TUTORIAL 8

U19CS012

1.> Explain different information policies used in Distributed systems

1.> Information policy - To decide when, where and what information about the states of other nodes on the system should be collected.

1) Demand Driven
① Node collects the state of the other nodes only when it becomes either a sender or a receiver.
② Dynamic Policy
③ Can be sender-initiated, receiver-initiated or symmetrically initiated

2) Periodic
① Nodes exchange load information periodically.

3) State Change driven
① Nodes distribute state information whenever their state changes by a certain degree.
② Centralized Policy - nodes send the state information to a centralized collection points and decentralized policy -nodes send the information to peers.

2.> Why do we need Load Distribution?

2.> ① Distributed system offer a tremendous processing capacity.
② However, in order to realize this tremendous computing capacity, and take full advantage of it, good resource allocation schemes are needed.
③ A Distributed scheduler is resource management components of a distributed operating system that focuses on redistributing the load of the system among the computers such that overall performance of system is maximized.

④ Due to random arrival of tasks, and their random CPU service time requirements, there is good possibility that several computers are heavily loaded (hence suffering from ~~pro~~ performance degradation), while others are idle or lightly loaded.

⑤ Therefore, defining a proper characterization of a load at node is very important, as load distributing decisions are based on the load measured at one or more nodes.
⇒ Ensures that Load imposes minimal overhead.

3> Compare & Contrast sender-initiated algorithm & receiver initiated algorithm.

Sender Initiated	Receiver initiated algorithm.
① Load distributing activity is initiated by an Over-loaded node (sender) that attempts to send a task to an under-loaded node (receiver)	① Load distributing activity is initiated from an underloaded node (receiver) that is trying to obtain a task from an overloaded node (sender)
Transfer Policy ② A threshold policy based on CPU queue length used by algorithm. - A node is identified as a sender if a new task originating at the node makes the queue length exceed ⊤	② Threshhold policy based on CPU queue length. - Transfer policy is triggered when a task departs.
Information Policy ③ Demand Driven	③ Demand Driven because the policy activity starts only after a node becomes a receiver
Selection Policy ④ These sender-initiated algorithm's consider only newly arrived task will be transferred.	④ Any of the approaches in the selection policy.
Stability ⑤ All three approaches for location policy cause system instability a high system loads.	⑤ They do not cause instability - Very little wastage of CPU cycles at high system Loads.