ECSE 414 Intro. to Telecom. Networks
Multiple Users Testing Document

Contents

1 Stress Testing

1.1 Multiple Users

Testing assigned to: Jastaj Virdee
Purpose: To determine if multiple users can use the system while using the same machines and/or the same ports.

1.2 Test cases

Cases Being Tested (all test cases will be done with two users using the same machines):

1. Same ports for the regular data communication, dummy destination/client and pubkey.

2. Same ports for the regular data communication and dummy destination/client, different ports for the pubkey.

3. Same ports for the pubkey and dummy destination/client, different ports for the regular data communication.

4. Same ports for the regular data communication and pubkey, different ports for the dummy destination/client.

5. Same port for the dummy destination/client, different ports for the regular data communication and pubkey.

6. Same port for the pubkey, different ports for the regular data communication and dummy destination/client.

7. Same port for the regular data communication, different ports for the pubkey and dummy destination/client.

8. Different ports for the regular data communication, dummy destination/client and pubkey.

1.2.1 Test case 1:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using the same ports for the regular data communication, dummy destination/client and pubkey.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines and ports as the first user.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU1

1.2.2 Test case 2:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using the same ports for the regular data communication and dummy destination/client, and different ports for the pubkey.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines as the first user. They will also usethe same ports for the regular data communication and dummy destination/client, and different ports for the pubkey.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU2

1.2.3 Test case 3:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using the same ports for the pubkey and dummy destination/client, and different ports for the regular data communication.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines as the first user. They will also use the same ports for the pubkey and dummy destination/client, and different ports for the regular data communication.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU3

1.2.4 Test case 4:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using the same ports for the regular data communication and pubkey, and different ports for the dummy destination/client.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines as the first user. They will also use the same ports for the regular data communication and pubkey, and different ports for the dummy destination/client.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU4

1.2.5 Test case 5:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using the same port for the dummy destination/client, and different ports for the regular data communication and pubkey.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines as the first user. They will also use the same ports for the dummy destination/client, and different ports for the regular data communication and pubkey.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU5

1.2.6 Test case 6:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using the same port for the pubkey, and different ports for the regular data communication and dummy destination/client.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines as the first user. They will also use the same port for the pubkey, and different ports for the regular data communication and dummy destination/client.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU6

1.2.7   Test case 7:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using the same port for the regular data communication, and different ports for the pubkey and dummy destination/client.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines as the first user. They will also use the same port for the regular data communication, and different ports for the pubkey and dummy destination/client.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU7

1.2.8   Test case 8:

Test Case Description:
Two users will attempt to use the system while logged on to the same machines using different ports for the regular data communication, dummy destination/client and pubkey.

Steps to perform test:

1. The first user will initialize the system by starting the testing environment using the scripts provided in the repository.

2. Once the environment is set up, the first user will send a message to verify that the system is working.

3. If the message was successfully sent and a message was received, continue with the next steps. Otherwise restart the test.

4. The second user will initialize the system by starting the testing environment using the scripts provided in the repository. They will use the same machines as the first user and different ports for the regular data communication, dummy destination/client and pubkey.

5. Observe whether the second user is able to use the system.

6. Whether the second user is able to use the system or not, determine whether the first user can still use the system.

Test case Number:
MU8

1.3 Test Results

1.3.1 Test Summary:

1. MU1: The second user is unable to use the system while the first user is already using it. After the system fails for the second user, the first user is unable to continue using the system.

2. MU2: The second user is unable to use the system while the first user is already using it. After the system fails for the second user, the first user is unable to continue using the system.

3. MU3: The second user is unable to use the system while the first user is already using it. After the system fails for the second user, the first user is able to continue using the system.

4. MU4: The second user is unable to use the system while the first user is already using it. After the system fails for the second user, the first user is unable to continue using the system.

5. MU5: The second user is able to use the system while the first user is already using it. After the system succeeds for the second user, the first user is able to continue using the system.

6. MU6: The second user is unable to use the system while the first user is already using it. After the system fails for the second user, the first user is able to continue using the system.

7. MU7: The second user is unable to use the system while the first user is already using it. After the system fails for the second user, the first user is unable to continue using the system.

8. MU8: The second user is able to use the system while the first user is already using it. After the system succeeds for the second user, the first user is able to continue using the system.

1.3.2 Result Analysis

Failed Test Cases:

1. MU1:
   Routers and destination node : "Error: Address already in use."
   Client node: "Connection refused"
   Directory node: No error.

2. MU2:
   Routers and destination node : "Error: Address already in use."
   Client node: "Connection refused"
   Directory node: No error.

3. MU3:
   Routers and destination node : "Error: Address already in use."
   Client node: "Connection refused"
   Directory node: No error.

4. MU4:
   Routers and directory node : "Error: Address already in use."
   Destination and client node: No error.

5. MU6:
   Routers: "Error: Address already in use."
   Client node: "Connection refused"
   Destination and destination node: No error.

6. MU7:
   Routers and directory node : "Error: Address already in use."
   Client node: *blank* Destination node: No error.

Note: Although MU5 succeeded (both users were able to use the system), the destination node for the second user said there was an error (”Error: Address already in use.”) even though it was able to send and receive messages.