The RMI Proxy FAQ

(Last updated 25 April 2001 4:20 pm)

1.   What is the RMI Proxy?

The RMI Proxy is an application firewall.

An application firewall is a firewall component which allows the passage of TCP/IP traffic over an application protocol, subject to access control by the network administrator.

You may be familiar with HTTP proxies, which appear in Java as the values of the system properties http.proxyHost and http.proxyPort. An HTTP proxy is an application firewall for the HTTP application protocol.

The RMI Proxy is a firewall component for the Java RMI application protocol. It allows the passage of RMI traffic only, subject to access control by the network administrator.

2.   What does it do?

The RMI Proxy provides the solution to several common problems encountered when deploying RMI applications over the Internet:

- it enables RMI Clients to penetrate firewall boundaries
- it enables RMI Servers to be placed behind firewalls
- it enforces the RMI protocol
- it provides fine-grained access-control over what can pass through the firewall

3.   Doesn't RMI/HTTP tunnelling already do this?

RMI/HTTP tunnelling solves the RMI Client/firewall problem, but does nothing about the RMI Server/firewall problem.

RMI/HTTP tunnelling is unreliable and performs poorly. RMI/HTTP doesn't work through all brands of firewall.

RMI/HTTP provides little in the way of access-control protection to the network adminstrator, as it is specifically designed to subvert it.

4.   Doesn't SOCKS already do this?

SOCKS solves the client-side problem. In fact, SOCKS is a better solution than RMI/HTTP if you can use it.

SOCKS does nothing about the server-side problem.

Neither RMI/HTTP nor SOCKS enforces the RMI protocol nor provides any fine-grained access control.

5.   How does the RMI Proxy work?

The RMI Proxy consists of 3 components:

- a proxy RMI Registry
- an RMI Proxying Server
- an API for use by clients and servers

The proxy RMI Registry and Server components are installed in association with each firewall that exists between an RMI client and the RMI server. There can be any number of these firewalls. Each must open its port for RMI traffic, which is then handled in a secure manner by the associated RMI proxy.

A system property rmi.proxyHost, set at each host involved, dictates whether to delegate client-side requests (e.g. lookup, list), or propagate server-side registry actions (e.g. bind, rebind), to the next RMI proxy in the chain. Each RMI proxy has the opportunity to restrict access, via java security policy files. Restrictions may be imposed by hostname/IP address, remote service name, and/or remote interface & method names.

Use of the API to establish this arrangement is described below.

6.   What code changes do I have to make to clients?

If your clients are not behind firewalls you need make no changes. If they are behind one or more firewalls, you must:

- use the com.rmiproxy.ProxyNaming class instead of the java.rmi.Naming class or the java.rmi.registry.Registry interface
- set the system property rmi.proxyHost correctly.

If you don't know whether the clients will or won't be behind firewalls, make the above changes and ensure that rmi.proxyHost is or is not set according to the prevailing circumstance at runtime.

7.   What code changes do I have to make to RMI servers?

If your servers are not behind firewalls you need make no changes. If they are behind one or more firewalls, you must:

- use the com.rmiproxy.ProxyNaming class instead of the java.rmi.Naming class or the java.rmi.registry.Registry interface
- set the system property rmi.proxyHost correctly

If you don't know whether the servers will or won't be behind firewalls, make the above changes and ensure that rmi.proxyHost is or is not set, according to the prevailing circumstance at runtime.

8.   Are socket factories supported?

No. (HTTP tunnelling doesn't support them either). We are looking into this for a possible future release.

9.   Is SSL supported?

No. We are looking at this for a future release, probably supporting the entire RMI Security Extension which has been targeted for inclusion in JDK 1.4.

10.   Is RMI/IIOP supported?

Not at present. We will work with Sun to support RMI/IIOP in a future release. When and if incorporated, the RMI Proxy will be a fully functional CORBA 3.0 GIOP Proxy, for RMI/IIOP-originated services only.

Clients which pass or are returned RMI/IIOP stubs via the RMI Proxy are presently thrown a com.rmiproxy.FirewallException.

11.   What JDK versions are supported?

- •   The RMI Proxy itself requires JDK 1.3 or later to execute
- •   Clients and servers may be any JDK version from JDK 1.1 onwards
- •   JDK 1.1 clients and servers are supported provided that JDK 1.1 skeletons are available via the same codebase as the corresponding stubs.

We don't recommend deploying RMI servers with JDKs prior to JDK 1.2.2 because essential RMI corrections were made in that release. If you must use JDK 1.1, use JDK 1.1.8 or later, for a similar reason.

12.   Is Activation supported?

Activation is supported in the current release. Activatable stubs passing through the RMI Proxy are proxied as Unicast stubs.

13.   Does the RMI Proxy support a "pass-through" mode?

Not at present. We will work with Sun to support pass-through mode in a future release. Pass-through mode will also be useful to support SSL/pass-through and IIOP/passthrough.

14.   What other limitations exist in the RMI Proxy?

None. In particular, remote objects passed within the object graph of a parameter or result of a remote method are handled correctly.

15.   What ports are employed by the RMI Proxy?

The RMI Proxy uses the same port as the RMI Registry: 1099.

16. What is the pricing model for the RMI Proxy?

- The RMI Proxy client and server APIs are free.
- The RMI Proxy firewall components are subject to a per-computer licence fee of $US300
- Quantity discounts and corporate licence schemes $ASK
- A source code licence will be available TBA.

17. What support is available for the RMI Proxy?

- Problem reports can be submitted via the Problem Report page
- Regular updates are available via this Web site
- Join the RMI Proxy mailing list TBA
- An annual support program for the RMI proxy will be available TBA

18. What is in the package?

- The client/server API and documentation are free downloads.
- The product package contains the RMI Proxy proper JAR files, the client/server API JAR file, and the API documentation.

19. Where can I get further information on the RMI Proxy?

See the RMI Proxy home page at http://www.rmiproxy.com.

20. Where should I send support queries on the RMI Proxy?

Support queries should be sent to RMI Proxy support at mailto:support@rmiproxy.com.

21. Where should I send and marketing queries on the RMI Proxy?

Sales and marketing queries should be sent to Telekinesis Sales and Marketing at mailto:sales@rmiproxy.com.