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Muhammad Iftikhar
P180054 - Section A

Remote Procedure call

RPC is a protocol that one program can use to request a service form a program located in another computer on a network without having to understand the network detail

→ RPC uses the client server Model

→ Its Main Include five elements:

- The client
- The client stub (
- The RPC Routine (RPC communication Package)
- The server stub
- The server

The client

→ It is user process which initiate a RPC. The client make a perfectly normal call that Invokes a corresponding procedure in

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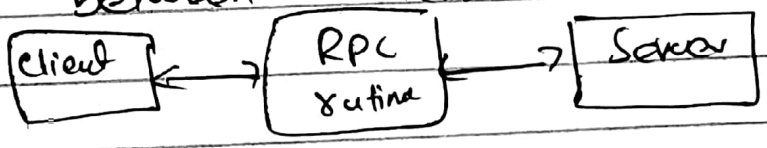
the client stub.

* **The client stub**
  - On receipt of a request a requirement into a message and asks to RPC Runtime to send
  - On receipt of a result it unpacks the Results and passes it to client.

* **RPC Runtime**
  - It handles transmission of message between client and server.



* **The Server stub**

  It unpacks a call request and make a perfectly normal call to Invoke the appropriate procedure in the server.

* **The Server**
  - It execute an appropriate procedure and return the results from a server stub

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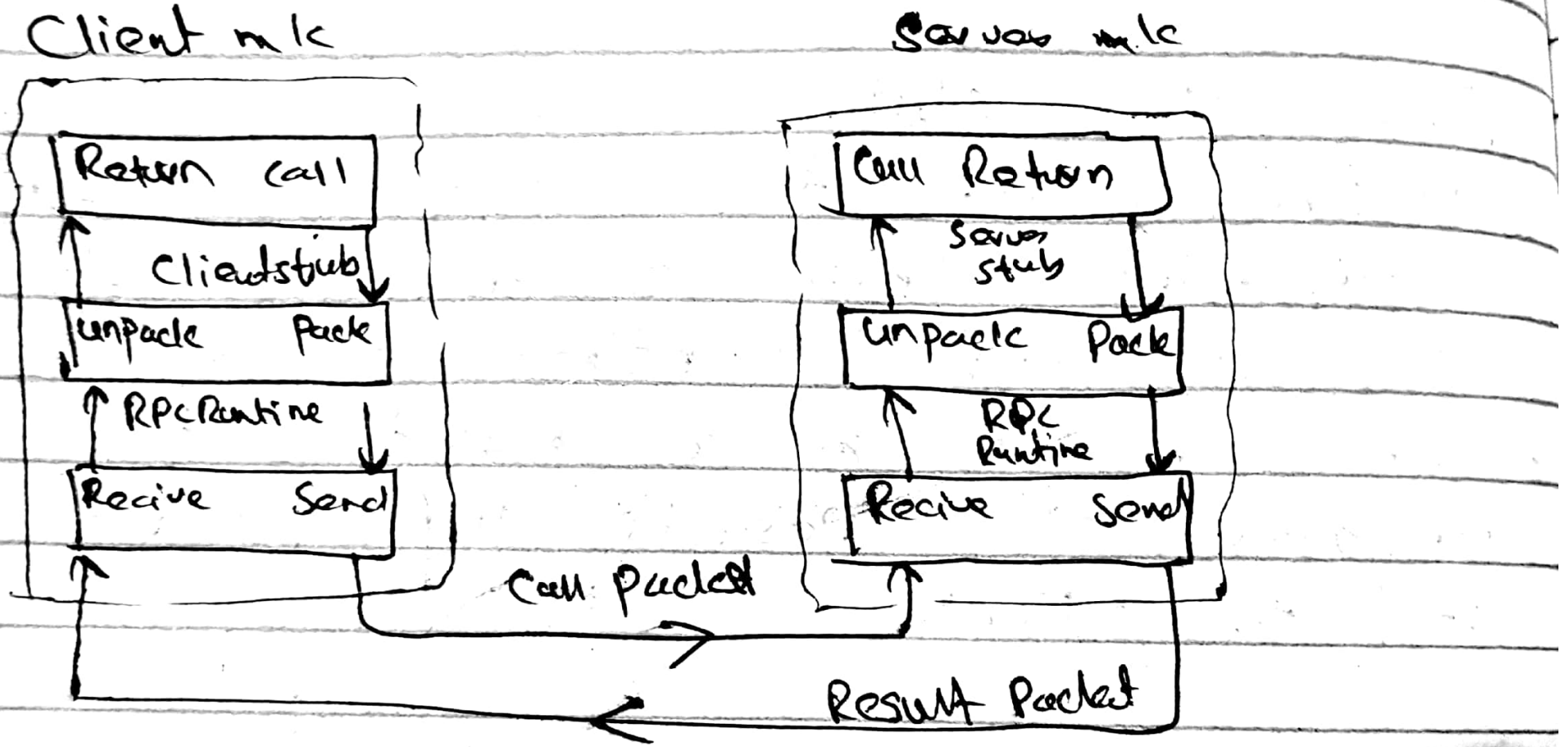

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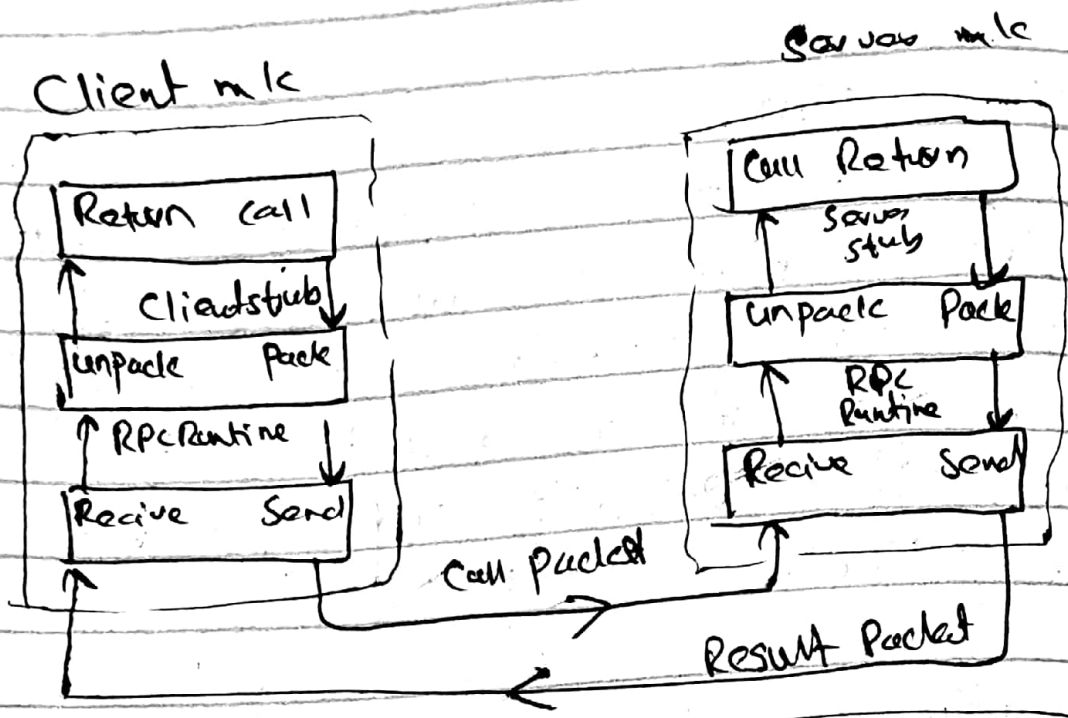

Issues In RPC and how they are Resolved

One Major Issue:

Difference in data representation on the client and server machine.

E.g: Representation of 32-bit Integer.

Some system knows as big endian use the high memory address to store the most significat byte while other system store the least significat byte at the high memory Address.

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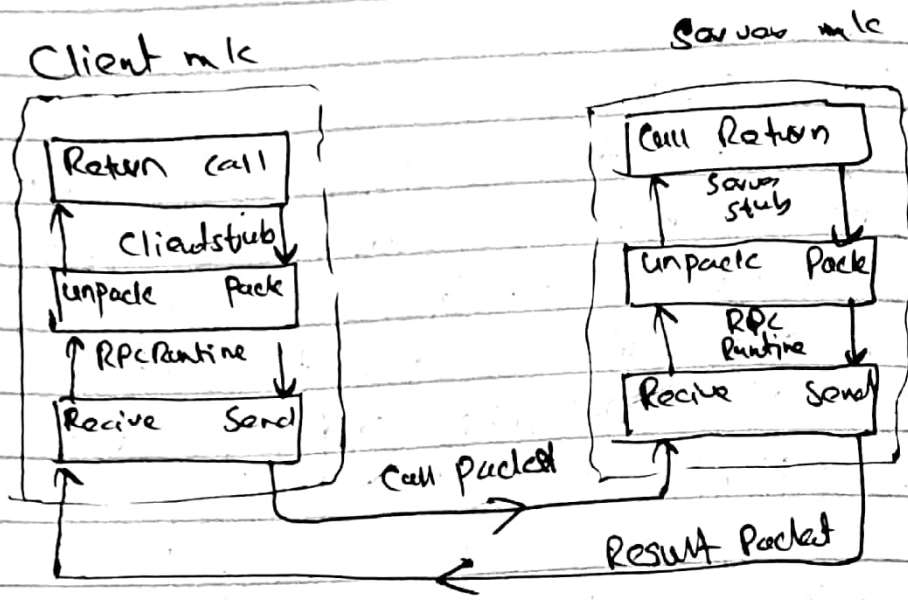

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How they are Resolved

RPC system define machine Independent representation of data. one such representation is know as external data representation (XDR) one the client side, parameter marshalling involves converting the machine dependent data into XDR before they are sent into to server. one the server side, XDR data are unmarshalled and converted to the machine dependent representation for the server.