

19CSE310 GRID AND CLOUD COMPUTING

UNIT I INTRODUCTION

Evolution of Distributed computing: Scalable computing over the Internet – Technologies for network based systems – clusters of cooperative computers - Grid computing Infrastructures – cloud computing - service oriented architecture – Introduction to Grid Architecture and standards – Elements of Grid – Overview of Grid Architecture.

Evolution of Distributed computing:

- **Distributed computing** is a field of computer science that studies distributed systems. A distributed system is models in which components located on networked computers communicate and coordinate their actions by passing messages
- The components interact with each other in order to achieve a common goal.
- Three significant characteristics of distributed systems are: concurrency of components, lack of a global clock, and independent failure of components.
- Examples of distributed systems vary from SOA-based systems to massively multiplayer online games to peer-to-peer applications.
- A computer program that runs in a distributed system is called a distributed program, and distributed programming is the process of writing such programs.
- There are many alternatives for the message passing mechanism, including pure HTTP, RPC-like connectors and message queues.

HISTORY

- The use of concurrent processes that communicate by message-passing has its roots in operating system architectures studied in the 1960s.
- The first widespread distributed systems were local area networks such as Ethernet, which was invented in the 1970s.
- ARPANET, the predecessor of the Internet, was introduced in the late 1960s, and ARPANET email was invented in the early 1970s. E-mail became the most successful application of ARPANET, and it is probably the earliest example of a large-scale distributed application.
- In addition to ARPANET, and its successor, the Internet, other early worldwide computer networks included Usenet and FidoNet from the 1980s, both of which were used to support distributed discussion systems.
- The study of distributed computing became its own branch of computer science in the late 1970s and early 1980s.
- The first conference in the field, Symposium on Principles of Distributed Computing (PODC), dates back to 1982, and its European counterpart International Symposium on Distributed Computing (DISC) was first held in 1985.