

Design of Distributed Systems
Quiz-4 and Solution
BESE-14 (A&B)

1. What type of Invocation Semantics is involved in Local Procedure Call? (3)

Message Type
Request ID
Remote Object Reference
Method ID
Args

2. Describe Remote Reference Module, highlighting its functions, actions on client and server side and comment on entries maintained by RO Table. (7)

RR Module performs following two basic operations.

Two functions

- Translating b/w local and remote object reference.
- Creating Remote Object Reference

This module is called by the components of RMI software e.g. when a request msg arrives the table is used to find out which local object to be invoked.

Entries in RO Table

To support this RRM in each process has a remote object table.

- It records the correspondence b/w LOR in that process & ROR (which are system wide).
- RO Table includes:
 - An entry of all the RO held by the process (RO B will be recorded in table at the server)
 - An entry of each local proxy (proxy for Object B will be recorded in the table at the client)

Actions performed by RRM on Client and Server Side

The actions of remote reference module are as follows

1. When a Remote Object is to be passed as argument for the first time, the RR-Module is asked to create an ROR, which it adds to its table. (Server Side)
 2. When an ROR arrives in a Request-Reply message, the RR-Module is asked for the corresponding LOR, which may refer either to a proxy (client) or to an RO (server).
-
1. In the case the ROR is not in the table (this can happen on client side when it sees the ROR first time), the RMI software creates a new proxy & ask the RR-Module to add it to the table

Instructor: Dr. Hammad Afzal
Quiz-4
Design of Distributed Systems: BESE-14 (A & B)
School of Computer Science
Military College of Signals, NUST, Pakistan