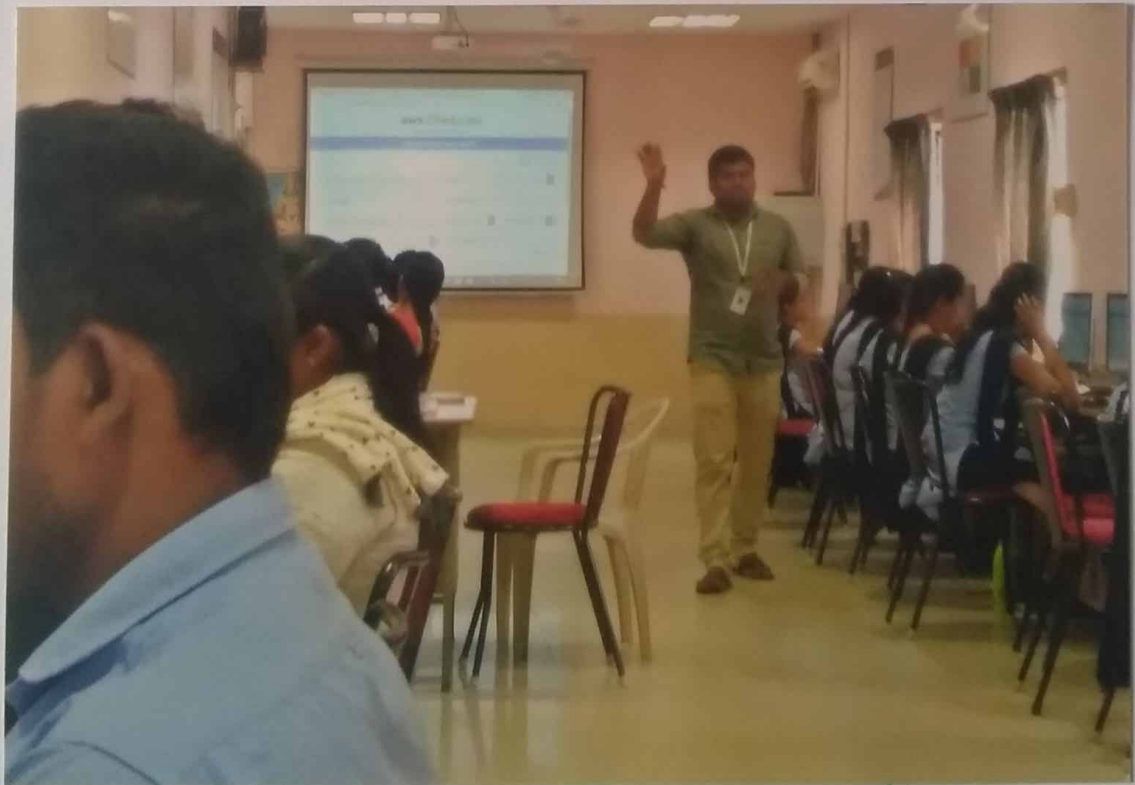
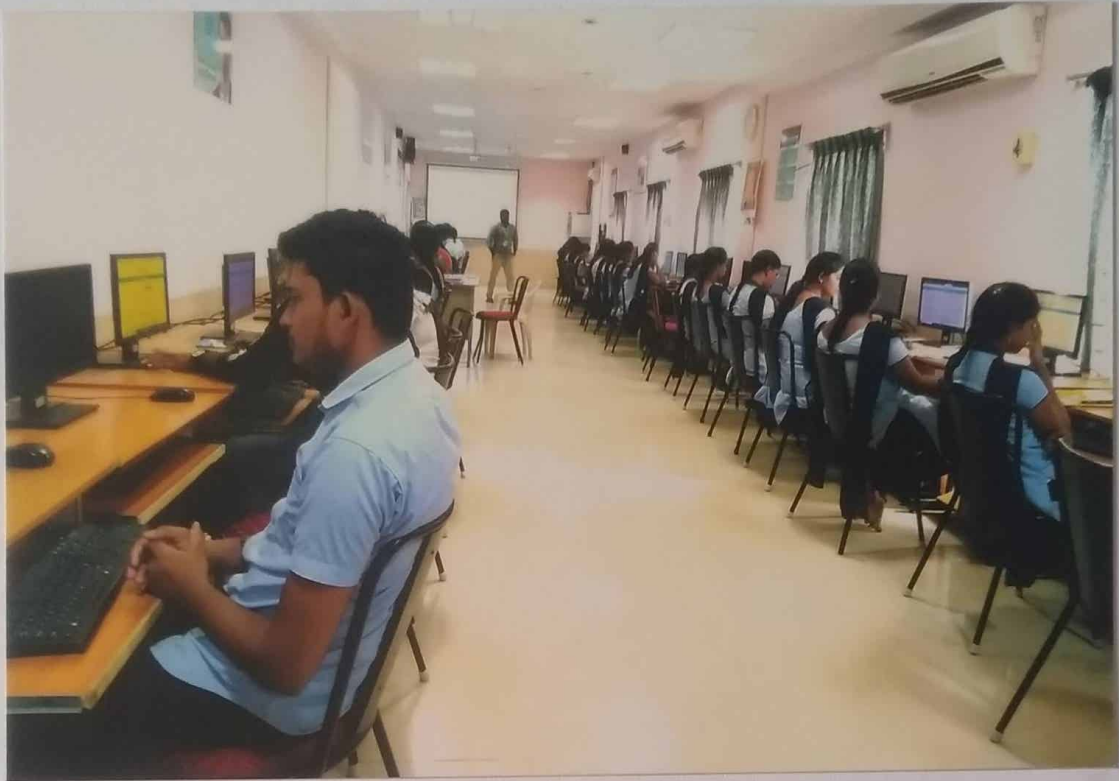


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14	173117137314	MUTHYALA NAGA SAI DILEEP KUMAR	9:25 M.N.S.D. Dileep Kumar	2:00 M.N.S.D. Dileep Kumar
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34	173117102117	VALAVALA BALA TRIPURA SUNDARI	9:05 V.B.T. Sundari	2:00 V.B.T. Sundari
35	173117102120	YERRA YAMINI LAKSHMI	9:05 Y. Yamini Lakshmi	2:00 Y. Yamini Lakshmi
36	173117109147	KEERTHANA B.S	9:05 Keethana	2:00 Keethana
37	173117109170	JAHEENA SHEIK	9:05 St. Jaheena	2:00 St. Jaheena

# Amazon Web Services

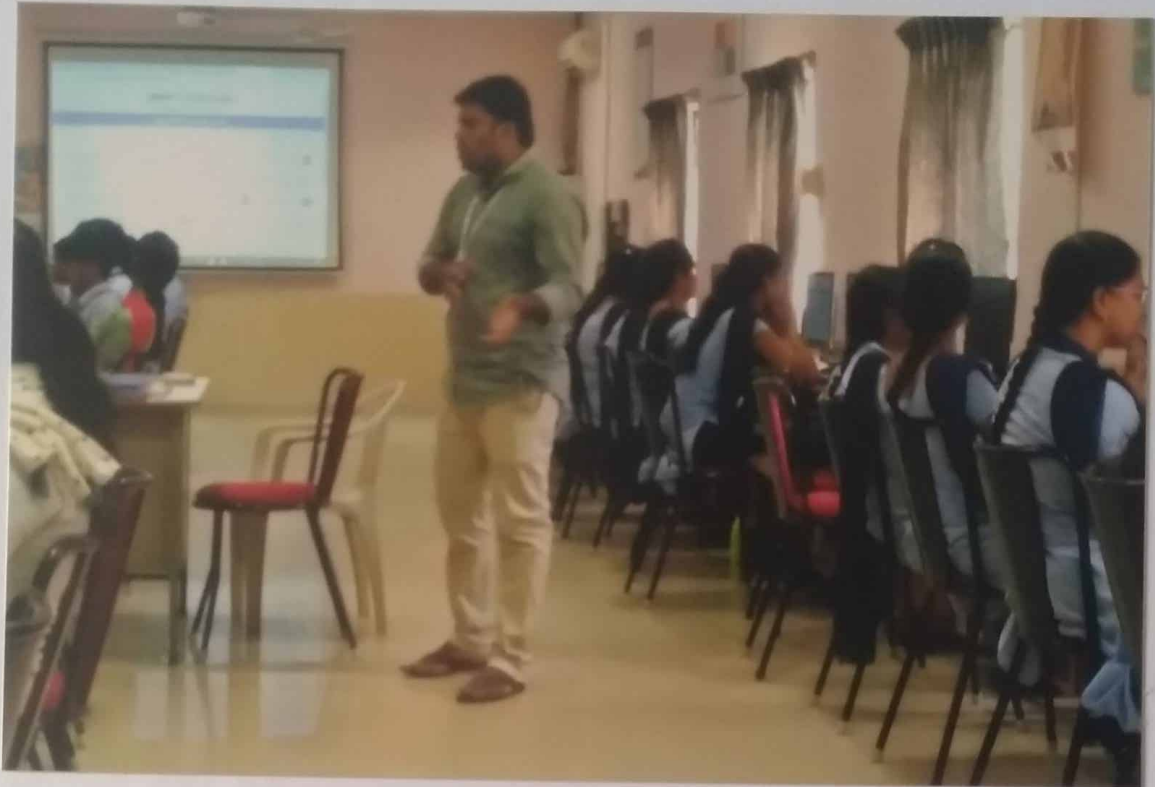
by Mr. V. Anil Kumar & Mr. N. Utpi Kalishna  
APBSDC

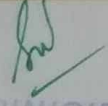


*hu*  
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V. RAJU COLLEGE  
VISHNUPUR, BHIMAVARAM-534 202



Amazon web Services  
by Mr. V. Anil Kumar & Mr. N. Gopi Krishna  
APSSDC.



  
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## Who is Amazon !!

- American international multibillion dollar electronic commerce company with headquarters in Seattle, Washington, USA.
  - started in **1995** by **Jeff Bezos** as an **online bookstore**.
  - but **soon diversified**, selling DVDs, VHSs, CDs, video and MP3 downloads/streaming, software, video games, electronics, apparel, furniture, food, toys, and jewelry.
  - The company also **produces consumer electronics**: Kindle e-book reader and the Kindle Fire tablet computer.
  - In **2006**, Amazon officially **launched the Amazon Web Services (AWS)** to become a **major provider of cloud computing services**.

## What is Amazon Web Services ?

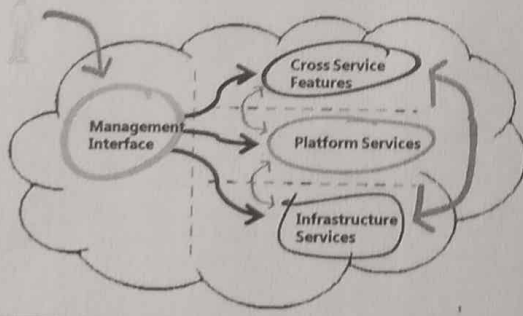
- **Amazon Web Services (AWS)** is a collection of **remote computing services (web services)** that together make up a **cloud computing platform**, offered over the Internet by Amazon.com.
- Website: <http://aws.amazon.com>
- AWS is located in **9 geographical 'Regions'**. Each Region is **wholly contained within a single country** and all of its data and services **stay within the designated Region**.
- Each Region has **multiple 'Availability Zones'**, which are **distinct data centers** providing AWS services. **Availability Zones are isolated from each other** to prevent outages from spreading between Zones. However, several services **operate across Availability Zones** (e.g. S3, DynamoDB).



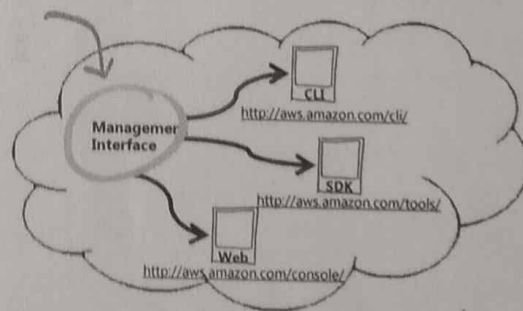
## What is AWS Offering?

- **Low Ongoing Cost**: **pay-as-you-go** pricing with **no up-front expenses** or long-term commitments.
- **Instant Elasticity & Flexible Capacity**: (**scaling up and down**) Eliminate guessing on your infrastructure capacity needs.
- **Speed & Agility**: Develop and deploy applications faster instead of waiting weeks or months for hardware to arrive and get installed.
- **Apps not Ops**: Focus on projects. Lets you shift resources away from data center investments and operations and move them to innovative new projects.
- **Global Reach**: Take your apps global in minutes.
- **Open and Flexible**: You choose the development platform or programming model that makes the most sense for your business.
- **Secure**: Allows your application to take advantage of the multiple layers of operational and physical security in the AWS data centers to ensure the integrity and safety of your data.

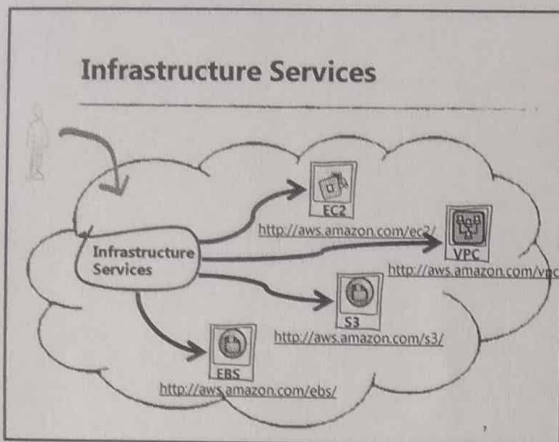
## The Amazon Web Services Universe



## Management Interface







Infrastructure Services

## Amazon Elastic Compute Cloud (EC2)

- A web service that provides **resizable compute capacity** in the cloud.
- EC2 allows **creating Virtual Machines (VM) on-demand**. Pre-configured **templated Amazon Machine Image (AMI)** can be used get running immediately. Creating and sharing your own AMI is also possible via the **AWS Marketplace**.
- **Auto Scaling** allows **automatically scale of the capacity up** seamlessly during demand spikes to maintain performance, and **scales down** during demand lulls to minimize costs.
- **Elastic Load Balancing** automatically distributes incoming application traffic across multiple Amazon EC2 instances.
- Provide tools to build **failure resilient applications** by launching application instances in **separate Availability Zones**.
- Pay only for resources actually consume, **instance-hours**.
- **VM Import/Export** enables you to easily import virtual machine images from your existing environment to Amazon EC2 instances and export them back at any time.

Infrastructure Services

## EC2 Instances

- **Micro instances (t1.micro):**
  - Micro Instance 613 MiB of memory, up to 2 ECUs (for short periodic bursts), EBS storage only, 32-bit or 64-bit platform.
- **Standard Instances** provide customers with a balanced set of resources and a low cost platform.
  - **M1 Small Instance (Default)** 1.7 GiB of memory, 1 EC2 Compute Unit (1 virtual core with 1 EC2 Compute Unit), 160 GB of local instance storage, 32-bit or 64-bit platform.
  - **M1 Medium Instance** 3.75 GiB of memory, 2 EC2 Compute Units (1 virtual core with 2 EC2 Compute Units each), 410 GB of local instance storage, 32-bit or 64-bit platform.
  - **M1 Large Instance** 7.5 GiB of memory, 4 EC2 Compute Units (2 virtual cores with 2 EC2 Compute Units each), 850 GB of local instance storage, 64-bit platform.
  - **M1 Extra Large Instance** 15 GiB of memory, 8 EC2 Compute Units (4 virtual cores with 2 EC2 Compute Units each), 1690 GB of local instance storage, 64-bit platform.
  - **M3 Extra Large Instance** 15 GiB of memory, 13 EC2 Compute Units (4 virtual cores with 3.25 EC2 Compute Units each), EBS storage only, 64-bit platform.
  - **M3 Double Extra Large Instance** 30 GiB of memory, 26 EC2 Compute Units (8 virtual cores with 3.25 EC2 Compute Units each), EBS storage only, 64-bit platform.

One EC2 Compute Unit (ECU) provides the equivalent CPU capacity of a 1.0-1.2 GHz 2007 Opteron or 2007 Xeon processor.

Infrastructure Services

## EC2 High Performance Instances

- **High-Memory Instances:**
  - **High-Memory Extra Large Instance** 17.1 GiB memory, 6.5 ECU (2 virtual cores with 3.25 EC2 Compute Units each), 420 GB of local instance storage, 64-bit platform
  - **High-Memory Double Extra Large Instance** 34.2 GiB of memory, 13 EC2 Compute Units (4 virtual cores with 3.25 EC2 Compute Units each), 850 GB of local instance storage, 64-bit platform
  - **High-Memory Quadruple Extra Large Instance** 68.4 GiB of memory, 26 EC2 Compute Units (8 virtual cores with 3.25 EC2 Compute Units each), 1690 GB of local instance storage, 64-bit platform
- **High-CPU Instances**
  - **High-CPU Medium Instance** 1.7 GiB of memory, 5 EC2 Compute Units (2 virtual cores with 2.5 EC2 Compute Units each), 350 GB of local instance storage, 32-bit or 64-bit platform
  - **High-CPU Extra Large Instance** 7 GiB of memory, 20 EC2 Compute Units (8 virtual cores with 2.5 EC2 Compute Units each), 1690 GB of local instance storage, 64-bit platform
- **High Storage Instances**
  - **High Storage Eight Extra Large** 117 GiB memory, 35 EC2 Compute Units, 24 \* 2 TB of hard disk drive local instance storage, 64-bit platform, 10 Gigabit Ethernet
- **High I/O Instances**
  - **High I/O Quadruple Extra Large** 60.5 GiB memory, 35 EC2 Compute Units, 2 \* 3024 GB of SSD-based local instance storage, 64-bit platform, 10 Gigabit Ethernet

Infrastructure Services

## EC2 Cluster Instances

**Cluster Compute Instances** provide proportionally high CPU resources with **increased network performance and are well suited for High Performance Compute (HPC)** applications and other demanding network-bound applications.

- **Cluster Compute Eight Extra Large** 60.5 GiB memory, 88 EC2 Compute Units, 3370 GB of local instance storage, 64-bit platform, 10 Gigabit Ethernet

- **High Memory Cluster Instances** provide proportionally high CPU and memory resources with increased network performance, and are **well suited for memory-intensive applications including in-memory analytics, graph analysis, and scientific computing**.
  - **High Memory Cluster Eight Extra Large** 244 GiB memory, 88 EC2 Compute Units, 240 GB of local instance storage, 64-bit platform, 10 Gigabit Ethernet
- **Cluster GPU Instances** provide **general-purpose graphics processing units (GPUs)** with proportionally high CPU and increased network performance for **applications benefitting from highly parallelized processing, including HPC, rendering and media processing applications**.
  - **Cluster GPU Quadruple Extra Large** 22 GiB memory, 33.5 EC2 Compute Units, 2 x NVIDIA Tesla "Fermi" M2050 GPUs, 1690 GB of local instance storage, 64-bit platform, 10 Gigabit Ethernet

Infrastructure Services

## EC2 Payment methods

- **On-Demand Instances** let you **pay for compute capacity by the hour with no long-term commitments**.
- **Reserved Instances** give you the option to **make a low, one-time payment for each instance** you want to reserve and in turn **receive a significant discount on the hourly charge** for that instance.
- **Spot Instances** allow customers to **bid on unused Amazon EC2 capacity and run those instances for as long as their bid exceeds the current Spot Price**.

**Infrastructure Services**

## Amazon Elastic Block Store (EBS)

- Provides **block level storage volumes (1 GB to 1 TB)** for use with Amazon EC2 instances.
  - Multiple volumes can be mounted to the same instance.
  - EBS volumes are **network-attached**, and **persist independently** from the life of an instance.
  - Storage volumes behave like **raw, unformatted block devices**, allowing users to **create a file system** on top of Amazon EBS volumes, or use them in any other way you would use a block device (like a hard drive).
- EBS volumes are **placed in a specific Availability Zone**, and can then be attached to instances also in that same Availability Zone.
- Each storage volume is **automatically replicated within the same Availability Zone**.
- EBS provides the ability to **create point-in-time snapshots of volumes**, which are **persisted to Amazon S3**.
  - These snapshots can be used as the **starting point for new Amazon EBS volumes**, and protect data for long-term durability.
  - The same snapshot can be used to **instantiate as many volumes as you want**.
  - These snapshots can be **copied across AWS regions**.

**Infrastructure Services**

## EBS Volumes

- Standard volumes** offer storage for applications with **moderate or bursty I/O** requirements.
  - Standard volumes deliver approximately **100 IOPS** on average.
  - well suited for use as **boot volumes**, where the burst capability provides fast instance start-up times.
- Provisioned IOPS volumes** are designed to deliver **predictable, high performance for I/O intensive workloads such as databases**.
  - You **specify an IOPS rate** when creating a volume, and EBS provisions that rate for the lifetime of the volume.
  - Amazon EBS currently supports up to **4000 IOPS per Provisioned IOPS volume**.
  - You can **stripe multiple volumes together to deliver thousands of IOPS per EC2 instance**.
- To enable your EC2 instances to fully utilize the IOPS provisioned on an EBS volume.
  - Launch selected Amazon EC2 instance types as **"EBS-Optimized"** instances.
  - EBS-optimized instances deliver dedicated throughput between Amazon EC2 and Amazon EBS**, with options between **500 Mbps and 1000 Mbps** depending on the instance type used.

**Infrastructure Services**

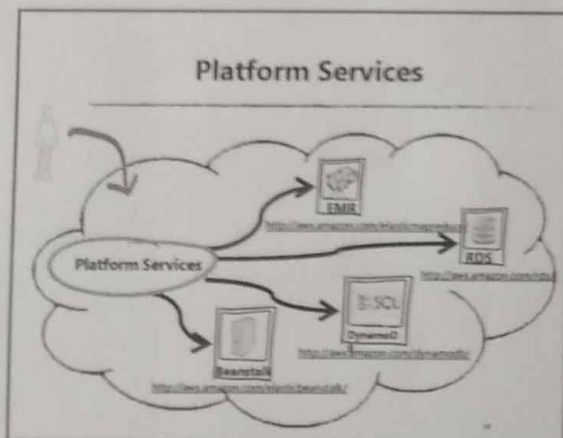
## Amazon Simple Storage Service (S3)

- Amazon S3 provides a **simple web services interface** that can be used to **store and retrieve any amount of data, at any time, from anywhere on the web**.
- Write, read, and delete objects containing from **1 byte to 5 terabytes of data** each. The number of objects you can store is **unlimited**.
- Each object is stored in a **bucket** and retrieved via a unique, **developer-assigned key**.
  - A bucket can be stored in one of several **regions**.
  - You can choose a **region** to optimize for latency, minimize costs, or address regulatory requirements.
  - Objects stored in a region **never leave the region** unless you transfer them out.
- Authentication mechanisms** are provided to ensure that data is kept secure from unauthorized access.
  - Objects can be made **private or public**, and rights can be granted to specific users.
- S3 charges based on **per GB-month AND per I/O requests AND per data modification requests**.

**Infrastructure Services**

## Amazon Virtual Private Cloud (VPC)

- Amazon VPC** lets you **provision a logically isolated section of the Amazon Web Services (AWS) Cloud**.
- You have **complete control** over your virtual networking environment, including
  - selection of your own **IP address range**,
  - creation of **subnets**, and
  - configuration of **route tables and network gateways**.
- VPC allows **bridging with an onsite IT infrastructure** with an **encrypted VPN connection** with an **extra charge per VPN Connection-hour**.
- There is **no additional charge** for using Amazon Virtual Private Cloud, aside from the normal Amazon EC2 usage charges.



**Platform Services**

## Amazon Elastic MapReduce (EMR)

- Amazon EMR** is a web service that makes it easy to **quickly and cost-effectively process vast amounts of data using Hadoop**.
- Amazon EMR **distributes the data and processing across a resizable cluster of Amazon EC2 instances**.
- With Amazon EMR you can launch a **persistent cluster that stays up indefinitely** or a **temporary cluster that terminates after the analysis is complete**.
- Amazon EMR supports a **variety of Amazon EC2 instance types and Amazon EC2 pricing options** (On-Demand, Reserved, and Spot).
- When launching an Amazon EMR cluster (also called a "job flow"), you choose **how many and what type of Amazon EC2 instances** to provision.
- The Amazon EMR price is in **addition to the Amazon EC2 price**.
- Amazon EMR is used in a variety of applications, including **log analysis, web indexing, data warehousing, machine learning, financial analysis, scientific simulation, and bioinformatics**.



Platform Services

RDS  
Relational Database Service

## Amazon Relational Database Service (RDS)

- Amazon RDS is a web service that makes it easy to set up, operate, and scale a relational database in the cloud.
- Amazon RDS gives access to the capabilities of a familiar MySQL, Oracle or Microsoft SQL Server database engine.
  - Code, applications, and tools already used with existing databases can be used with RDS.
- Amazon RDS automatically patches the database software and backs up the database, storing the backups for a user-defined retention period and enabling point-in-time recovery.
- Amazon RDS provides scaling the compute resources or storage capacity associated with the Database Instance.
- Pay only for the resources actually consumed, based on the DB Instance hours consumed, database storage, backup storage, and data transfer.
  - On-Demand DB Instances let you pay for compute capacity by the hour with no long-term commitments.
  - Reserved DB Instances give the option to make a low, one-time payment for each DB Instance and in turn receive a significant discount on the hourly usage charge for that DB Instance.

## SQL Databases

- In relational databases (SQL Databases), ACID (Atomicity, Consistency, Isolation, Durability) is a set of properties that guarantee that database transactions are processed reliably.
  - Atomicity requires that each transaction is "all or nothing": if one part of the transaction fails, the entire transaction fails, and the database state is left unchanged.
  - The consistency property ensures that any transaction will bring the database from one valid state to another.
  - The isolation property ensures that the concurrent execution of transactions results in a system state that would be obtained if transactions were executed serially.
  - Durability means that once a transaction has been committed, it will remain so, even in the event of power loss, crashes, or errors.

Platform Services

DynamoDB  
The NoSQL Database Service

## Amazon DynamoDB

- DynamoDB is a fast, fully managed NoSQL database service that makes it simple and cost-effective to store and retrieve any amount of data, and serve any level of request traffic.
- All data items are stored on Solid State Drives (SSDs), and are replicated across 3 Availability Zones for high availability and durability.
- DynamoDB tables do not have fixed schemas, and each item may have a different number of attributes.
- DynamoDB has no upfront costs and implements a pay as you go plan as a flat hourly rate based on the capacity reserved.

## NoSQL Databases

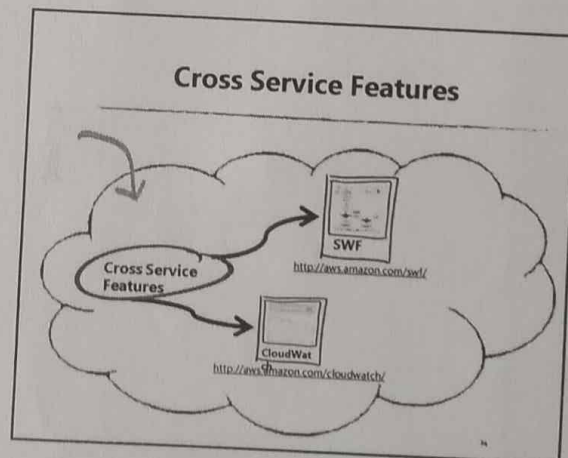
- A NoSQL database provides a mechanism for storage and retrieval of data that employs less constrained consistency models than traditional relational databases.
- NoSQL databases only support Eventual Consistency which is a consistency model used in distributed computing that informally guarantees that, if no new updates are made to a given data item, eventually all accesses to that item will return the last updated value.
- NoSQL databases are often highly optimized key-value stores intended for simple retrieval and appending operations, with the goal being significant performance benefits in terms of latency and throughput.
- Key-value stores allow the application to store its data in a schema-less way.
  - The data could be stored in a datatype of a programming language or an object. Because of this, there is no need for a fixed data model.

Platform Services

Elastic Beanstalk  
AWS Application Container

## Amazon Elastic Beanstalk

- AWS Elastic Beanstalk provides a solution to quickly deploy and manage applications in the AWS cloud.
- You simply upload your application, and Elastic Beanstalk automatically handles the deployment details of capacity provisioning, load balancing, auto-scaling, and application health monitoring.
- Elastic Beanstalk leverages AWS services such as Amazon EC2, Amazon S3, ...
- To ensure easy portability of your application, Elastic Beanstalk is built using familiar software stacks such as:
  - Apache HTTP Server for Node.js, PHP and Python
  - Passenger for Ruby,
  - IIS 7.5 for .NET
  - Apache Tomcat for Java
- There is no additional charge for Elastic Beanstalk - you pay only for the AWS resources needed to store and run your applications.



**Cross Service Features**

**CloudWatch**  
Resource and Application Monitoring

## Amazon CloudWatch


- Amazon CloudWatch provides **monitoring for AWS cloud resources** and the applications customers run on AWS.
- Amazon CloudWatch lets you **programmatically retrieve your monitoring data, view graphs, and set alarms** to help you troubleshoot, spot trends, and take **automated action** based on the state of your cloud environment.
- Amazon CloudWatch enables you to monitor your AWS resources **up-to-the-minute in real-time**, including:
  - Amazon EC2 instances,
  - Amazon EBS volumes,
  - Elastic Load Balancers,
  - Amazon RDS DB instances.
- Metrics such as **CPU utilization, latency, and request counts** are provided automatically for these AWS resources.
- Customers can also supply their **own custom application and system metrics**, such as **memory usage, transaction volumes, or error rates**.

**Cross Service Features**

**SWF**  
Simple Workflow Service for Coordinating Applications

## Amazon Simple Workflow Service (SWF)

- Amazon SWF is a task coordination and state management service** for cloud applications.
- Using Amazon SWF, you **structure** the various **processing steps** in an application that **runs across one or more machines** as a set of **"tasks."**
- Amazon SWF **manages dependencies** between the tasks, **schedules** the tasks for execution, and runs any logic that needs to be **executed in parallel**.
- The service also **tracks** the tasks' **progress**.
- As the **business requirements change**, Amazon SWF makes it **easy to change application logic** without having to **worry about the underlying state machinery and flow control**.



## Watch out for unexpected Costs

- When you finish your work remember to make sure of the following to avoid unwanted costs:
  - Delete** your **S3** objects.
  - Stop or **Shut Down** your **EC2** and **RDS** instances.
- The customer is responsible for the resources he's using. AWS declines any responsibility if the customer forgets to shut down resources.

## AWS Free Usage Tier

**MORE INFO** →

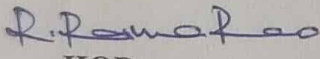
- <http://aws.amazon.com/free/>

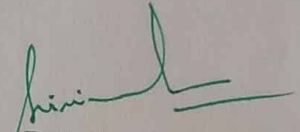


## CIRCULAR

Date: 20<sup>th</sup> Jan 2020

It is informed to that; the department of Computer Science is conducting a One-Week workshop on “Amazon Web Services” for III BSc II Semester Computer Science students by Mr V Anil Kumar & Mr N Gopi Krishna, Technical Skill Trainers, APSSDC from 27<sup>th</sup> Jan 2020 to 1<sup>st</sup> Feb 2020. Interested students could consult Mr. B Naresh to enrol your names.

  
HOD

  
Principal

PRINCIPAL  
Dr. B.V. R.I.C.E.  
Vishnupur, BHIMAVARAM-534 202

B V RAJU COLLEGE

VISHNUPUR::BHIMAVARAM

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DEPARTMENT OF COMPUTER SCIENCE

EVENT NAME: AWS

DATE: 1/3/2020

PARTICIPANT FEEDBACK FORM

Name of the Student : S. Ravi Teja  
Register Number : 173117137338  
Course & Group : III<sup>rd</sup> M.E-LS  
Contact Number : 903229979  
Email ID : Raviteja.saka338@gmail.com.  
Future events you are expecting :  
How do you rate the event conducted: 1/2/3/4/5<sup>✓</sup>  
Are you satisfied with event conduction: Yes/No<sup>✓</sup>  
Comments or Suggestions : NO

S. Ravi Teja .  
Signature of the student



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---

DEPARTMENT OF COMPUTER SCIENCE

EVENT NAME: *AWS*

DATE: *01/03/2020*

PARTICIPANT FEEDBACK FORM

Name of the Student : *SK. Haseena*

Register Number : *173117109171*

Course & Group : *III<sup>rd</sup> M.E-Cs*

Contact Number : *9154180222*

Email ID : *~~SK~~ Haseena121@gmail.com*

Future events you are expecting :

How do you rate the event conducted: *1/2/3/4/5*

Are you satisfied with event conduction: *Yes/No*

Comments or Suggestions : *No*

*SK. Haseena*  
Signature of the student

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DEPARTMENT OF COMPUTER SCIENCE

EVENT NAME: AWS

DATE: 1/03/2020

PARTICIPANT FEEDBACK FORM

Name of the Student : T. Pradeep  
Register Number : 173117137347  
Course & Group : III<sup>rd</sup> MECS  
Contact Number : 8074000367  
Email ID : Pradeep123@gmail.com

Future events you are expecting :

How do you rate the event conducted: 1/2/3/4/5

Are you satisfied with event conduction: Yes/No

Comments or Suggestions : Nothing

T. Pradeep  
Signature of the student



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DEPARTMENT OF COMPUTER SCIENCE

EVENT NAME: AWS

DATE: 1/03/2020

PARTICIPANT FEEDBACK FORM

Name of the Student : G. S. P. Phani Kumari  
Register Number : 173117109136  
Course & Group : III<sup>rd</sup> MEC'S  
Contact Number : 9573711669  
Email ID : Phani.kumari123@gmail.com.  
Future events you are expecting :  
How do you rate the event conducted: 1/2/3/4/5 ✓  
Are you satisfied with event conduction: Yes/No ✓  
Comments or Suggestions : Nothing

G. Kumari  
Signature of the student

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DEPARTMENT OF COMPUTER SCIENCE

EVENT NAME: AWS

DATE: 1/3/2020

PARTICIPANT FEEDBACK FORM

Name of the Student : G. Sindhu  
Register Number : 173117109138  
Course & Group : III<sup>rd</sup> MECS  
Contact Number : 7416114507  
Email ID : sindhu138@gmail.com

Future events you are expecting :

How do you rate the event conducted: 1/2/3/4/5

Are you satisfied with event conduction: Yes/No

Comments or Suggestions : NO

G. Sindhu  
Signature of the student