CSS497 Summer 2005

Redesigning and Enhancing the UWAgent Execution Engine

Status Report: Fri 07/01/2005

Summary

Dates: Sat 06/25/2005 – Fri 07/01/2005

This work period: Removed the RMI code from UWPlace, and developed a proof of concept using sockets with UWPlace and UWInject.

Next work period: Extend the socket code to send and receive a UWAgent.

Code Changes

The new socket code is in UWPlace.main() and UWPlace.sendAgent().

```
    public static void main( String[] args ) {
            // ...

                // Removed
                /*
                // initialize rmi registry
                String[] regList = Naming.list("//localhost:"
                                        + uwplace.portnumber);
                for(int i = 0; i < regList.length; i++) {
                        Naming.unbind("rmi:" + regList[i]);
                        System.out.println("Naming.unbind(rmi:" + regList[i]);
                }

                // Since it will always bind, I put it here
                Naming.rebind("rmi://localhost:" + portnumber + "/" +
uwplace.getPlaceName(), uwplace);
                System.out.println("rmi://localhost:" + portnumber + "/" +
uwplace.getPlaceName());
                */

                // Added
                // Listen on the UWPlace port number
                byte[] header = new byte[40];
                int portNum = Integer.parseInt(uwplace.portnumber);
                ServerSocket srvr = new ServerSocket(portNum);
                Socket skt = srvr.accept();
                System.out.println("Server socket connected.\n");
                InputStream in = skt.getInputStream();
                in.read(header);

                System.out.println("UWPlace main() received a header. Type field
is:");
            System.out.println(header[0]);
```

```
    public void sendAgent(UWAgent ag, HashMap classesHash, String hostName) {
            // ...

            // Removed
            /*
            // Lookup the remote destination where the agent will be sent.
            UWTransitSystem uwtransit = (UWTransitSystem)
               Naming.lookup("rmi://" + hostName + ":" + getPortNumber()
                              + "/" + getPlaceName());

            // The agent is sent by calling the receiveAgent method at the
            // remote resource.
            uwtransit.receiveAgent(byteArrayObj, classesHash, null);
            */

            // Added
            int portNum = Integer.parseInt(getPortNumber());
            Socket skt = new Socket(hostName, portNum);
            OutputStream out = skt.getOutputStream();

            byte[] header = new byte[40];
            header[0] = 1;
            out.write(header);
```

Output

Here is the output on mnode0/mnode1 (note: rmiregistry is not used).
The source code is in /home/uwagent/MA/UWAgent.new.

mnode1
```
[uwagent@mnode1 UWAgent.new]$ java UWInject mnode0 SpawnTest -m 3 6 5
File : /home/uwagent/MA/UWAgent.new
URL : file:/home/uwagent/MA/UWAgent.new/
URL : null
ip = mnode1/10.1.0.1, time = 1120241912670, ID = 0
file = ./SpawnTest.class
byteArrayClass.length = 1612
end of UWInject (main)
[uwagent@mnode1 UWAgent.new]$
```

mnode0
```
[uwagent@mnode0 UWAgent.new]$ java UWPlace &
[1] 13460
[uwagent@mnode0 UWAgent.new]$ All backup files are deleted.
Server socket connected.
```

UWPlace main() received a header. Type field is:
1
```
UWPlace is ready at localhost:35354/UWPlace.
```