Nico Kangdra - 00120210024

OS Assignment

1. What is RPC?

Remote Procedure Calls (RPC) is a protocol that provides a communication mechanism between processes that allows a program to run on a computer without code execution, and the code execution is done in the server.

2. What does RPC do?

RPC is used to call other processes on the remote systems like a local system. A procedure call is also sometimes known as a function call or a subroutine call.

3. How does RPC work?

- Client request for calling and will be pack in Client Stub
- After packed, Client RPC will send to Server RPC
- Then will be unpack in Server Stub
- Server process the request call
- Then return value and pack in Server Stub
- Send from Server RPC to Client RPC
- Then unpack in Client Stub
- The Client receive the value from the call

4. What is advantages and disadvantages of RPC?

Advantages :

- RPC method helps clients to communicate with servers by the conventional use of procedure calls in high-level languages.
- RPC method is modeled on the local procedure call, but the called procedure is most likely to be executed in a different process and usually a different computer.
- RPC supports process and thread-oriented models.
- RPC makes the internal message passing mechanism hidden from the user.
- The effort needs to re-write and re-develop the code is minimum.
- Remote procedure calls can be used for the purpose of distributed and the local environment.
- It commits many of the protocol layers to improve performance.
- RPC provides abstraction. For example, the message-passing nature of network communication remains hidden from the user.
- RPC allows the usage of the applications in a distributed environment that is not only in the local environment.

- With RPC code, re-writing and re-developing effort is minimized.
- Process-oriented and thread-oriented models support by RPC.

Disadvantages :

- Remote Procedure Call Passes Parameters by values only and pointer values, which is not allowed.
- Remote procedure calling (and return) time (i.e., overheads) can be significantly lower than that for a local procedure.
- This mechanism is highly vulnerable to failure as it involves a communication system, another machine, and another process.
- RPC concept can be implemented in different ways, which is can’t standard.
- Not offers any flexibility in RPC for hardware architecture as It is mostly interaction-based.
- The cost of the process is increased because of a remote procedure call