

SHORT NOTES / RMI, CORBA, RMI-IIOP

1. RMI

- a. Objects are PASSED BY VALUE
- b. Also supports PASS BY REFERENCE
- c. The client or server can RECONSTRUCT the object easily
- d. Data types can be ANY java object
- e. Heterogeneous object are NOT supported
- f. Object are garbage collected
- g. RMI relies on JAVA REMOTE METHOD PROTOCOL (JRMP)
- h. Relies heavily on object SERIALIZATION (Java way of serialization)
- i. JAVA RMI server objects are NAMED using URLs
- j. For a client to access an RMI server object , it should use the URL as if with an HTML page
- k. RMI is FREE
- l. RMI is simple to USE
- m. OBJECT oriented COMMUNICATION
- n. DYNAMIC CODE BASE (Can send not only state (field values) , also implementation (byte code) of objects across networks)
- o. VERSION MISMATCH is detected
- p. DISTRIBUTED garbage collection is SUPPORTED
- q. RMI supports POLYMORPHIC parameter passing (Sub types of a super type which was unknown before)
- r. Propagation of transaction and security context is not supported

2. CORBA

- a. Heterogeneous object are SUPPORTED
- b. Relies on a protocol called INTERNET INTRA ORB PROTOCOL (IIOP)

- c. Objects are NOT passed by VALUE , Only the ARGUMENT data is PASSED
- d. The server/client has to RECONSTITUTE the object with the data
- e. Only commonly accepted data types can be passed as arguments UNLESS CORBA 2.3/Objects By Value specification is used
- f. CORBA can NOT send NEW objects across network
- g. The heart of the CROBA object lies with the Object Request Broker (ORB)
- h. ORB is a service that ENABLES CORBA object to locate other objects and COMMUNICATE with them
- i. To have good CORBA services you have to PAY
- j. CORBA is harder to use
- k. STRUCTURED communication
- l. STATIC CODE BASE
- m. Need to use IDL to define CORBA objects
- n. No support for DETECTING software VERSION MISMATCH
- o. There is no garbage collection as Different programming languages may not support Garbage collection
- p. Can NOT send IMPLEMENTATIONS over the network , means can not send PREVIOUSLY UNKNOWN object over the network
- q. CORBA object interact with ORB either through the ORB interface or through a Basic Object Adaptor (BOA)
- r. Does not support POLYMORPHIC arguments (Type must be known beforehand)

3. RMI-IIOP

- a. RMI-IIOP is an EXTENSION to JAVA RMI

LIYANA ARACHCHIGE RANIL

- b. This allows RMI objects to COMMUNICATE with CORBA and wise versa
- c. Supports POLYMORPHIC argument passing
- d. Supports CODE DOWNLOADING for java objects sent BY VALUE across an IIOP connection in the same way as RMI does across a JRMP connection. In JDK 1.2 this support was added. This is due to the introduction of OBJECT BY VALUE specification for RMI-IIOP
- e. EJB interfaces are INHERANTLY RMI-IIOP interfaces
- f. Propagation of TRANSACTION and SECURITY CONTEXT is supported