

## CSCI 5105 Project 1 makeup1 description:

1. Registry Server code has been updated due to the reported bug: client should be able to receive GetList results without Register it.

Change: commented super\_server.cpp: lines 409-413. (updated code is provided)

Please send TA an email if any abnormal functionality occurs.

2. For simplicity you can use the same ProgramID/Version (RPC) or BindingName (RMI) for all group servers if you wish.

3. RPC/RMI uses the default ports (as we did in class). This may cause port collisions if students use the same machines.

a. For Java RMI, to avoid this, you can pick a single RMI port to use for your servers. They are specified in registry server commands:

- Register, JavaRMI: ["Register;RMI;IP;Port;BindingName;**Port for RMI**"]
- GetList, JavaRMI:  
["IP;BindingName;**Port**;IP;BindingName;**Port**;IP;BindingName;**Port** ... and so on"]

b. and it's discussed in the following links:

- <https://stackoverflow.com/questions/939111/change-default-rmi-port-java>
- <https://stackoverflow.com/questions/3071376/what-port-is-used-by-java-rmi-connection>
- <https://stackoverflow.com/questions/26862641/how-to-set-a-custom-port-for-rmi-registry>

c. For Linux RPC, since the portmap cannot easily be customized, you might need to test your code in your local machine and then verify it in cselabs.

4. An IP and Port is still needed for UDP communication (e.g. Register, GetList, Heartbeat) and must be supplied to the registry server. You can pick a single Port number and use it for all group servers to make things easy. The IP address is the numeric IP address (we supply code that can call to get your IP, see attached code).

5. The GetList function is normally called by client (despite it appearing in 3.3). But could be called by servers if you have a use case for doing that.

6. ";;;content", is an invalid subscription and you should generate an error.

7. Subscription masks can have super/sub-set relationships. e.g. client A subscribes "Science;;UMN;;", client B posts an article with "Science;Someone;UMN;content", client A should be able to receive it.

a. client A subscription mask: { Science AND UMN }

- b. client B article subscription mask: { Science AND Someone AND UMN } which is subset of { Science AND UMN }, thus client A should receive it.
- c. An exception is that, when a client just Join a server, it should not receive any article (even the subscription mask is empty-set). It will start matching articles after subscribing to some topic.

8. Group servers are not required to keep the historical articles, but may do so optionally (with garbage collection).

9. In the project description, "server(s)", "group server(s)", and "local server(s)" are the same thing. They are the "group server" in the description figure.