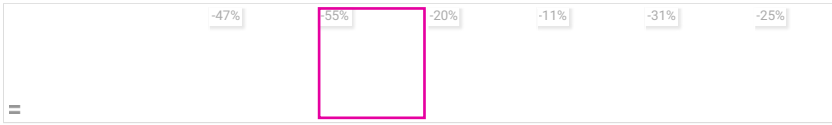


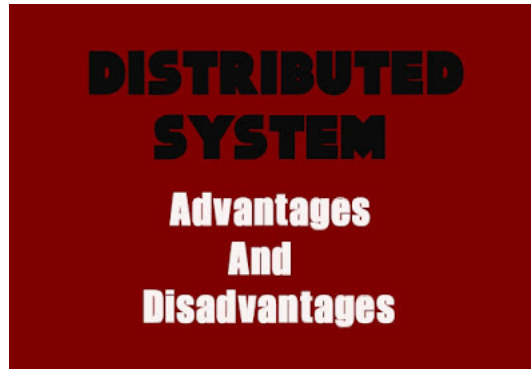
5 Advantages and Disadvantages of Distributed System | Limitations & Benefits of Distributed System

Mishal Roor March 03, 2021



What is Distributed System ?

Distributed system is an infrastructure where multiple computers are connected together creating an illusion of a single unit. It can be of personal computers, mainframe computers or workstations each with different configurations. Each computer is equipped with separate nodes that effectively communicates with each other. In this way, all the components of a software are shared effectively among users.



What are the types of Distributed System ?



Despite of being divided, all these computers work together to complete a single task. For this purpose, it can use either a [Local Area Network \(LAN\)](#) or a [Wide Area Network \(WAN\)](#). Based on the way of arrangement, there are two types of distributed systems. Those are the [Client Systems](#) and [Peer to Peer Systems](#). Although distributed system offers many benefits in terms of power and speed, it aren't flawless. If handled improperly they can too go wrong. To determine if this is the best system, the following pros and cons should help you.

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In this article, I will be examinina about **5 Advantaages and Disadvantaages of Distributed System** |

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Let's get started,

Advantages of Distributed System

1. Cost Effective

Although distributed systems consists of high implementation costs, they are cost effective in the long run. Compared to a mainframe computer, where a single system is composed of several processors, the distributed system is made up of several computers together. This type of infrastructure is far more cost effective than a mainframe system.

2. Efficiency

Distributed systems are made to be efficient in every aspect since they posses multiple computers. Each of these computers could work independently to solve problems. This not only considered to be efficient, it significantly saves time of the user.



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3. Scalability

Distributed systems are made on default to be scalable. Whenever there is an increase in workload, users can add more workstations. There is no need to upgrade a single system. Moreover, no any restrictions are placed on the number of machines. Which means that, these machines will be able to handle high demand workload easily.

4. Reliability

The distributed systems are far more reliable than single systems in terms of failures. Even in the case of a single node malfunctioning, it does not pose problems to the remaining servers. Other nodes can continue to function fine.

5. Latency

could notice much less time it takes to serve them.

Disadvantages of Mainframe Computer

1. Startup Cost

Compared to a single system, the implementation cost of a distributed system is significantly higher. The infrastructure used in a distributed system makes it expensive. In addition to that, constant transmission of information and processing overhead further increases the cost.

2. Security

Distributed systems always comes with security risks since it contains open system characteristics. The data of the user is stored in different workstations. Thus, the user needs to make sure that their data is secured in each of these computers. Moreover, unlike in a centralized computing system, it is not an easy task to manage data access in a distributed system.

3. Complexity

The difficulty involved in implementation, maintenance and troubleshooting makes distributed system a complex strategy. Besides hardware complexity, distributed system posses difficulty in software too. The software used in distributed system needs to be well attentive when handling communication and security.

4. Overheads

Overheading is a common problem faced by a distributed system. This happens when all the workstations try to operate at once. Even though this essentially brings desired results, eventually there will be an increase in computing time. This ultimately impacts the system's response time.

5. Network Errors

Distributed systems are prone to network errors which results in communication breakdown. The information may fail to be delivered or not in the correct sequence. And also, troubleshooting errors is a difficult task since the data is distributed across various nodes.

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