

1. What is the primary challenge associated with heterogeneity in distributed systems?
 - a) Ensuring fault tolerance
 - b) Facilitating concurrent access to resources
 - c) Enabling interoperability across different components
 - d) Securing the system against unauthorized access

2. Which form of transparency in distributed systems allows access to local or remote resources without distinction?
 - a) Access transparency
 - b) Location transparency
 - c) Failure transparency
 - d) Replication transparency

3. What does "migration transparency" in distributed systems refer to?
 - a) Seamless movement of resources and clients within the system
 - b) Ensuring access to replicated resources as if there was just one
 - c) Concealing the separation/distribution of components from users
 - d) Hiding access to local or remote resources

4. Which mechanism in fault tolerance is responsible for detecting faults in a distributed system?
 - a) Fault masking
 - b) Fault detection
 - c) Fault toleration
 - d) Fault recovery

5. What is the primary concern addressed by scalability in distributed systems?
 - a) Ensuring access to resources without distinction
 - b) Providing concurrent access to shared resources
 - c) Facilitating seamless movement of resources and clients

d) Ensuring system efficiency with increasing numbers of users and resources

6. Which challenge of distributed systems involves providing and managing concurrent access to shared resources?

a) Fault tolerance

b) Scalability

c) Concurrency

d) Openness and Interoperability

7. What does an "open system" in the context of distributed systems entail?

a) Implementing closed specifications for interfaces and services

b) Limiting access to resources for authorized users only

c) Facilitating portability and interoperability across different systems

d) Concealing the separation/distribution of components from users

8. Which transparency in distributed systems involves hiding the distribution of components to perceive the system as a whole?

a) Concurrency transparency

b) Migration transparency

c) Distribution transparency

d) Performance transparency

9. What is the purpose of "access transparency" in distributed systems?

a) Ensure access without knowledge of location

b) Allow movement of resources and clients within the system

c) Hide the separation/distribution of components from users

d) Provide identical access to local or remote resources

10. Which mechanism is responsible for ensuring that a system remains effective despite faults?

- a) Fault detection
- b) Fault masking
- c) Fault toleration
- d) Fault recovery

11. What term describes the characteristic of distributed systems where failure of a component should not result in failure of the whole system?

- a) Fault masking
- b) Fault tolerance
- c) Scalability
- d) Concurrency

12. Which form of transparency in distributed systems allows access to replicated resources as if there was just one?

- a) Failure transparency
- b) Replication transparency
- c) Concurrency transparency
- d) Location transparency

13. What mechanism is responsible for providing fair scheduling and avoiding deadlocks in distributed systems?

- a) Fault detection
- b) Fault recovery
- c) Concurrency management
- d) Openness and interoperability

14. In the context of fault tolerance, what is the purpose of fault recovery mechanisms?

- a) To detect faults in the system
- b) To mask faults to prevent system failure
- c) To tolerate faults and continue operation

d) To recover from faults and restore system functionality

15. What aspect of scalability in distributed systems addresses the concern of preventing software resources from running out?

- a) Cost of physical resources
- b) Performance loss
- c) Avoiding performance bottlenecks
- d) Y2K-like problems

16. Which transparency in distributed systems involves allowing the system to be reconfigured to improve performance as loads vary?

- a) Performance transparency
- b) Scaling transparency
- c) Fault tolerance transparency
- d) Openness and interoperability

17. What term describes the characteristic of distributed systems where shared access to resources must be possible?

- a) Heterogeneity
- b) Concurrency
- c) Openness
- d) Fault tolerance

18. Which challenge of distributed systems involves ensuring interfaces are publicly available to ease inclusion of new components?

- a) Heterogeneity
- b) Concurrency
- c) Openness
- d) Security

19. In distributed systems, what does "access transparency" primarily focus on?

- a) Facilitating portability and interoperability
- b) Concealing the distribution of components from users
- c) Providing identical access to local or remote resources
- d) Ensuring fault tolerance in case of system failures

20. What mechanism in fault tolerance is responsible for handling exceptions and timeouts in a distributed system?

- a) Fault detection
- b) Fault masking
- c) Fault toleration
- d) Fault recovery

21. Which form of transparency in distributed systems involves allowing access to resources without knowledge of their location?

- a) Location transparency
- b) Access transparency
- c) Replication transparency
- d) Failure transparency

22. What challenge of distributed systems involves designing systems that work efficiently at varying scales?

- a) Heterogeneity
- b) Scalability
- c) Concurrency
- d) Fault tolerance

23. In the context of fault tolerance, what is the purpose of fault detection mechanisms?

- a) To recover from faults and restore system functionality
- b) To detect faults in the system

- c) To tolerate faults and continue operation
- d) To mask faults to prevent system failure

24. What aspect of scalability in distributed systems addresses the concern of preventing performance bottlenecks?

- a) Cost of physical resources
- b) Performance loss
- c) Avoiding software resource depletion
- d) Y2K-like problems

25. Which transparency in distributed systems involves hiding the separation/distribution of components to users?

- a) Distribution transparency
- b) Access transparency
- c) Migration transparency
- d) Concurrency transparency

26. What mechanism in fault tolerance is responsible for ensuring access to replicated resources as if there was just one?

- a) Fault detection
- b) Fault masking
- c) Fault toleration
- d) Fault recovery

27. In the context of distributed systems, what term describes the characteristic where the system should only be used in the way intended?

- a) Openness
- b) Scalability
- c) Security
- d) Concurrency

28. Which challenge of distributed systems involves ensuring seamless movement of resources and clients within the system?

- a) Scalability
- b) Fault tolerance
- c) Heterogeneity
- d) Migration transparency

29. What aspect of scalability in distributed systems addresses the concern of increasing system efficiency with additional resources?

- a) Performance loss
- b) Avoiding software resource depletion
- c) Preventing performance bottlenecks
- d) Cost of physical resources

30. Which transparency in distributed systems involves allowing the system to be reconfigured to improve performance as loads vary?

- a) Scaling transparency
- b) Performance transparency
- c) Access transparency
- d) Location transparency