



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution



Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A++’ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

19EET304/ IOT for Electrical Sciences

III YEAR VI SEM

UNIT 3 COMMUNICATION INTERFACE

TOPIC 5 –CLOUD COMPUTING

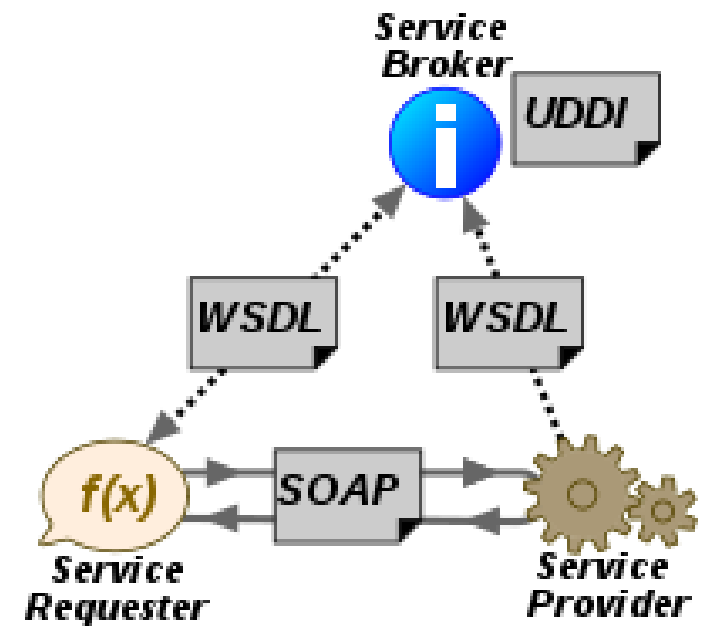




WHAT IS A WEB SERVICE?



A Web service is a web application that can communicate with other web-based applications over a network. Web services implementation allows two web applications developed in different languages to interact with each other using a standardized medium like XML, SOAP, HTTP etc.

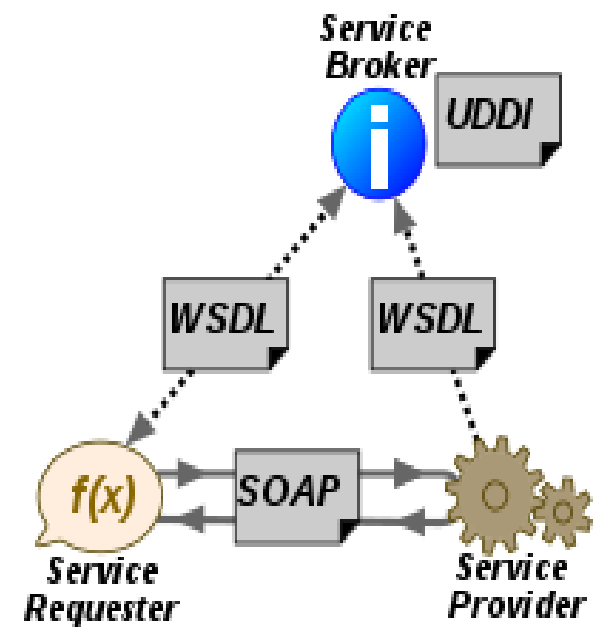




WHAT IS A WEB SERVICE?

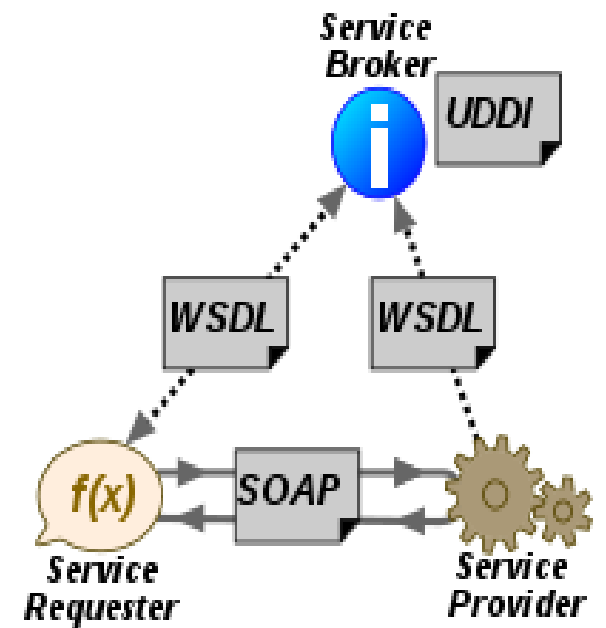
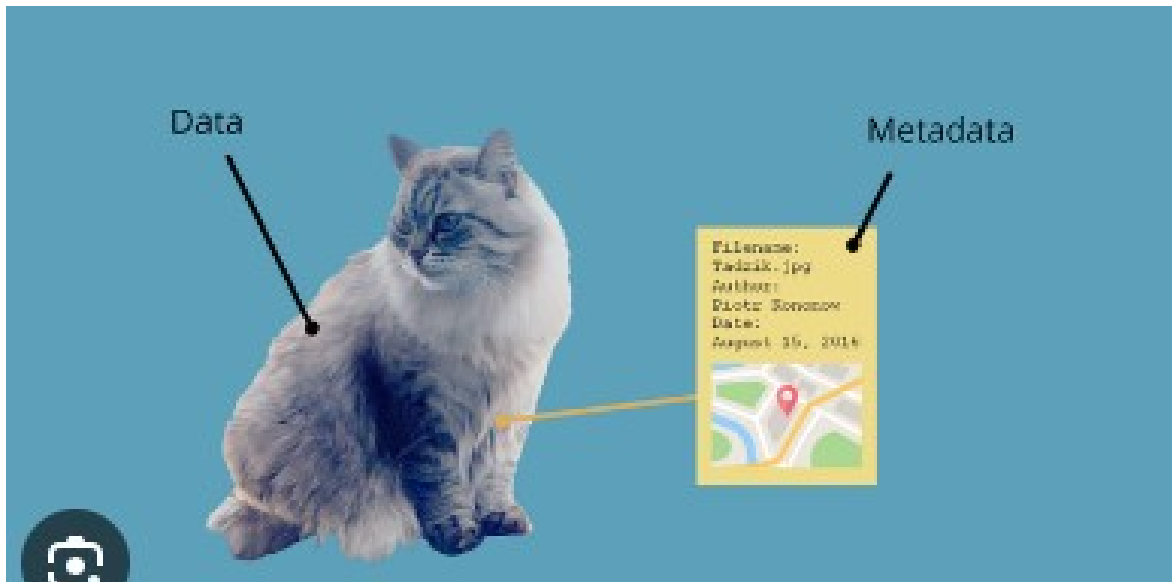


- The term "Web service" describes a standardized way of integrating **Web-based applications** using the XML, SOAP, WSDL and UDDI open standards over an **Internet Protocol** backbone.
- XML** is the **data format** used to contain the **data** and provide metadata around it,
- SOAP** is used to **transfer the data**,
- WSDL** is used for **describing the services available** and UDDI lists what **services** are available.
- Web Services Description Language
- Universal Description, Discovery, and Integration
- Simple Object Access Protocol
- Extensible Markup Language (XML) is a markup language that provides rules to define any data.





WHAT IS A WEB SERVICE?





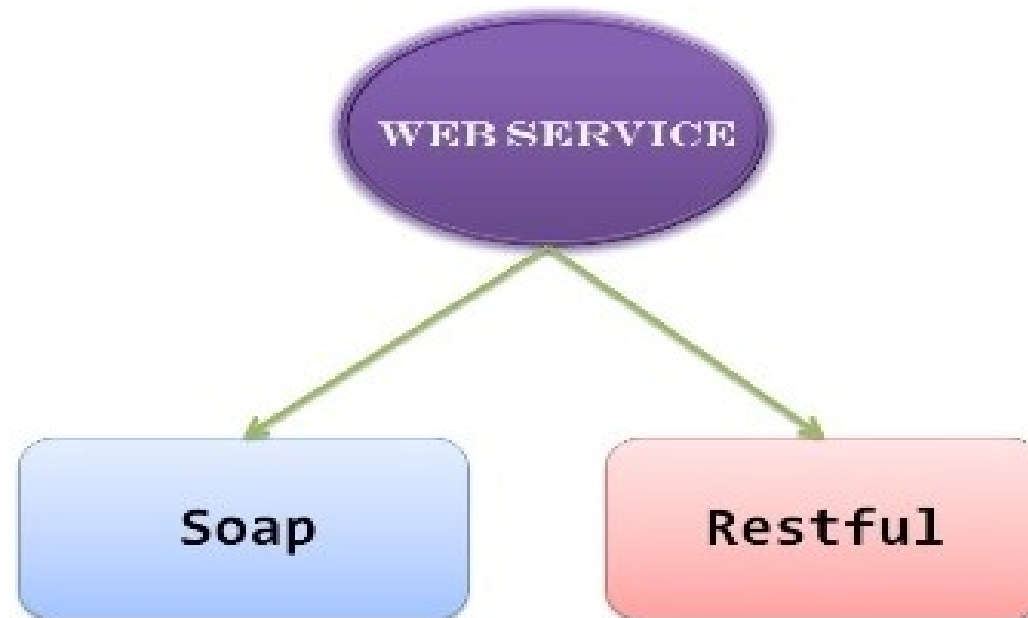
FEATURES OF WEB SERVICES

1. Web services are based on open standards like XML, HTTP. So these are operating system independent.
1. Web services are programming language independent. A Java application can consume a PHP web service.
2. Web services can be published over the internet to be consumed by other web applications.
3. The consumer or the client of the web-service is loosely coupled with the web service. So the web services can update or change its underlying logic without affecting the consumer.



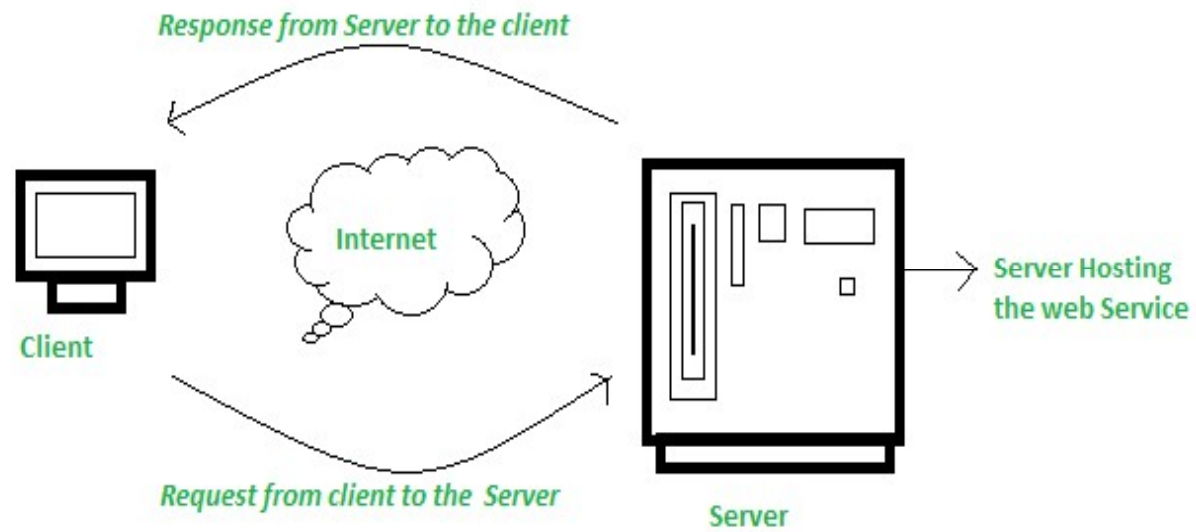


TYPES OF WEB SERVICES





HOW DOES WEB SERVICE WORK?





FEATURES/CHARACTERISTICS OF WEB SERVICE



1. XML BASED
2. Loosely Coupled
3. Capability to be Synchronous or Asynchronous
4. Coarse-Grained
5. Supports Remote Procedural Call
6. Supports Document Exchanges





ADVANTAGES OF WEB SERVICE

1. Business Functions can be exposed over the Internet
2. Interoperability
3. Communication with Low Cost
4. A Standard Protocol that Everyone Understands
5. Reusability

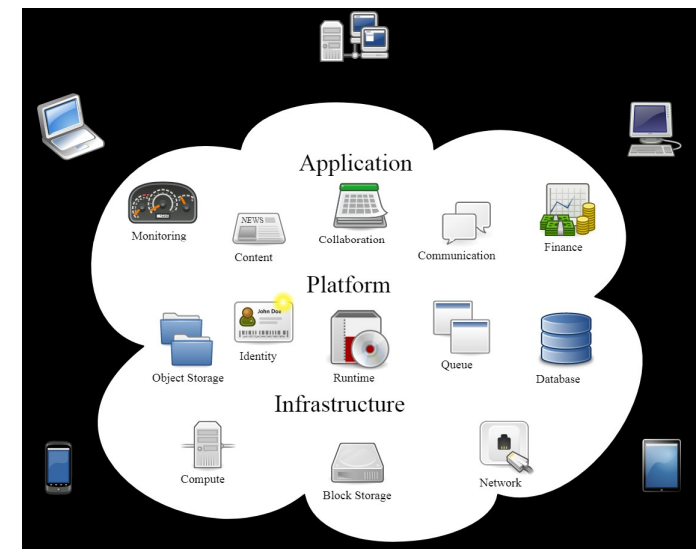




CLOUD COMPUTING

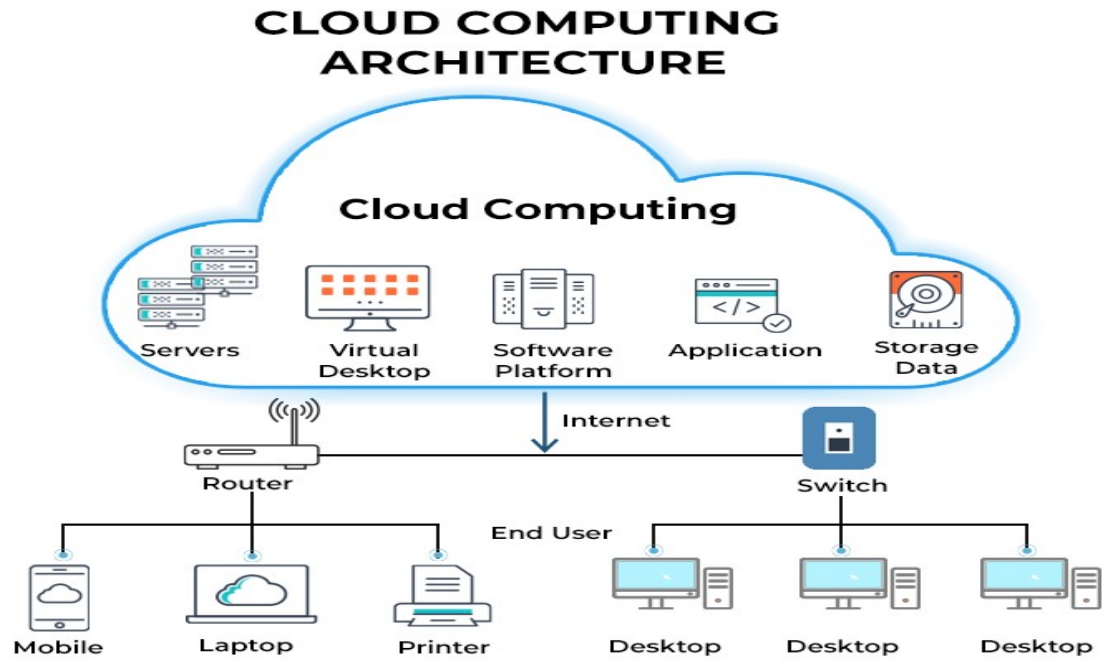


Cloud computing is on-demand access, via the internet, to computing resources—applications, servers (physical servers and virtual servers), data storage, development tools, networking capabilities, and more—hosted at a remote data center managed by a cloud services provider (or CSP). The CSP makes these resources available for a monthly subscription fee or bills them according to usage.





CLOUD COMPUTING ARCHITECTURE



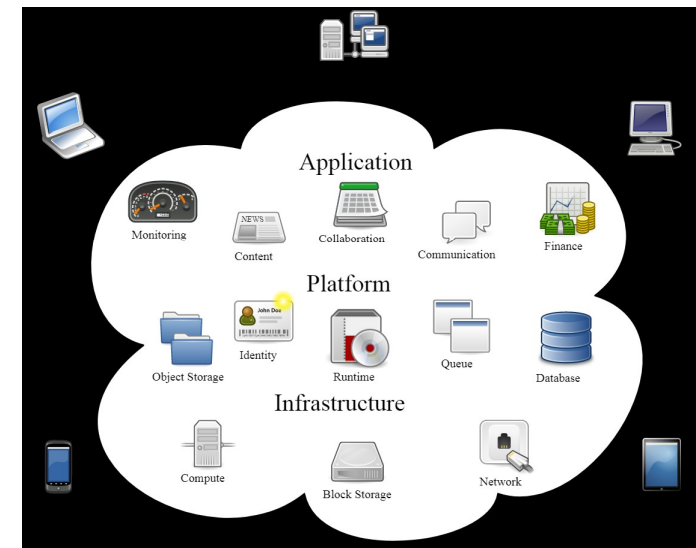


CLOUD COMPUTING



Instead of storing files on a storage device or hard drive, a user can save them on cloud, making it possible to access the files from anywhere, as long as they have access to the web. The services hosted on cloud can be broadly divided into infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS), and software-as-a-service (SaaS).

- Based on the deployment model, cloud can also be classified as public, private, and hybrid cloud.





CLOUD COMPUTING

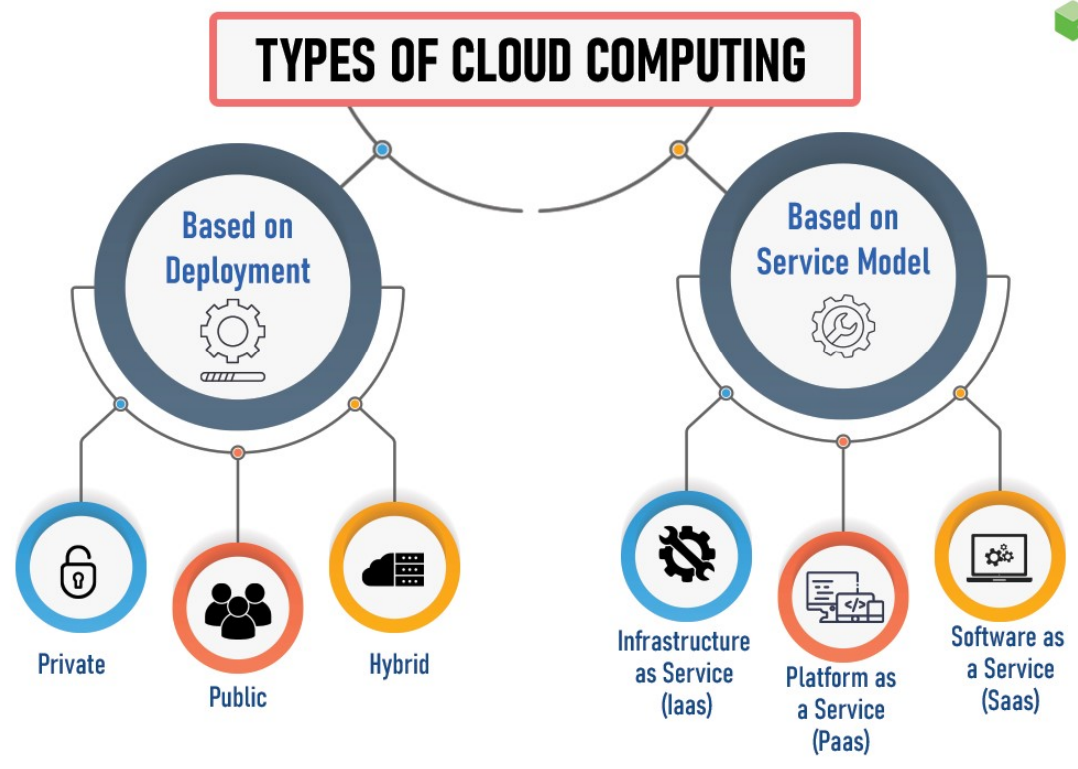
- cloud can be divided into two different layers, namely, front-end and back-end. The layer with which users interact is called the front-end layer.
- This layer enables a user to access the data that has been stored in cloud through cloud computing software.
- The layer made up of software and hardware, i.e., the computers, servers, central servers, and databases, is the back-end layer. This layer is the primary component of cloud and is entirely responsible for storing information securely.
- To ensure seamless connectivity between devices linked via cloud computing, the central servers use a software called middleware. Opens a new window that acts as a bridge between the database and applications.





Types of Cloud Computing

TOOLBOX





Private cloud

Private cloud

In a [private cloud](#), the computing services are offered over a private IT network for the dedicated use of a single organization

- Private cloud computing provides all the benefits of a public cloud, such as self-service, scalability, and elasticity, along with additional control, security, and customization.
- Private clouds provide a higher level of security through company firewalls and internal hosting to ensure that an organization's sensitive data is not accessible to third-party providers. The drawback of private cloud, however, is that the organization becomes responsible for all the management and maintenance of the data centers, which can prove to be quite resource-intensive..





Public cloud

- Public cloud refers to computing services offered by third-party providers over the internet. Unlike private cloud, the services on public cloud are available to anyone who wants to use or purchase them.
- Public clouds can help businesses save on purchasing, managing, and maintaining on-premises infrastructure since the cloud service provider is responsible for managing the system. They also offer scalable RAM and flexible bandwidth, making it easier for businesses to scale their storage needs.





Hybrid cloud

- Hybrid cloud uses a combination of public and private cloud features. The “best of both worlds” cloud model allows a shift of workloads between private and public clouds as the computing and cost requirements change.
- In a hybrid cloud model, companies only pay for the resources they use temporarily instead of purchasing and maintaining resources that may not be used for an extended period. In short, a hybrid cloud offers the benefits of a public cloud without its security risks.





ASSESSMENT - 1

EXPLAIN THE ROLES OF WEB SERVICES?





ASSESSMENT – 2

CAN YOU EXPLAIN THE APPLICATIONS OF CLOUD COMPUTING ?





References



- <https://www.geeksforgeeks.org/what-are-web-services/>
- <https://artoftesting.com/what-is-a-web-service>
- <https://www.ibm.com/topics/cloud-computing>

Thank You