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Technology

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DEPARTMENT OF INFORMATION TECHNOLOGY

SCHOOL OF COMPUTING

SATHYABAMA INSTITUTE OF SCIENCE AND
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SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

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DEPARTMENT OF INFORMATION TECHNOLOGY

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of HARISH KATARI (**39120036**) who carried out the project entitled “**Types of cloud models and cloud computing**” under my supervision from June 2021 to November 2021.

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DECLARATION

I, **HARISH.K** hereby declare that the project report entitled “**Types of cloud models and cloud computing**” done by me under the guidance of **Dr.G.MATHIVANAN** is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering Degree in Information Technology

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TRAINING CERTIFICATE



Award of Completion

Harish Katari

Has Successfully Completed

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ABSTRACT

Cloud computing is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user. Large clouds often have functions distributed over multiple locations, each location being a data center. Cloud computing relies on sharing of resources to achieve coherence and economies of scale, typically using a "pay-as-you-go" model which can help in reducing capital expenses but may also lead to unexpected operating expenses for unaware users.

Microsoft Azure is a cloud computing platform that provides a wide variety of services that we can use without purchasing and arranging our hardware. It enables the fast development of solutions and provides the resources to complete tasks that may not be achievable in an on-premises environment. Azure Services like compute, storage, network, and application services allow us to put our effort into building great solutions without worrying about the assembly of physical infrastructure.

Microsoft Azure is completely based on the concept of virtualization. So, similar to other virtualized data center, it also contains racks. Each rack has a separate power unit and network switch, and also each rack is integrated with a software called Fabric-Controller. This Fabric-controller is a distributed application, which is responsible for managing and monitoring servers within the rack. In case of any server failure, the Fabric-controller recognizes it and recovers it. And Each of these Fabric-Controller is, in turn, connected to a piece of software called Orchestrator. This Orchestrator includes web-services, Rest API to create, update, and delete resources

TABLE OF CONTENTS

CHAPTER No.	TITLE	PAGE No
	ABSTRACT	6
1	INTRODUCTION	9
	1.1characteristic of cloud computing	11
2.	AIM AND SCOPE OF THE PRESENT INVESTIGATION	13
	2.1private clouds	13
	2.2public clouds	14
	2.3 Hybrid clouds	14
	2.4 Multi clouds	15
	2.5Community clouds	15
	2.6Cloud Services	16
3.	EXPERIMENTAL OR MATERIALS AND METHODS, ALGORITHMS USED	25
	Service management table	25
4.	RESULTS AND DISCUSSION, PERFORMANCE ANALYSIS	26
	Platform Description	26

5	SUMMARY AND CONCLUSIONS	28
	REFERENCES	28
	APPENDIX	
	A.SCREENSHOTS	30

1. INTRODUCTION

The term cloud refers to a network or the internet. It is a technology that uses remote servers on the internet to store, manage, and access data online rather than local drives. The data can be anything such as files, images, documents, audio, video, and more.

There are the following operations that we can do using cloud computing:

- Developing new applications and services
- Storage, back up, and recovery of data
- Hosting blogs and websites
- Delivery of software on demand
- Analysis of data
- Streaming videos and audios

Cloud computing is a virtualization-based technology that allows us to create, configure, and customize applications via an internet connection. The cloud technology includes a development platform, hard disk, software application, and database.

Cloud computing is a technology to store, manage, process, and access the data over the internet instead of a local server or computer hard drives. Here, the term cloud is taken from the symbol of the internet users in the flowcharts. The remote servers are used in cloud computing to store the data that can be accessed from anywhere using the internet.

With the help of cloud computing, an organization can save lots of cost of local data storage, maintenance of data, etc. The information over the cloud can be accessed by anyone, anywhere, and anytime, with the help of the internet.

Using cloud computing instead of traditional storage helps users with lots of benefits such as speed, cost-effectiveness, security, global access, etc.

Cloud computing involves two main concepts:

Vendors: who provide the software apps on the clouds.

Clients: who access the software apps via cloud.

Small as well as large IT companies, follow the traditional methods to provide the IT infrastructure. That means for any IT company, we need a Server Room that is the basic need of IT companies.

In that server room, there should be a database server, mail server, networking, firewalls, routers, modem, switches, QPS (Query Per Second means how much queries or load will be handled by the server), configurable system, high net speed, and the maintenance engineers.

To establish such IT infrastructure, we need to spend lots of money. To overcome all these problems and to reduce the IT infrastructure cost, Cloud Computing comes into existence.

1.1 Characteristics of Cloud Computing

The characteristics of cloud computing are given below:

1) Agility

The cloud works in a distributed computing environment. It shares resources among users and works very fast.

2) High availability and reliability

The availability of servers is high and more reliable because the chances of infrastructure failure are minimum.

3) High Scalability

Cloud offers "on-demand" provisioning of resources on a large scale, without having engineers for peak loads.

4) Multi-Sharing

With the help of cloud computing, multiple users and applications can work more efficiently with cost reductions by sharing common infrastructure.

5) Device and Location Independence

Cloud computing enables the users to access systems using a web browser regardless of their location or what device they use e.g. PC, mobile phone, etc. As

infrastructure is off-site (typically provided by a third-party) and accessed via the Internet, users can connect from anywhere.

6) Maintenance

Maintenance of cloud computing applications is easier, since they do not need to be installed on each user's computer and can be accessed from different places. So, it reduces the cost also.

7) Low Cost

By using cloud computing, the cost will be reduced because to take the services of cloud computing, IT company need not to set its own infrastructure and pay-as-per usage of resources.

8) Services in the pay-per-use mode

Application Programming Interfaces (APIs) are provided to the users so that they can access services on the cloud by using these APIs and pay the charges as per the usage of services.

2.AIM AND SCOPE OF THE PRESENT INVESTIGATIONS

TYPES OF CLOUD COMPUTING & CLOUD COMPUTING SERVICES

There are 5 main types of cloud computing:

- private clouds
- public clouds
- hybrid clouds
- multi clouds.
- Community clouds.

There are also 5 main types of cloud computing services:

- Infrastructure-as-a-Service (IaaS)
- Platforms-as-a-Service (PaaS)
- Software-as-a-Service (SaaS)
- Database-as-a-service (DBaaS)
- Business-process-as-a-service (BPAas)

in cloud computing, we have access to a shared pool of computer resources (servers, storage, programs, and so on) in the cloud. you simply need to request additional resources when you require them. getting resources up and running quickly is a breeze thanks to the clouds. it is possible to release resources that are no longer necessary. this method allows you to just pay for what you use. your cloud provider is in charge of all upkeep. it functions as a virtual computing environment with a deployment architecture that varies depending on the amount of data you want to store and who has access to the infrastructure. different types of cloud computing deployment models are:

2.1 PUBLIC CLOUDS :

public cloud is a cloud deployment model where computing resources are owned and operated by a provider and shared across multiple tenants via the internet.

- public cloud is an it model where on-demand computing services and infrastructure are managed by a third-party provider and shared with multiple organisations using the public internet.
- public cloud service providers may offer cloud-based services such as infrastructure as a service (iaas), platform as a service (paas), or software as a service (saas) to users for either a monthly or pay-per-use fee, eliminating the need for users to host these services on site in their own [data center](#).

2.2 PRIVATE CLOUDS :

- private cloud is a cloud computing environment dedicated to a single customer. it combines many of the benefits of cloud computing with the security and control of on-premises it infrastructure.
- private cloud (also known as an internal cloud or corporate cloud) is a [cloud computing](#) environment in which all hardware and software resources are dedicated exclusively to, and accessible only by, a single customer.
- private cloud combines many of the benefits of cloud computing—including elasticity, scalability, and ease of service delivery—with the access control, security, and resource customisation of [on-premises infrastructure](#).

2.3 HYBRID CLOUDS :

- hybrid cloud combines and unifies public cloud and private cloud services from multiple cloud vendors to create a single, flexible, cost-optimal it infrastructure.
- hybrid cloud is it infrastructure that connects at least one [public cloud](#) and at least one [private cloud](#), and provides orchestration, management and application portability between them to create a single, flexible, optimal cloud environment for running a company's computing workloads.
- hybrid cloud helps a company achieve its technical and business objectives more effectively and cost-efficiently than public cloud or private cloud alone.

2.4 MULTI CLOUD :

- multicloud - the use of cloud services from two or more vendors - gives organisations more flexibility to optimise performance, control costs, and leverage the best cloud technologies available.
- multicloud is the use of cloud services from more than one cloud vendor. it can be as simple as using software-as-a-service (saas) from different cloud vendors – e.g., salesforce and workday.
- but in the enterprise, multicloud typically refers to running enterprise applications on [platform-as-a-service \(paas\)](#) or [infrastructure-as-a-service \(iaas\)](#) from multiple cloud service providers, such as amazon web services (aws), google cloud platform, ibm cloud and microsoft azure

2.5 COMMUNITY CLOUD :

- community cloud is a cloud infrastructure that allows systems and services to be accessible by a group of several organizations to share the information. it is owned, managed, and operated by one or more organizations in the community, a third party, or a combination of them.
- the communities involved in these projects, such as tenders, business organizations, and research companies, focus on similar issues in their cloud interactions. their shared interests may include concepts and policies related to [security and compliance](#) considerations, and the goals of the project as well.
- community cloud computing facilitates its users to identify and analyze their business demands better. community cloud may be hosted in a data center, owned by one of the tenants, or by a third-party cloud services provider and can be either on-site or off-site.

2.6 CLOUD SERVICES :

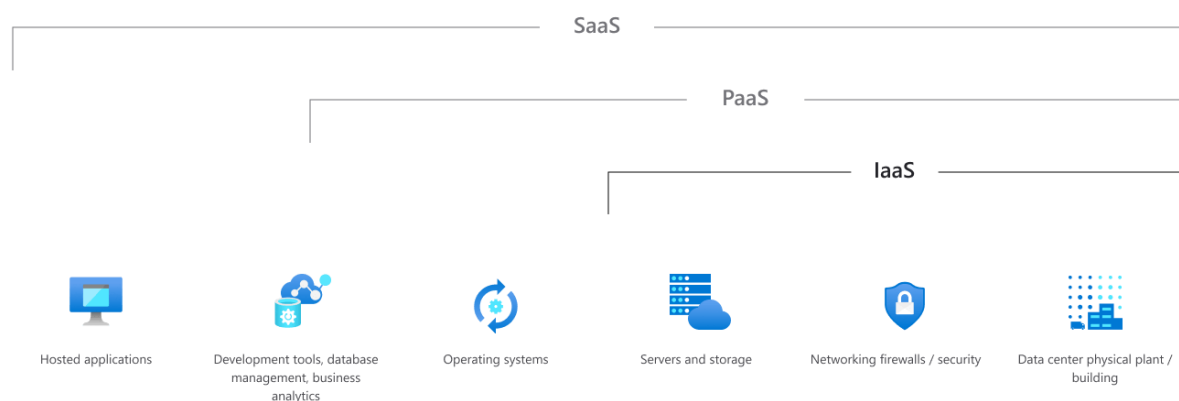
cloud services are infrastructure, platforms, or software that are hosted by third-party providers and made available to users through the internet. each facilitates the flow of user data from front-end clients through the internet, to the cloud service provider's systems, and back but vary by what's provided. there are 5 main types of as-a-service solutions:

INFRASTRUCTURE-AS-A-SERVICE (IAAS) :

Infrastructure as a service (IaaS) is a type of cloud computing service that offers essential compute, storage and networking resources on demand, on a pay-as-you-go basis. IaaS is one of the four types of cloud services, along with software as a service ([SaaS](#)), platform as a service ([PaaS](#)) and [serverless](#).

Migrating your organisation's infrastructure to an IaaS solution helps you reduce maintenance of on-premises data centres, save money on hardware costs and gain real-time business insights. IaaS solutions give you the flexibility to scale your IT resources up and down with demand. They also help you quickly provision new applications and increase the reliability of your underlying infrastructure.

IaaS lets you bypass the cost and complexity of buying and managing physical servers and datacentre infrastructure. Each resource is offered as a separate service component and you only pay for a particular resource for as long as you need it. A [cloud computing service provider](#) like [Azure](#) manages the infrastructure, while you purchase, install, configure and manage your own software—including operating systems, middleware and applications.



Common IaaS business scenarios

Lift-and-shift migration

This is the fastest and least expensive method of migrating an application or workload to the cloud. Without refactoring your underlying architecture, you can increase the scale and performance, enhance the security and reduce the costs of running an application or workload.

Test and development

Your team can quickly set up and dismantle test and development environments, bringing new applications to market faster. IaaS makes it quick and economical to scale dev/test environments up and down.

Storage, backup, and recovery

Your organisation avoids the capital outlay for storage and the complexity of storage management, which typically requires a skilled staff to manage data and meet legal and compliance requirements. IaaS is useful for handling unpredictable demand and steadily growing storage needs. It also can simplify planning and management of backup and recovery systems.

- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS)
- Software as a Service (SaaS)
- database-as-a-service (dbaas)
- Business-process-as-a-service (bpaas)

Web apps

IaaS provides all the infrastructure to support web apps, including storage, web and application servers and networking resources. Your organisation can quickly deploy web apps on IaaS and easily scale infrastructure up and down when demand for the apps is unpredictable.

High-performance computing

High-performance computing on supercomputers, computer grids or computer clusters helps solve complex problems involving millions of variables or calculations. Examples include protein folding and earthquake simulations, climate and weather predictions, financial modelling and product design evaluations.

Advantages of IaaS

Reduces capital expenditures and optimises costs

IaaS eliminates the cost of configuring and managing a physical datacentre, which makes it a cost-effective choice for migrating to the cloud. The pay-as-you-go subscription models used by IaaS providers help you reduce hardware costs and maintenance and enable your IT team to focus on core business.

Increases scale and performance of IT workloads

IaaS lets you scale globally and accommodate spikes in resource demand. That way, you can deliver IT resources to employees from anywhere in the world faster and enhance application performance.

Increases stability, reliability and supportability

With IaaS, there is no need to maintain and upgrade software and hardware or troubleshoot equipment problems. With the appropriate agreement in place, the service provider assures that your infrastructure is reliable and meets service-level agreements (SLAs).

Improves business continuity and disaster recovery

Achieving high availability, business continuity and disaster recovery is expensive because it requires a significant amount of technology and staff. But with the right SLA in place, IaaS helps to reduce this cost. It also helps you access applications and data as usual during a disaster or outage.

Enhances security

With the appropriate service agreement, a cloud service provider can offer better security for your applications and data than the security you would attain in house.

Platform-as-a-service (paas):

Platform as a service (PaaS) is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications. You purchase the resources you need from a [cloud service provider](#) on a pay-as-you-go basis and access them over a secure Internet connection.

Like [IaaS](#), PaaS includes infrastructure—servers, storage and networking—but also middleware, development tools, business intelligence (BI) services, database management systems and more. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing and updating.

PaaS allows you to avoid the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware,

container orchestrators such as [Kubernetes](#) or the development tools and other resources. You manage the applications and services you develop and the cloud service provider typically manages everything else.

Common PaaS scenarios

Organisations typically use PaaS for these scenarios:

Development framework. PaaS provides a framework that developers can build upon to develop or customise cloud-based applications. Similar to the way you create an Excel macro, PaaS lets developers create applications using built-in software components. Cloud features such as scalability, high-availability and multi-tenant capability are included, reducing the amount of coding that developers must do.

Analytics or business intelligence. Tools provided as a service with PaaS allow organisations to analyse and mine their data, finding insights and patterns and predicting outcomes to improve forecasting, product design decisions, investment returns and other business decisions.

Additional services. PaaS providers may offer other services that enhance applications, such as workflow, directory, security and scheduling.

Advantages of PaaS

By delivering infrastructure as a service, PaaS offers the same advantages as IaaS. But its additional features—middleware, development tools and other business tools—give you more advantages:

Cut coding time. PaaS development tools can cut the time it takes to code new apps with pre-coded application components built into the platform, such as workflow, directory services, security features, search and so on.

Add development capabilities without adding staff. Platform as a Service components can give your development team new capabilities without your

needing to add staff having the required skills.

Develop for multiple platforms—including mobile—more easily. Some service providers give you development options for multiple platforms, such as computers, mobile devices and browsers making cross-platform apps quicker and easier to develop.

Use sophisticated tools affordably. A pay-as-you-go model makes it possible for individuals or organisations to use sophisticated development software and business intelligence and analytics tools that they could not afford to purchase outright.

Support geographically distributed development teams. Because the development environment is accessed over the Internet, development teams can work together on projects even when team members are in remote locations.

Efficiently manage the application lifecycle. PaaS provides all of the capabilities that you need to support the complete web application lifecycle: building, testing, deploying, managing and updating within the same integrated environment.

Software-as-a-service :

Software as a service (SaaS) allows users to connect to and use cloud-based apps over the Internet. Common examples are email, calendaring and office tools (such as Microsoft Office 365).

SaaS provides a complete software solution which you purchase on a pay-as-you-go basis from a [cloud service provider](#). You rent the use of an app for your organisation and your users connect to it over the Internet, usually with a web browser. All of the underlying infrastructure, middleware, app software and app data are located in the service provider's data center. The service provider manages the hardware and software and with the appropriate service agreement, will ensure the availability and the security of the app and your data as well. SaaS allows your organisation to get quickly up and running with an app at minimal upfront cost.

Common SaaS scenarios

If you have used a web-based email service such as Outlook, Hotmail or Yahoo! Mail, then you have already used a form of SaaS. With these services, you log into your account over the Internet, often from a web browser. The email software is located on the service provider's network and your messages are stored there as well. You can access your email and stored messages from a web browser on any computer or Internet-connected device.

The previous examples are free services for personal use. For organisational use, you can rent productivity apps, such as email, collaboration and calendaring; and sophisticated business applications such as customer relationship management (CRM), enterprise resource planning (ERP) and document management. You pay for the use of these apps by subscription or according to the level of use.

Advantages of SaaS

Gain access to sophisticated applications. To provide SaaS apps to users, you don't need to purchase, install, update or maintain any hardware, middleware or software. SaaS makes even sophisticated enterprise applications, such as ERP and CRM, affordable for organisations that lack the resources to buy, deploy and manage the required infrastructure and software themselves.

Pay only for what you use. You also save money because the SaaS service automatically scales up and down according to the level of usage.

Use free client software. Users can run most SaaS apps directly from their web browser without needing to download and install any software, although some apps require plugins. This means that you don't need to purchase and install special software for your users.

Mobilise your workforce easily. SaaS makes it easy to "mobilise" your workforce because users can access SaaS apps and data from any Internet-connected computer or mobile device. You don't need to worry about developing apps to run on different types of computers and devices because the service provider has

already done so. In addition, you don't need to bring special expertise onboard to manage the security issues inherent in mobile computing. A carefully chosen service provider will ensure the security of your data, regardless of the type of device consuming it.

Access app data from anywhere. With data stored in the cloud, users can access their information from any Internet-connected computer or mobile device. And when app data is stored in the cloud, no data is lost if a user's computer or device fails.

Database-as-service (dbaas):

DBaaS (also known as managed database service) is a cloud computing service that lets users access and use a cloud database system without purchasing and setting up their own hardware, installing their own database software, or managing the database themselves (not to mention hiring the high-priced talent required to do so). The cloud provider takes care of everything from periodic upgrades to backups to ensuring that the database system remains available and secure 24/7.

The market for DBaaS and cloud databases is among the fastest-growing Software-as-a-Service (SaaS) markets, expected to grow to USD 320 billion by 2025 (link resides outside IBM). Database and data warehouse vendors have joined established cloud providers in offering hosted versions of their software, enabling customers to leverage the many benefits of cloud computing for their applications' data storage, search, and access needs.

Benefits

Compared to deploying a database management system on-premises, DBaaS offers your organization significant financial, operational, and strategic benefits:

- **Cost savings:** Laying down infrastructure for database management is expensive; scaling it as needed is costly and often wasteful. With DBaaS, your organization pays a predictable periodic charge based on the resources you consume—there's no need to purchase additional capacity to have on hand for hypothetical future needs.

- Scalability—up and down: You can quickly and easily provision additional storage and computing capacity at run time if you need it, and you can scale down your database cluster during non-peak usage times to save cost.
- Simpler, less costly management: To manage and maintain a database on-premises, you'd need an in-house administrative team. With DBaaS, the cloud provider manages everything (although you can choose to manage certain aspects yourself if you wish). DBaaS lightens the administrative burden on your existing IT staff and frees them to work on applications and innovation.
- Rapid development and faster time-to-market: With an on-premises database system, development teams typically need to request access through IT, a process that can take days or weeks. In contrast, with DBaaS, developers can help themselves to database capabilities and spin up and configure a database that's ready to integrate with their application in minutes.
- Data and application security: Cloud database providers typically offer enterprise grade security, including features like default encryption of data at rest and in-transit and integrated identity and access management controls. Some also meet specific regulatory compliance standards.
- Reduced risk: DBaaS offerings from major cloud providers typically include a service-level agreement (SLA) guaranteeing a certain amount of uptime. In the unlikely event that your provider doesn't meet the requirements stipulated in the SLA, you'll be compensated for any excess downtime you experience.
- Software quality: The major cloud providers offer a wide variety of highly configurable DBaaS options—each preselected for quality, so you won't have to worry about the wading through hundreds of different databases.

Business-process-as-a-service:

Business process as a service, or BPaaS, is a type of business process outsourcing (BPO) delivered based on a cloud services model. BPaaS is connected to other services, including SaaS, PaaS and IaaS, and is fully configurable.

BPaaS provides companies with the people, processes and technology they need to operate as a pay-per-use service by making use of the availability and efficiency of a cloud-based system. This approach to operations greatly reduces total cost of ownership by providing an on-demand solution based on services needed as opposed to purchasing a package deal tied into a single application.

BPaaS keeps companies in lockstep with industry best practices and technology advancements. Companies can also easily increase service levels during peak periods and bring new products and services to market faster with BPaaS's unique operating flexibility and agility.

Benefits of bpaas :

BPaaS offers many business benefits, including:

- **Product/service deliverability:** From managing inventory to organizing email and customer records, BPaaS helps companies facilitate the delivery of products and services in an automated, streamlined way with help of cloud technologies. BPaaS is standardized for use across industries and organizations, so it's flexible and repeatable, resulting in higher efficiency and, ultimately, better service and experience for customers.
- **Cutting edge at reduced cost:** BPaaS provides a business with the latest digital tools, technologies, processes and talent to improve its efficiency, service and the customer experience, without the large capital investment traditionally required. By implementing BPaaS, companies can shift to a pay-per-use consumption model and reduce total cost of ownership.

- Accommodates fluctuating business needs: BPaaS can scale on-demand when a company experiences a peak workload. Due to its innate configurability applicable across multiple business areas, and its interaction with other foundational cloud services like SaaS, the service can make use of its cloud foundation to scale to accommodate large fluctuations in business process needs

3. EXPERIMENTAL OR MATERIALS AND METHODS, ALGORITHM USED

On-site	IaaS	PaaS	SaaS
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

■ You manage
■ Service provider manages

4.RESULTS AND DISCUSSION,PERFORMANCE ANALYSIS

SN	Platform Description
1	Salesforce.com This is a Force.com development platform. This provides a simple user interface and lets users log in, build an app, and push it in the cloud.
2	Appistry The App is try's Cloud IQ platform is efficient in delivering a runtime application. This platform is very useful to create scalable and service oriented applications.
3	App Scale The App Scale is an open-source platform for App Engine of Google applications.
4	AT&T The AT&T allows access to virtual servers and manages the virtualization infrastructure. This virtualization infrastructure includes network, server and storage.
5	Engine Yard The Engine Yard is a rails application on cloud computing platform.
6	Enomaly Enomaly provides the infrastructure-as-a-Service platform.
7	Flexi Scale The Flexi Scale offers a cloud computing platform that allows flexible, scalable and automated cloud infrastructure.
8	GCloud3 The GCloud3 offers private cloud solution in its platform.
9	GizmoX The GizmoX Visual Web GUI platform is best suited for developing new web apps and modernize the legacy apps based on ASP.net, DHTML, etc.

10	Go Grid The Go Grid platform allows the users to deploy web and database cloud services.
11	Google The Google's App Engine lets the users build, run and maintain their applications on Google infrastructure.
12	Long Jump The Long Jump offers a business application platform, a Platform-as-a-Service (PaaS).
13	Microsoft The Microsoft Windows Azure is a cloud computing platform offering an environment to create cloud apps and services.
14	Orange Scape Orange Scape offers a Platform-as-a-Service (Paas) for non-programmers. Building an app is as easy as spreadsheet.
15	Rack Space The Rack Space provides servers-on-demand via a cloud-driven platform of virtualized servers.
16	Amazon EC2 The Amazon EC2 (Elastic Compute Cloud) lets the users configure and control computing resources while running them on Amazon environment.

5.SUMMARY AND CONCLUSIONS:

- Thus we have inferred so many things about the cloud computing technology while working throughout this project
- Thus we have discussed about cloud computing and its various types and models.
- The adjacent image shows the different types of cloud service models and who can access the model.
- And i'm also planning in doing a project on making a prototype on different cloud service models.

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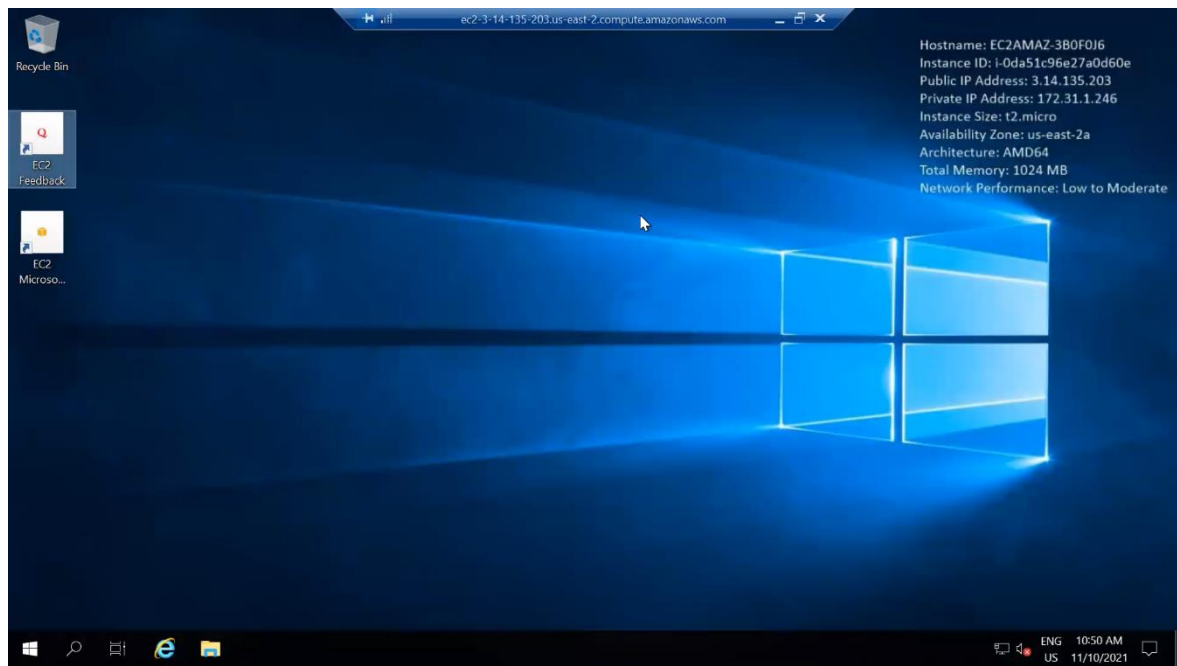
APPENDIX

A.SCREENSHOTS

The first screenshot displays the AWS Management Console's EC2 Instances page. It shows a list of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. The 'createwindow' instance is highlighted as 'Running' with a 't2.micro' type and '2/2 checks passed' status. Below the list, a modal window titled 'Instances: i-0997714c43635394e (wordcre), i-0da51c96e27a0d60e (createwindow)' is open, showing a 'Launch instances' button. The second screenshot shows a WordPress dashboard for a user named 'wordcre'. The dashboard includes a 'Welcome to WordPress!' message, a 'Get Started' section with a 'Customize Your Site' button, and a 'Jetpack' section with a 'Simplify your site security and performance with Jetpack' message. The dashboard also features a sidebar with links to Home, Updates, Jetpack, Posts, Media, Pages, Comments, Appearance, Plugins, Users, Tools, and Settings.

The first screenshot shows the AWS Management Console interface. The top navigation bar includes the AWS logo, a search bar, and user information. The left sidebar contains navigation options like 'New EC2 Experience', 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', and 'Dedicated Hosts'. The main content area displays a table of EC2 instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. The instances listed are 'createwindow' (Running, t2.micro), 'wpdynamic' (Stopped, t2.micro), and 'wp30sep' (Stopped, t2.micro). Below the table, there is a modal window titled 'Instances: i-0997714c43635394e (wordcre), i-0da51c96e27a0d60e (createwindow)' with a 'Launch instances' button.

The second screenshot shows a WordPress dashboard. The top navigation bar includes the WordPress logo, a search bar, and user information. The left sidebar contains navigation options like 'Home', 'Updates', 'Jetpack', 'Posts', 'Media', 'Pages', 'Comments', 'Appearance', 'Plugins', 'Users', 'Tools', and 'Settings'. The main content area displays a 'Welcome to WordPress!' message, a 'Get Started' section with a 'Customize Your Site' button, and a 'Jetpack' section with a 'Simplify your site security and performance with Jetpack' message. The dashboard also features a sidebar with links to Home, Updates, Jetpack, Posts, Media, Pages, Comments, Appearance, Plugins, Users, Tools, and Settings.



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