

TUTORIAL 1

1> Define the following terms

- (i) Distributed System
- (ii) Reliability
- (iii) Scalability

2> Explain with a real time example of distributed system.

3> explain different types of transparencies in distributed system.

1.>

(i) A distribution system is a collection of independent computers, interconnected via network to perform a certain task.

Distributed systems reduce the risks:

① Single point of failure

② Bolstering reliability

③ Fault tolerance

(ii) Reliability of System implies systems should continuously work even in case of minor failure of a node. [then only system is said to be reliable]

(iii) Scalability of system implies that addition of node to existing network is easy process, and + (without loss of performance)
Ability to handle increased workload by repetitively applying cost effective strategy for extending system capacity.

① Size — ↑ no. of users & resource

② Geographically ↑ " " " from different location.

③

2.2 (Scale)

Administratively - Easy to manage even if it spans to many independent organization.

2.3 Distribute computing → functionality which utilizes many different computers to complete its function.

Real Life Example : GOOGLE Search

Google web search - google uses servers (data centers to execute its processing across world)

- ① There are set of servers responsible for fetching pages from the internet and crawling through various pages and various links. [Page Rank Algorithm]
- ② There are set of servers which 'read' ~~from~~ the text on pages and try to categorize the content -
Build INDEX and create Summary & keywords.
(Search engine optimization)
- ③ There are set of servers which take your input (QUERY), work out what your question is about, search the indexed finding these pages which are a match.
- ④ There are set of servers which actually display the web pages and display the results in relevant ordering.

" Multi-server Architecture "

3.2 Transparency : Important Goal of Distributed System is to Hide the fact that its process and resources are physically distributed across multiple computers.

A distributed system that is capable of presenting itself to users and applications such that it is only a single computer system is called transparent.

Transparency	Description
(i) Access	Hide Data Representation
(ii) Location	Hide Location
(iii) Migration	move place information
(iv) Relocation	Hide moved place relocation
(v) Replication	Hide the resource is replication
(vi) Concurrency (multiple users)	Shared data bases access
(vii) Failure	Hide fact about resource failure

X