

## COMP-3670 Final Project Test Cases

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This document contains four different test cases with screenshots we used to test the features and limits of our project.

**Test Case 1:** Client inputs a server IP they would like to connect to but rejects the confirmation. In this case the client process will immediately terminate following the input “no”. On the server side it will display that a client has connected but when the client refuses the confirmation it will state the client terminated the connection. Both perspectives are shown in screenshots below.

Server:

```
This is a Network Discovery Tool

Server is available at Port 8080 looking for a Client to get a Hostname (Not IP Address) do the following:
Do a WHOIS Lookup for Hostnames that qualify
Find all IP Addresses for this Hostname
For all IP Addresses found: Check if the IP is reachable and find all Open Ports

Connected to a Client

Client has terminated the connection
```

Client:

```
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
no
|
```

**Test Case 2:** Client inputs an invalid website as a hostname to the server. In this example “youtu.be.com” was used to represent a typo. The server recognizes that there is no such thing and outputs this information. The client will receive server error message saying no Ip’s were found. The text file will store information on successful methods so in this case it will have the WHOIS lookup. Below are screenshots of the outputs.

DiscoveryData.txt

WHOIS Lookup:

Domain Name: YOUTBE.COM  
Registry Domain ID: 196359852\_DOMAIN\_COM-VRSN  
Registrar WHOIS Server: whois.markmonitor.com  
Registrar URL: http://www.markmonitor.com  
Updated Date: 2020-07-13T09:32:32Z  
Creation Date: 2005-08-14T23:29:54Z  
Registry Expiry Date: 2021-08-14T23:29:54Z  
Registrar: MarkMonitor Inc.  
Registrar IANA ID: 292  
Registrar Abuse Contact Email: abusecomplaints@markmonitor.com  
Registrar Abuse Contact Phone: +1.2083895740  
Domain Status: ok <https://icann.org/epp#ok>  
Name Server: NS1.GOOGLEDOMAINS.COM  
Name Server: NS2.GOOGLEDOMAINS.COM  
Name Server: NS3.GOOGLEDOMAINS.COM  
Name Server: NS4.GOOGLEDOMAINS.COM  
DNSSEC: unsigned  
URL of the ICANN Whois Inaccuracy Complaint Form: <https://www.icann.org/wicf/>  
>>> Last update of whois database: 2020-12-20T20:47:36Z <<<

Client:

```
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
youtbe.com
The network data will be stored into the text file: DiscoveryData.txt
Error Server Message: No IP Addresses found

Would you like to give the server another HostName? (yes/no)
no
```

Server:

```
This is a Network Discovery Tool

Server is available at Port 8080 looking for a Client to get a Hostname (Not IP Address) do the following:
Do a WHOIS Lookup for Hostnames that qualify
Find all IP Addresses for this Hostname
For all IP Addresses found: Check if the IP is reachable and find all Open Ports

Connected to a Client

Received youtbe.com from the Client
Getting and Sending Data now
Server not found: No such host is known (youtbe.com)
Sent all Data to the Client
Client terminated the connection
```

**Test Case 3:** In this test case the client enters a device name instead of a website name as a hostname to the server. The WHOIS feature will not work but it will find the IP addresses and is the addresses are reachable. Screenshots of the results are below

Server:

```
This is a Network Discovery Tool

Server is available at Port 8080 looking for a Client to get a Hostname (Not IP Address) do the following:
Do a WHOIS Lookup for Hostnames that qualify
Find all IP Addresses for this Hostname
For all IP Addresses found: Check if the IP is reachable and find all Open Ports

Connected to a Client

Received DESKTOP-LUFN1EN from the Client
Getting and Sending Data now
Sent all Data to the Client
Client terminated the connection
```

Client:

```
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
DESKTOP-LUFN1EN
The network data will be stored into the text file: DiscoveryData.txt
Error Server Message: Did not do a WHOIS lookup because of incompatible extension

Would you like to give the server another HostName? (yes/no)
no
```

Text-File:

```
Did not do a WHOIS lookup because of incompatible extension
-
-
-
All IP Addresses found:
192.168.0.8
fe80:0:0:0:2d12:6ab9:b566:afe8%11
2001:1970:5e1f:b000:ecd8:383:6fcb:47d0
2001:1970:5e1f:b000:0:0:0:e683
2001:1970:5e1f:b000:2d12:6ab9:b566:afe8
-
-
-
IP Address 192.168.0.8 is Reachable
No Open Ports for IP Address 192.168.0.8
IP Address fe80:0:0:0:2d12:6ab9:b566:afe8%11 is Reachable
No Open Ports for IP Address fe80:0:0:0:2d12:6ab9:b566:afe8%11
IP Address 2001:1970:5e1f:b000:ecd8:383:6fcb:47d0 is Reachable
No Open Ports for IP Address 2001:1970:5e1f:b000:ecd8:383:6fcb:47d0
IP Address 2001:1970:5e1f:b000:0:0:0:e683 is Reachable
No Open Ports for IP Address 2001:1970:5e1f:b000:0:0:0:e683
IP Address 2001:1970:5e1f:b000:2d12:6ab9:b566:afe8 is Reachable
No Open Ports for IP Address 2001:1970:5e1f:b000:2d12:6ab9:b566:afe8
|
```

**Test Case 4:** In this final test case the client agrees to send another hostname to the client after already completing one. The server will then be prompted if they would like to continue with the same client. If both answer yes, this will restart the same process and will be executed the same way. The data from the second hostname will overwrite the text file from the first hostname so the client would need to save the text file before giving a second hostname if they wanted to save the information. In this example the hostnames youtube.com and google.com are used. You will be able to see the information gathered from google if found in the text file where it written over the YouTube information. Screenshots can be found below.

Server:

```
This is a Network Discovery Tool

Server is available at Port 8080 looking for a Client to get a Hostname (Not IP Address) do the following:
Do a WHOIS Lookup for Hostnames that qualify
Find all IP Addresses for this Hostname
For all IP Addresses found: Check if the IP is reachable and find all Open Ports

Connected to a Client

Received youtube.com from the Client
Getting and Sending Data now
Sent all Data to the Client
Client wants the Server to do another Network Discovery Job
Would you like to continue with this Client? (yes/no)
yes
Received google.com from the Client
Getting and Sending Data now
Sent all Data to the Client
Client terminated the connection
```

Client:

```
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
youtube.com
The network data will be stored into the text file: DiscoveryData.txt

Would you like to give the server another HostName? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
google.com
The network data will be stored into the text file: DiscoveryData.txt

Would you like to give the server another HostName? (yes/no)
no
```

Text-File:

---

WHOIS Lookup:

Domain Name: GOOGLE.COM  
Registry Domain ID: 2138514\_DOMAIN\_COM-VRSN  
Registrar WHOIS Server: whois.markmonitor.com  
Registrar URL: http://www.markmonitor.com  
Updated Date: 2019-09-09T15:39:04Z  
Creation Date: 1997-09-15T04:00:00Z  
Registry Expiry Date: 2028-09-14T04:00:00Z  
Registrar: MarkMonitor Inc.  
Registrar IANA ID: 292  
Registrar Abuse Contact Email: abusecomplaints@markmonitor.com  
Registrar Abuse Contact Phone: +1.2083895740  
Domain Status: clientDeleteProhibited <https://icann.org/epp#clientDeleteProhibited>  
Domain Status: clientTransferProhibited <https://icann.org/epp#clientTransferProhibited>  
Domain Status: clientUpdateProhibited <https://icann.org/epp#clientUpdateProhibited>  
Domain Status: serverDeleteProhibited <https://icann.org/epp#serverDeleteProhibited>  
Domain Status: serverTransferProhibited <https://icann.org/epp#serverTransferProhibited>  
Domain Status: serverUpdateProhibited <https://icann.org/epp#serverUpdateProhibited>  
Name Server: NS1.GOOGLE.COM  
Name Server: NS2.GOOGLE.COM  
Name Server: NS3.GOOGLE.COM

-  
-  
-

All IP Addresses found:

172.217.164.206  
2607:f8b0:400b:801:0:0:0:200e

-  
-  
-

IP Address 172.217.164.206 is not Reachable  
IP Address 2607:f8b0:400b:801:0:0:0:200e is Reachable  
No Open Ports for IP Address 2607:f8b0:400b:801:0:0:0:200e

-  
-  
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