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Class: ICT.01-K61

Class Exercies

Module: Distributed System

Chapter 1: Overview of distributed system

Question 1: What is the role of middleware in a distributed system?

The role of middleware of a distributed system is to improve the distribution transparency that network OS is lack of.

Question 2: Explain what is meant by (Distribution) transparency, and give examples of the different types of transparency?

The meaning of distribution transparency is the distribution aspects of a system are hidden from its users and application

Types of distribution transparency:

Access transparency

Location transparency

Migration transparency

Relocation transparency

Replication transparency

Concurrecy transparency

Failure transparency

Persistence transparency

Question 3: Why is it sometimes so hard to hide the occurrence and recovery from failures in a distributed system?

It is hard to hide the occurance and recovery from failures in a distributed system because the consequences from the failures is easily noticeabe (Example: slow connection/ cant connect to the server)

Question 4: Why it is not always a good idea to aim at implementing the highest degree of transparency posible?

Because there is a trade off between degree of transparency and system performance. The higher the transparency degree, the more considerable loss of performance.

Question 5: What is an open distributed system and what benefits does openess provide?

An open distributed system is a system that offers service according to standard rules that describe syntax and semantic of those service.

The benefits of openess:

Easier interporating with other open system

Applications are ported easier between the different version of a same system

Question 6: Describe precisely what is meant by a scalable system

A scalable system is a system that scalable in size ( add more users/ resources), geographical size( user/ resource may lie far apart) or administraitve size (system span many independent administrative organization) without suffer an unacceptable loss of performance.

Question 7: Scalability can be achieved by applying different techniques. What are these techniques?

The techniques that can be applied to achive scability is

Distribution

Replication

Caching

Asynchronous communication

Correction

Q1

Combine the adv the transparency of distributed os and hetereorygy of network os

Gibe the app layer the transparency, it is a hetereogous system

Q3

Hard cuz concern the trans of fault tolerance, to prove list all the task we need to do to recover from failure, eg: vid stream server suddenly crashed

Q4

Trade of between trans and sys perf

Q5

Open dis sys: openess characteristic of dis sys

Q7

Technique: replication: set up diff replica server to replicate content

Caching: setup caching server to scale the system up