Client-Server  
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Tell us about the features of client/server.

* The client server computing works with a system of request and response. The client sends a request to the server and the server responds with the desired information.
* The client and server should follow a common communication protocol so they can easily interact with each other. All the communication protocols are available at the application layer.
* A server can only accommodate a limited number of client requests at a time. So it uses a system based to priority to respond to the requests.
* Denial of Service attacks hinder server’s ability to respond to authentic client requests by inundating it with false requests.

What is a Web server in a client server environment?

The client-server model describes how a server provides resources and services to one or more [clients](https://techterms.com/definition/client). Examples of servers include [web servers](https://techterms.com/definition/web_server), [mail servers](https://techterms.com/definition/mail_server), and [file servers](https://techterms.com/definition/file_server). Each of these servers provide resources to client devices, such as [desktop computers](https://techterms.com/definition/desktop_computer), [laptops](https://techterms.com/definition/laptop), [tablets](https://techterms.com/definition/tablet), and [smartphones](https://techterms.com/definition/smartphone). Most servers have a one-to-many relationship with clients, meaning a single server can provide resources to multiple clients at one time.

What is the role of the presentation layer?

The **presentation layer** acts as a translator between the application and the network, mainly addressing the syntax representation of user information, ie, providing formatted representations and translation data services. Data compression, decompression, encryption, decryption are completed in this **layer**

They say this architecture is secure, how is it done in your opinion?

What is a Database Server in a client server environment?

**Database server**: A computer that is responsible for **database** storage, access, and processing in a **client**/**server environment**. Sometimes used to describe a two-tier **client**/**server environment**.

What are Super servers in client server environments?

A **super**-**server** starts other **servers** when needed, normally with access to them checked by a TCP wrapper. It uses very few resources when in idle state. This can be ideal for workstations used for local web development, **client**/**server** development or low-traffic daemons with occasional usage (such as ident and SSH).

Explain 2-Tier and 3-Tier architecture

Basically at high level we can say that **2**-**tier architecture** is **Client server** application and **3**-**tier architecture** is Web based application. ... The two-**tier architecture** is like **client server** application. The direct communication takes place between **client** and **server**. There is no intermediate between **client** and **server**.

What is a File server?

A file server is a **central server instance** in a computer network that enables connected clients to access the server’s storage capacities. The term encompasses both the **hardware** and **software** needed to implement such a server. As long as they have received the corresponding authorizations, accessing users can open, read, change, and delete files and folders on a file server as well as even upload their own files to the server

SOA & MicroServices  
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What are the main benefits of SOA?

**Service-oriented architecture** (**SOA**) enables increased business agility, improved business workflows, extensible architecture, enhanced reuse, and a longer life span of applications. Adopting **Service Oriented Architecture** realize many **benefits**.

How can you achieve loose coupling in SOA

The concept of [loose coupling](https://en.wikipedia.org/wiki/Loose_coupling) within [SOA](https://en.wikipedia.org/wiki/Service-oriented_architecture) is directly influenced by the object-oriented design paradigm,[[4]](https://en.wikipedia.org/wiki/Service_loose_coupling_principle#cite_note-Bernhard-4) whereby the objective is to reduce coupling between classes in order to foster an environment where both the classes, although somehow related to each other, can be changed in a manner that such a change does not break the existing relationship, which is necessary for the working of a software program.

Are web services and SOA the same?

There are some key differences between **Web services and SOA**. **Web services** define a **web** technology that can be used to build applications that can send /receive messages using SOPA over HTTP. However, **SOA** is an architectural model for implementing loosely coupled **service** based applications.

What is a reusable service?

Service reusability is typically measured by how much extra functionality a service contains that could be reused in future, and how much of the service’s functionality goes beyond the current requirements. This encourages services that contain extra capabilities built around possible future service usage scenarios

What are the disadvantages of SOA?

* Stand alone, non distributed applications that do not necessitate application or component integration; that would include, for instance, a word processing application that does not require request and response based calls. ...
* Short lived applications or applications that are in any way limited in scope.

What is ESB and where does it fit in?

The enterprise service bus is a relatively new addition to the [B2B integration](https://www.remedi.com/blog/from-chaos-to-efficiency-the-evolution-of-b2b-integration-suites) space; it has been around since the beginning of the 21st century. However, since its arrival on the scene, it has become a part of the landscape. However, not everyone is familiar with what an enterprise service bus is, how it developed, or its use in B2B integration.

In SOA do we need to build a system from scratch?

In **SOA do we need to build a system from scratch**? Answer: No, if **we need** to integrate any existing **system you** just **can** loosely couple wrappers which help in wrapping all customer services and expose all functionalities in a generic manner.

What is the most important skill needed to adopt SOA ?technical or cultural?

Surely cultural. SOA does require people to think of business and technology differently. Instead of thinking of technology first (e.g., If we implement this system, what kinds of things can we do with it?), practitioners must first think in terms of business functions, or services (e.g., My company does these business functions, so how can I set up my IT system to do those things for me most efficiently?).It is expected that adoption of SOA will change business IT departments, creating service-oriented (instead of technology-oriented) IT organizations.

List down the advantages of Microservices Architecture.

n **microservices architecture**, large software projects are broken **down** into smaller, more independent modules. ... This not only provides development teams with a more decentralized approach to building software, it also allows each service to be deployed, rebuilt, redeployed and managed independently

What are the best practices to design Microservices?

How does Microservice Architecture work?

Microservices - also known as the microservice architecture - is an architectural style that structures an application as a collection of services that are

* Highly maintainable and testable
* Loosely coupled
* Independently deployable
* Organized around business capabilities
* Owned by a small team

What are the pros and cons of Microservice Architecture?

Pros:

Microservices have become hugely popular in recent years. Mainly, because they come with a couple of benefits that are super useful in the era of containerization and cloud computing. You can develop and deploy each microservice on a different platform, using different programming languages and developer tools. Microservices use APIs and communication protocols to interact with each other, but they don’t rely on each other otherwise

Cons:

They heavily rely on messaging, they can face certain problems. Communication can be hard without using automation and advanced methodologies such as Agile. You need to introduce [DevOps tools](https://raygun.com/blog/best-devops-tools/) such as CI/CD servers, configuration management platforms, and [APM tools](https://raygun.com/platform/apm) to manage the network. This is great for companies who already use these methods. However, the adoption of these extra requirements can be a challenge for smaller companies

What is the difference between Monolithic, SOA and Microservices Architecture?

**SOA** is a modular means of breaking up **monolithic** applications into smaller components, while **microservices** provides a smaller, more fine-grained approach to accomplishing the same objective. ... However, the reality is that both **SOA and microservices** are applicable in **different** use cases for the same organization.

What are the challenges you face while working Microservice Architectures?

**Here are some of the top challenges that organizations face in their microservices journey:**

* Managing Microservices. As the number of microservices increases, managing them gets more challenging. ...
* Monitoring. ...
* Embracing DevOps Culture. ...
* Fault Tolerance. ...
* Testing. ...
* Cyclic Dependencies

What are the characteristics of Microservices?

1. Microservice architectural style is an approach to developing a single application as a suite of small services.
2. Services are built around business capabilities , independently deployable and packaged, each running in its own process.
3. Each Service should have separate database layer.
4. Each Service can have independent codebase, CI/CD tooling sets.
5. Each Service can be tested in isolation without dependent on other services.