

# RMI Interview Questions

## 1) Explain RMI Architecture?

RMI uses a layered architecture, each of the layers could be enhanced or replaced without affecting the rest of the system. The details of layers can be summarised as follows:

- *Application Layer*: The client and server program
- *Stub & Skeleton Layer*: Intercepts method calls made by the client/redirects these calls to a remote RMI service.
- *Remote Reference Layer*: Understands how to interpret and manage references made from clients to the remote service objects.
- *Transport layer*: Based on TCP/IP connections between machines in a network. It provides basic connectivity, as well as some firewall penetration strategies.

## 2) What is the difference between RMI & Corba?

The most significant difference between RMI and CORBA is that CORBA was made specifically for interoperability across programming languages. That is CORBA fosters the notion that programs can be built to interact in multiple languages. The server could be written in C++, the business logic in Python, and the front-end written in COBOL in theory. RMI, on the other hand is a total Java solution, the interfaces, the implementations and the clients--all are written in Java.

RMI allows dynamic loading of classes at runtime. In a multi-language CORBA environment, dynamic class loading is not possible. The important advantage to dynamic class loading is that it allows arguments to be passed in remote invocations that are subtypes of the declared types. In CORBA, all types have to be known in advance. RMI (as well as RMI/IIOP) provides support for polymorphic parameter passing, whereas strict CORBA does not. CORBA does have support for multiple languages which is good for some applications, but RMI has the advantage of being dynamic, which is good for other applications.

## 3) What are the services in RMI ?

An RMI "service" could well be any Java method that can be invoked remotely. The other service is the JRMP RMI naming service which is a lookup service.

## 4) Does RMI-IIOP support code downloading for Java objects sent by value across an IIOP connection in the same way as RMI does across a JRMP connection?

Yes. The JDK 1.2 support the dynamic class loading.

## 5) How many types of protocol implementations does RMI have?

RMI has at least three protocol implementations: Java Remote Method Protocol(JRMP), Internet Inter ORB Protocol(IIOP), and Jini Extensible Remote Invocation(JERI). These are

alternatives, not part of the same thing, All three are indeed layer 6 protocols for those who are still speaking OSI reference model.

### **6)Does RMI-IIOP support dynamic downloading of classes?**

No, RMI-IIOP doesn't support dynamic downloading of the classes as it is done with CORBA in DII (Dynamic Interface Invocation).Actually RMI-IIOP combines the usability of Java Remote Method Invocation (RMI) with the interoperability of the Internet Inter-ORB Protocol (IIOP).So in order to attain this interoperability between RMI and CORBA,some of the features that are supported by RMI but not CORBA and vice versa are eliminated from the RMI-IIOP specification.

### **7)Does RMI-IIOP support code downloading for Java objects sent by value across an IIOP connection in the same way as RMI does across a JRMP connection?**

Yes. The JDK 1.2 support the dynamic class loading.

### **8)Can RMI and Corba based applications interact ?**

Yes they can. RMI is available with IIOP as the transport protocol instead of JRMP.