

10/22/2015



# USER'S MANUAL

*Project or System Name*

IPV6 Performance Analyzer

Team IT08 Ltd.

**Revision Sheet**

<b>Release No.</b>	<b>Date</b>	<b>Revision Description</b>
Rev. 0	11/10/2015	User's Manual Template and Checklist
Rev. 1	15/10/2015	Formatting, Paraphrasing
Rev. 2	17/10/2015	Error Checking
Rev. 3	18/10/2015	Text Addition
Rev. 4	20/10/2015	Review for errors
Rev. 5	22/10/2015	Last Review with formatting

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# USER'S MANUAL

## TABLE OF CONTENTS

	<u>Page #</u>
<b>1.0 GENERAL INFORMATION .....</b>	<b>1-1</b>
<b>1.1 System Overview .....</b>	<b>1-1</b>
<b>1.2 Project References .....</b>	<b>1-2</b>
<b>1.3 Authorized Use Permission.....</b>	<b>1-2</b>
<b>1.4 Points of Contact .....</b>	<b>1-2</b>
1.4.1 Information .....	1-2
<b>2.0 SYSTEM SUMMARY.....</b>	<b>2-1</b>
<b>2.1 System Configuration .....</b>	<b>2-1</b>
<b>2.2 Data Flows.....</b>	<b>2-2</b>
<b>2.3 User Access Levels.....</b>	<b>2-2</b>
<b>2.4 Contingencies and Alternate Modes of Operation .....</b>	<b>2-2</b>
<b>3.0 INSTALLATION GUIDE.....</b>	<b>3-1</b>
<b>4.0 STARTING THE SOFTWARE.....</b>	<b>4-1</b>
<b>5.0 FUNCTIONS .....</b>	<b>5-1</b>
<b>5.1 Search Function.....</b>	<b>5-1</b>
<b>5.2 Probing .....</b>	<b>5-4</b>
5.2.1 Single Probing .....	5-4
5.2.2 List Probing .....	5-5
5.2.3 Auto Probing .....	5-7
5.2.4 Stop Probing.....	5-8
<b>5.3 Compare Single Server .....</b>	<b>5-8</b>
<b>5.4 Compare Countries .....</b>	<b>5-11</b>
<b>5.5 Compare Continents .....</b>	<b>5-12</b>
<b>5.6 Compare Server Types.....</b>	<b>5-13</b>
<b>5.7 Export Tables.....</b>	<b>5-13</b>
<b>5.8 Export Charts .....</b>	<b>5-14</b>
<b>4.6 Import/Export Database .....</b>	<b>5-14</b>
<b>6.0 FREQUENTLY ASKED QUESTIONS .....</b>	<b>6-1</b>
<b>7.0 INDEX.....</b>	<b>7-1</b>
<b>8.0 Appendix A -Deliverable Task Breakdown Statement .....</b>	<b>8-2</b>



## **1.0 GENERAL INFORMATION**

## **1.0 GENERAL INFORMATION**

### **1.1 System Overview**

The IPV6 performance analyzer application is intended to assist in identifying servers that are IPV6 ready across different continents. The document will detail the step by step installation of IPV6 performance analyzer.

Major functions performed by the system are as follows:

- Probing servers across the internet
- Processing the raw data and storing them into database
- Searching the database and graphically representing the data
- Diagnosis toward ipv6 unavailable networks
- Provide means for end users to use it
- Provide clear and concise User documentation.

The software will collect data by probing sample servers from all over the world and store them in a database that can be used to compare and contrast the results of different countries IPV6 readiness. The performance of these servers will be in statistical form and will be represented by the use of charts to represent the difference of using IPv4 and IPv6 to access these servers.

The architecture of the system is a Software system that uses python and C# language to automate the mention functions. The delivery of search terms to the IPV6 performance analyzer is the responsibility of the IT08 group and Murdoch University. The IPV6 performance analyzer was designed to be used by any one that wants to test the IPV6 readiness of different servers of different continents.

The IPV6 Performance analyzer was designed for Microsoft Windows products only. The software delivered in this iteration is fully functional and is capable of producing the requirements that were suggested by the client.

## **1.2 Project References**

The following documents were used as references in preparing of this document:

- Requirements and Analysis Document
- Project Management Document
- Design Document
- Test Document

## **1.3 Authorized Use Permission**

The usage of the IPV6 performance analyzer is limited to its owners IT08 Limited and Murdoch University via the terms of its development. The IPV6 performance analyzer is wholly owned by Murdoch University and may not be used without their consent.

## **1.4 Points of Contact**

### **1.4.1 Information**

For any further information, IT08 Limited can be contacted through the programmer of the software Man Fu Lei (george10282006@hotmail.com).

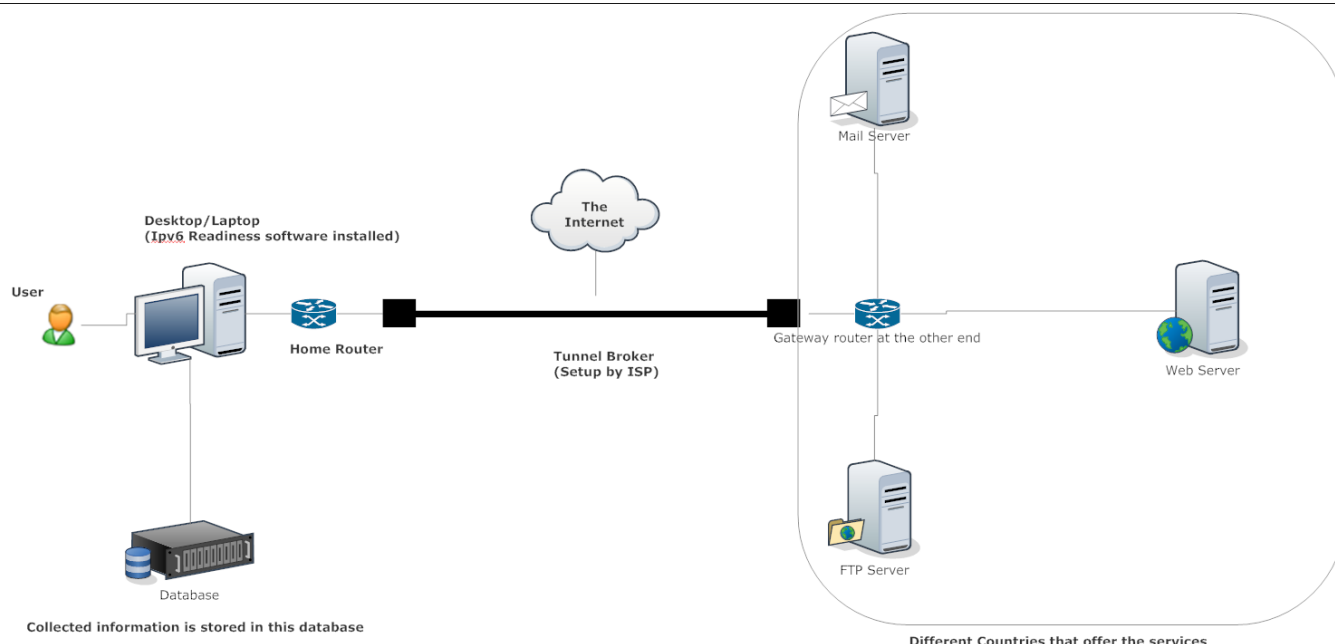
## **2.0 SYSTEM SUMMARY**



## 2.0 SYSTEM SUMMARY

The system summary provides an overview of the system. The summary outlines the user of the IPV6 performance analyzer, system configuration, and user access levels.

### 2.1 System Configuration



The IPV6 Performance analyzer is software based and was designed to be integrated with the current existing hardware system. The user uses the software to analyze the performance of the Internet servers that are of different types including web server, mail server and so on. The tunnel is setup from the computer to an Internet tunnel broker's server to provide IPv6 connectivity to local machine. The measurement results are then stored on to the local database server.

The existing system hardware is as follows:

- Desktop running windows with a MySQL database
- Different servers

The existing system software is as follows:

- Tunnel broker
- Microsoft Visual Studio 2015 C#

- XAMPP MySQL Server

## **2.2 Data Flows**

The performance analyzer software systems were done in the design document. For More information Please refer to the Design document:

## **2.3 User Access Levels**

Everyone can use the application.

## **2.4 Contingencies and Alternate Modes of Operation**

A significant time was put into loading large number of servers into the system, so in case of an emergency requiring reboot the system will need to take several minutes gathering its resources before the IPV6 performance analyzer can probe. Once the loading process has taken place, the software will resume to normal operations.

## **3.0 GETTING STARTED**

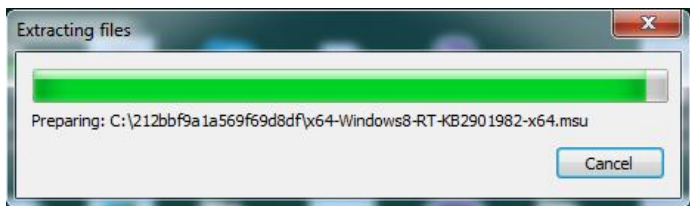
## 3.0 INSTALLATION GUIDE

The Getting Started section explains how the IPV6 Performance analyzer is installed into your device. This guide demonstrates step by step procedure of how to successfully install our prototype. Below are the steps.

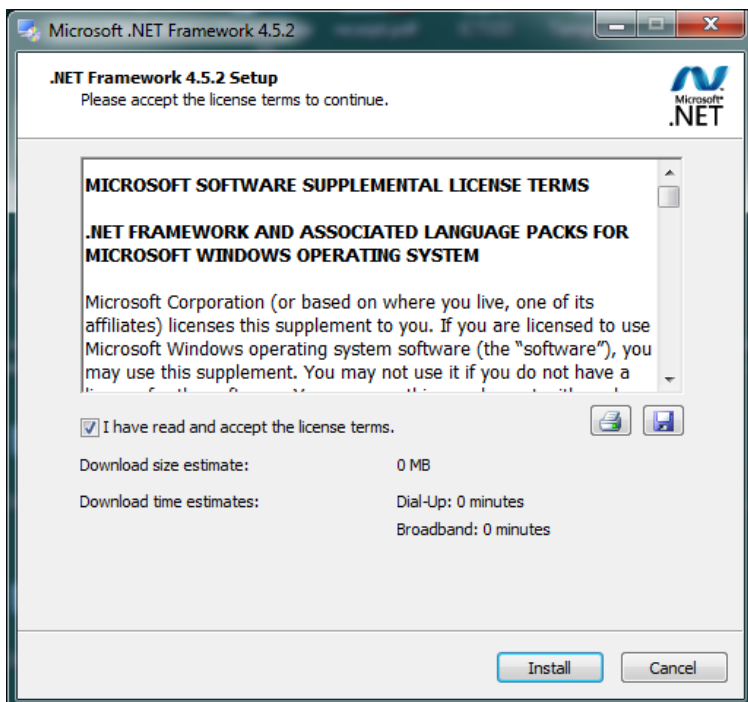
### Prerequisite

1. Microsoft .NET framework 4.6 is a prerequisite
2. Microsoft .NET Framework 4.6 needs to be downloaded and install. It can be downloaded from <https://www.microsoft.com/en-us/download/details.aspx?id=48130>

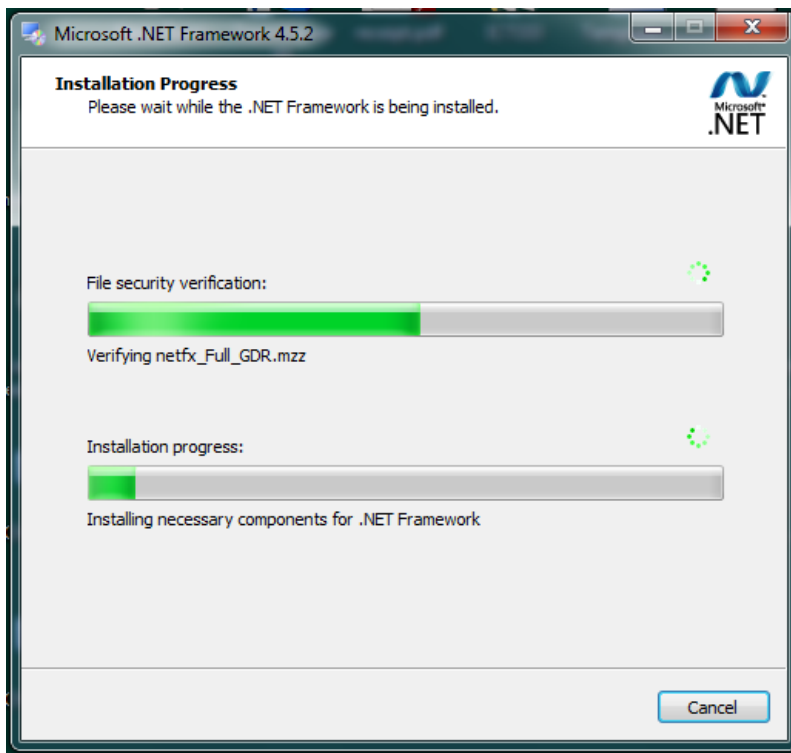
Extract the file



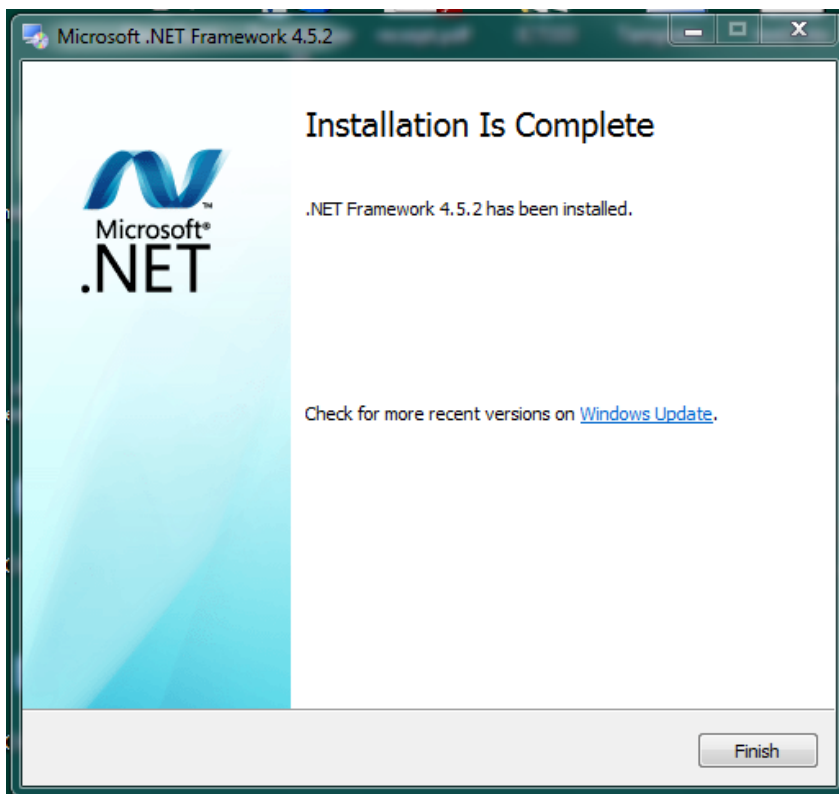
Upon extraction, agree to the terms and condition and select install



Installation begins

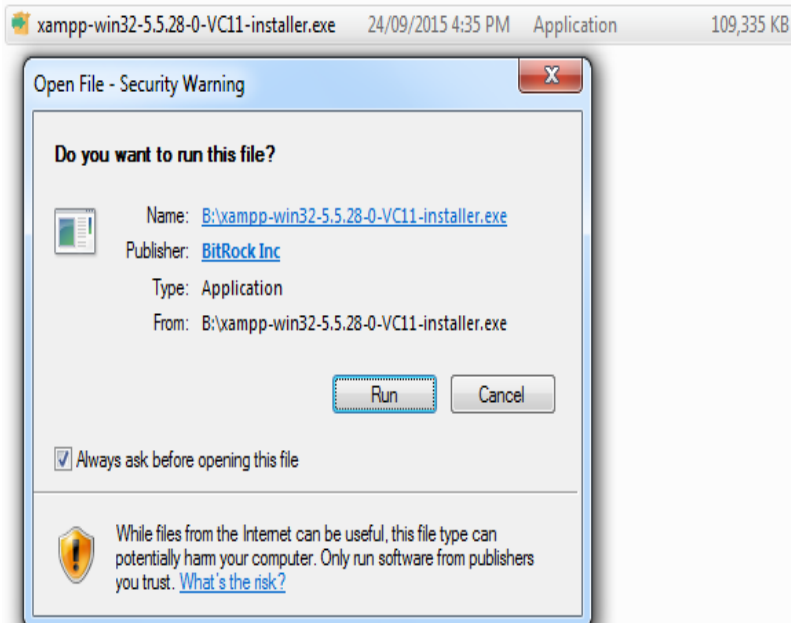


Select Finish to complete the installation:

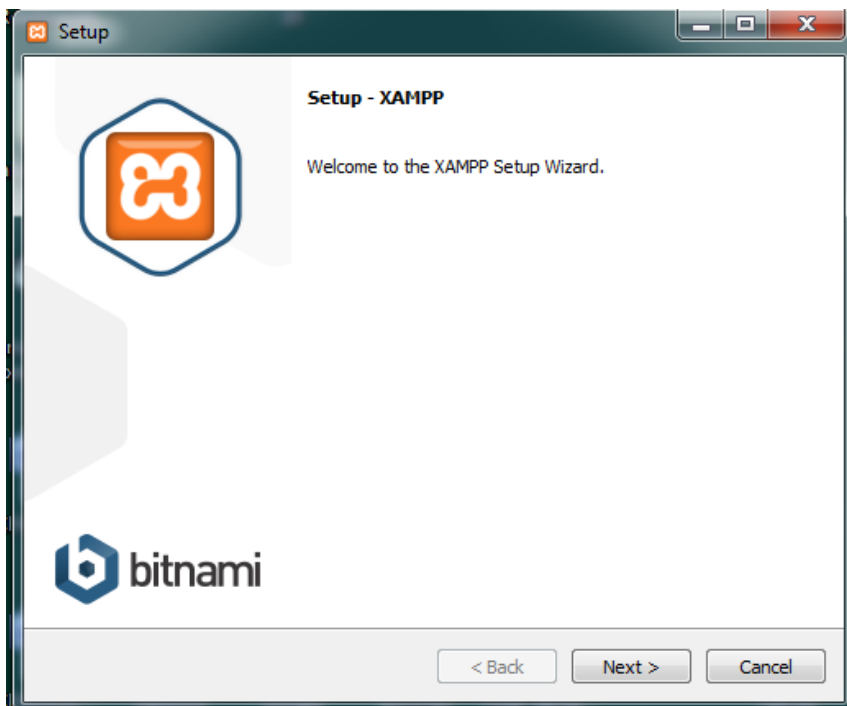


XAMPP is another required component of our software. It's the SQL database server. Below are the installation steps

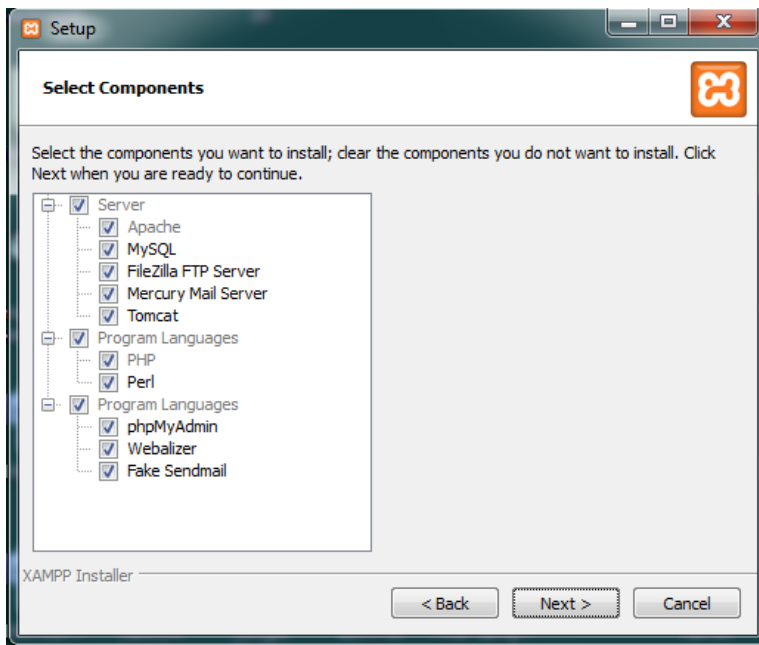
Double click on the xampp-win32 exe file and select run



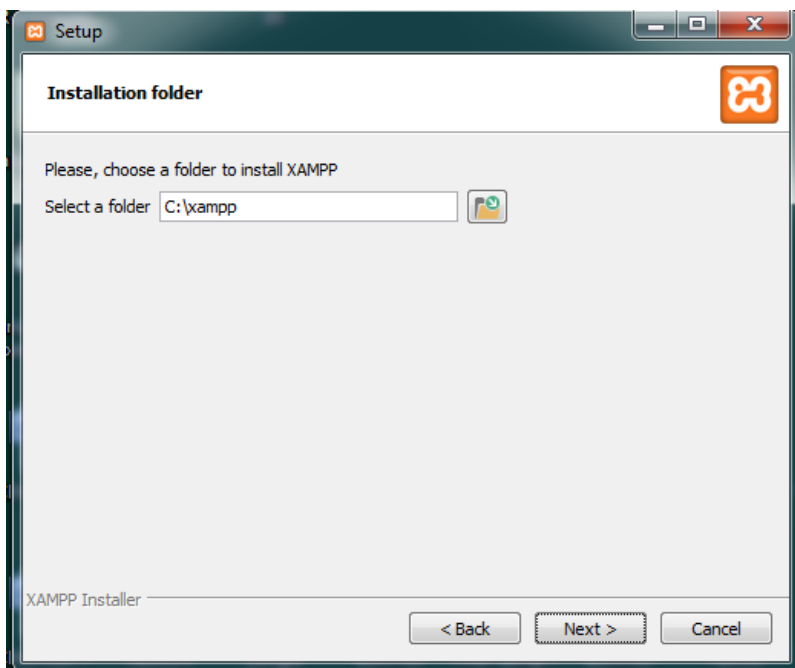
Under the Welcome to the XAMPP Setup Wizard dialogue box select next



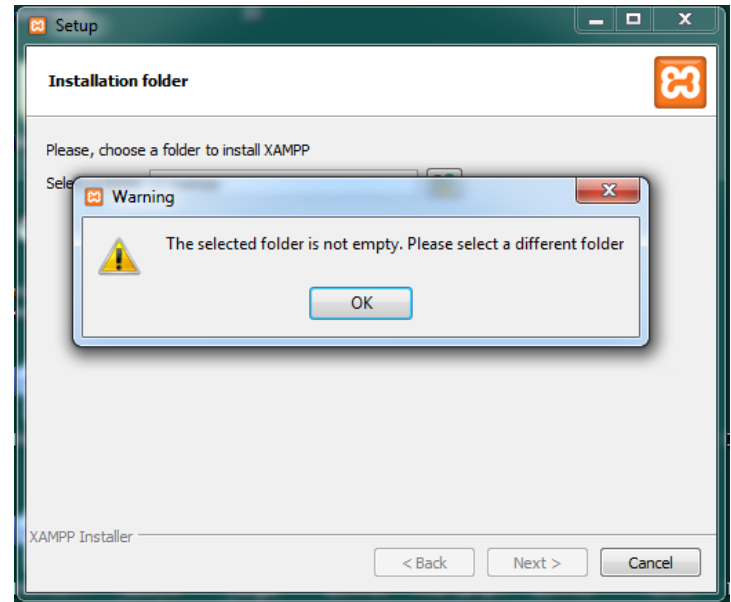
Under the select components dialogue box select next



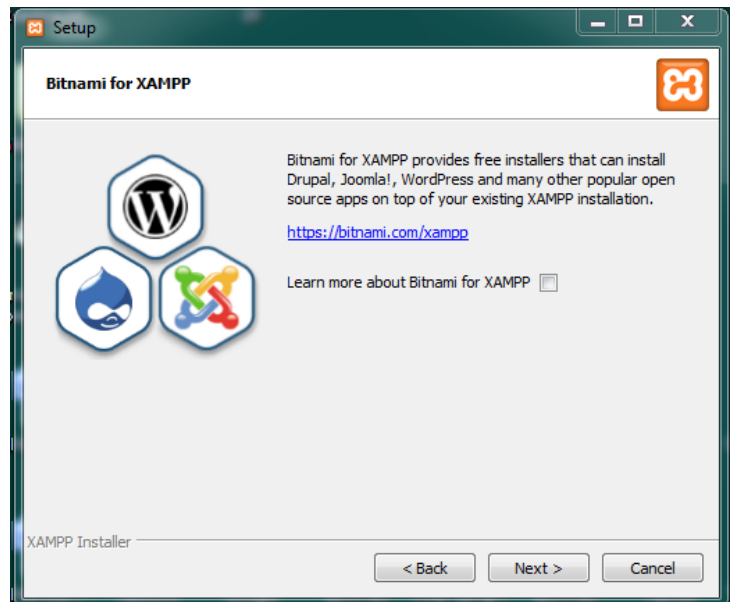
Under the installation Folder dialogue box section, you can leave the default installation folder on the c drive or choose an alternative location and select next



If you come across this error message this means that XAMPP software has been install previously. You need to delete the XAMPP before proceeding with the installation

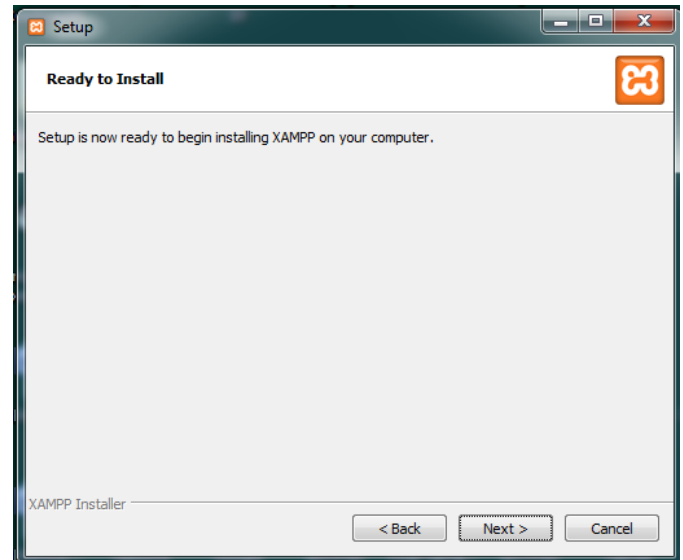


After deleting the folder, select next and you'll be presented with the Bitnami for XAMPP dialogue box. Untick the "learn more about bitnami" box and select next



Under ready to install select next

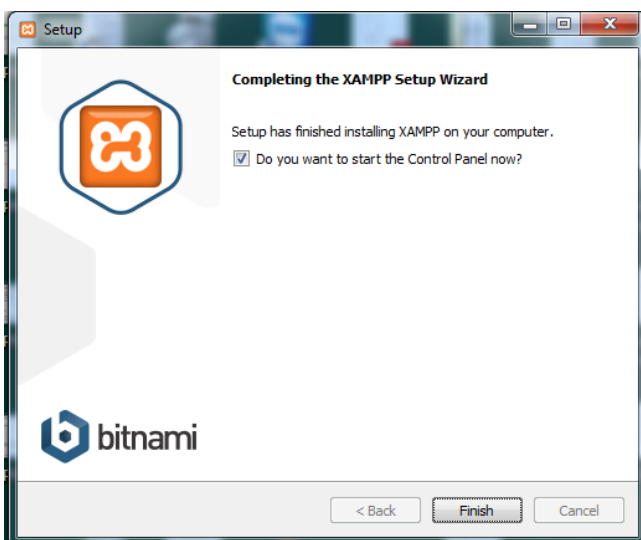




Installation begins

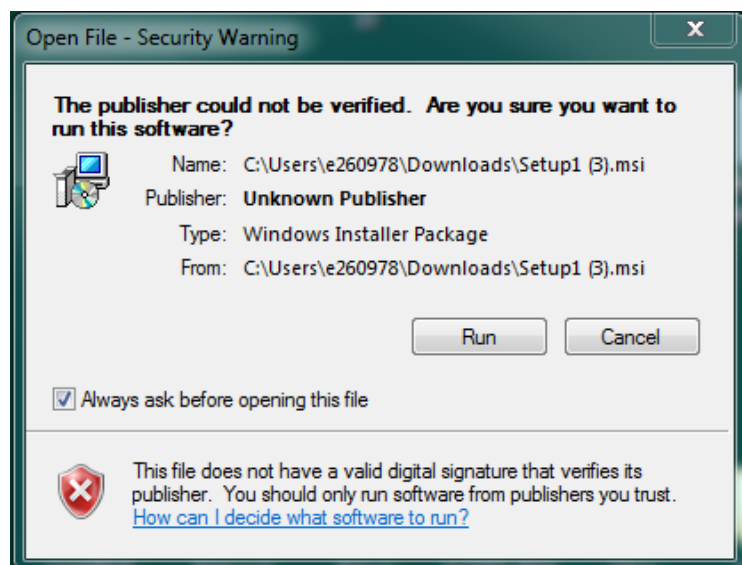


On the Completing the XAMPP setup Wizard select finish

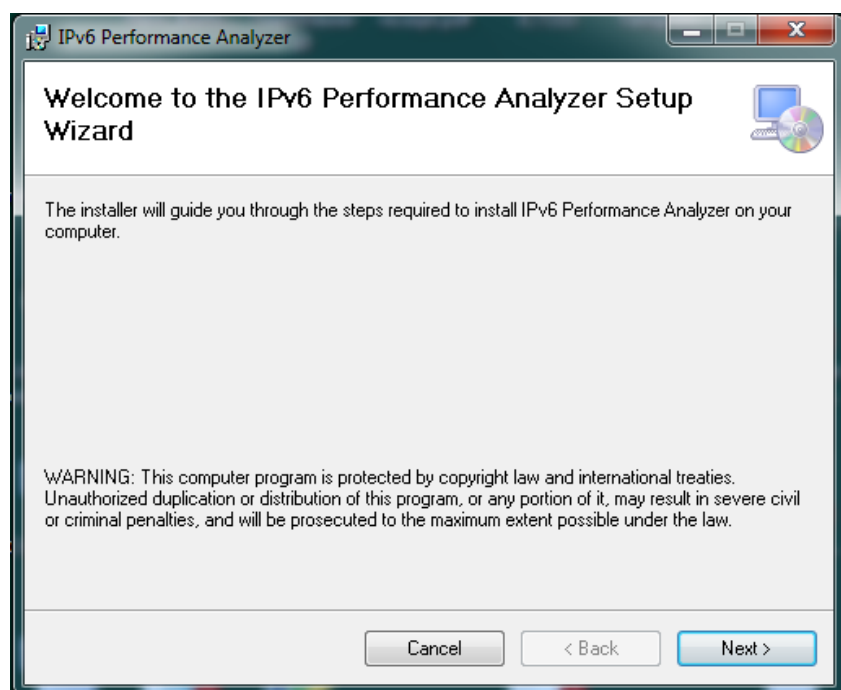


## Install the software

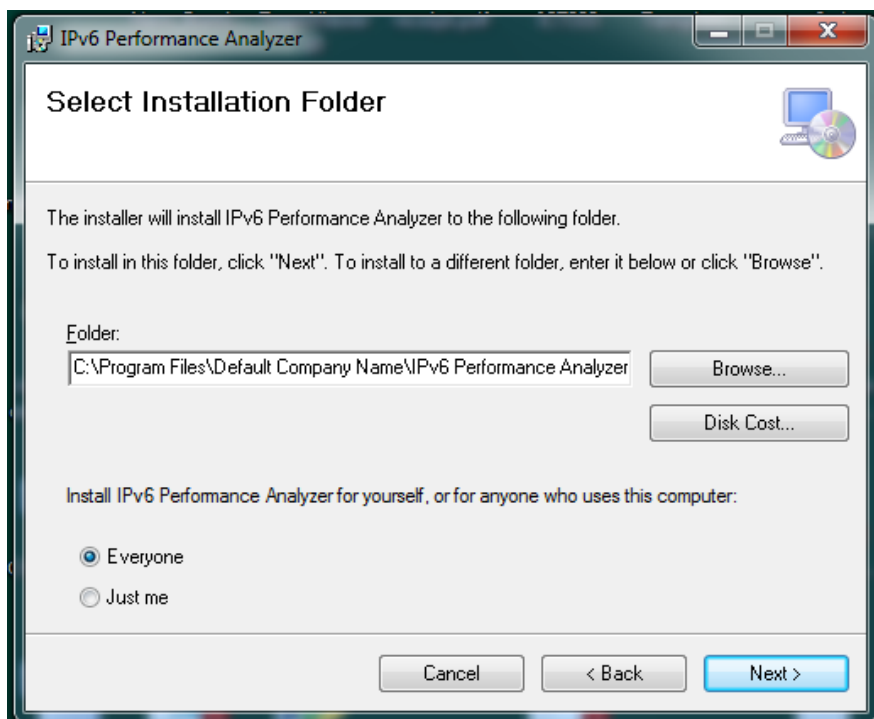
Double click on the setup1.exe file to start the installation and select run



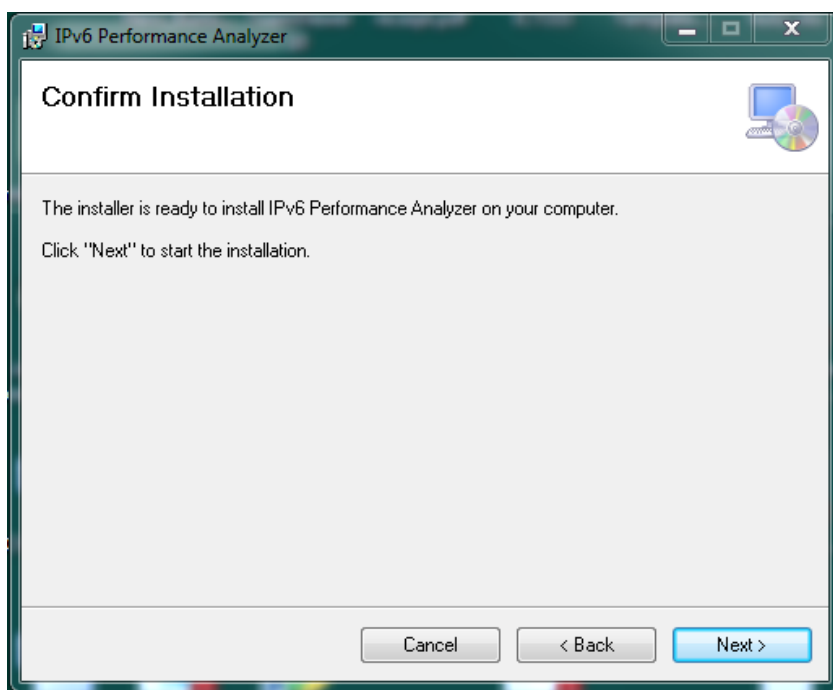
On the Welcome to the IPV6 Performance Analyzer setup wizard dialogue box select next



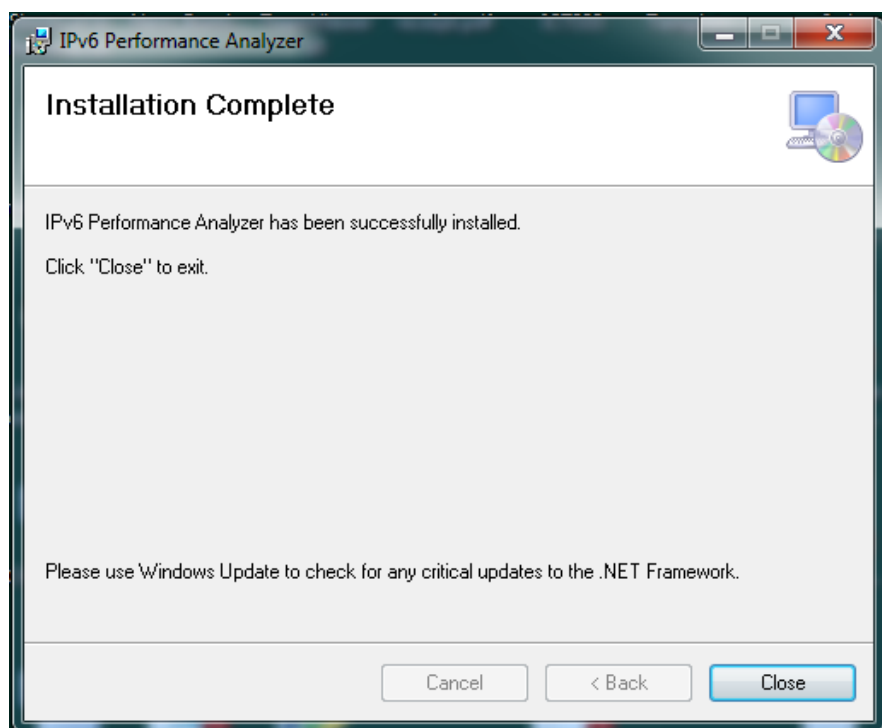
On the installation folder dialogue box, you can leave the default location of the installation folder or choose a specific location. Under the section Install IPV6 Analyzer for yourself, choose the option and select next



On the confirmation installation dialogue box select next and the installation begins



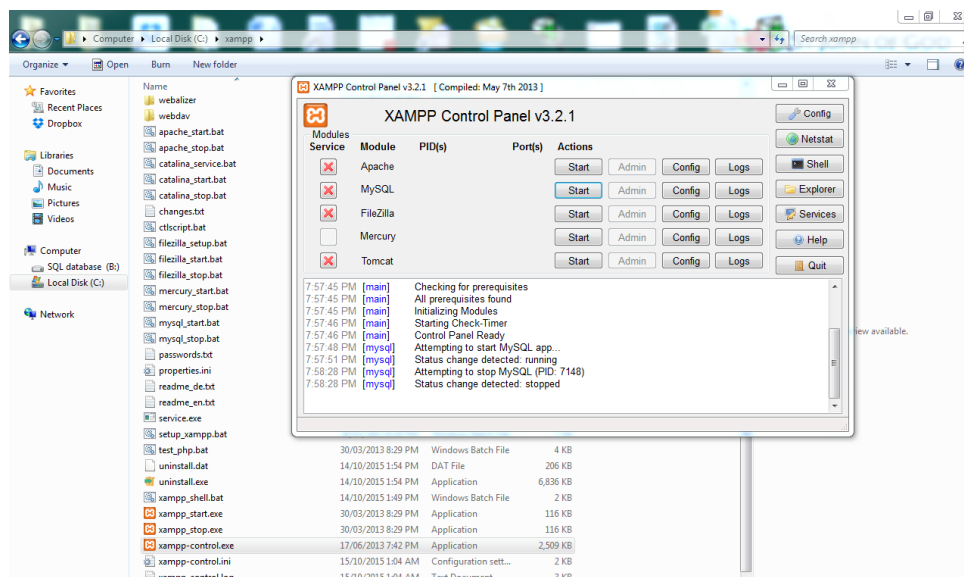
On the Installation complete dialogue box select close.



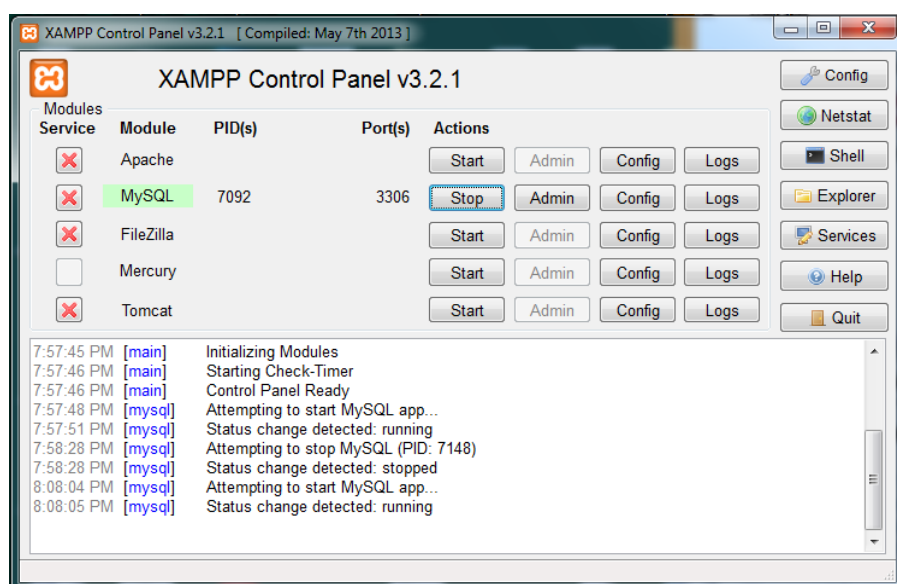
## **4.0 USING THE SOFTWARE SYSTEM (ONLINE)**

## 4.0 STARTING THE SOFTWARE

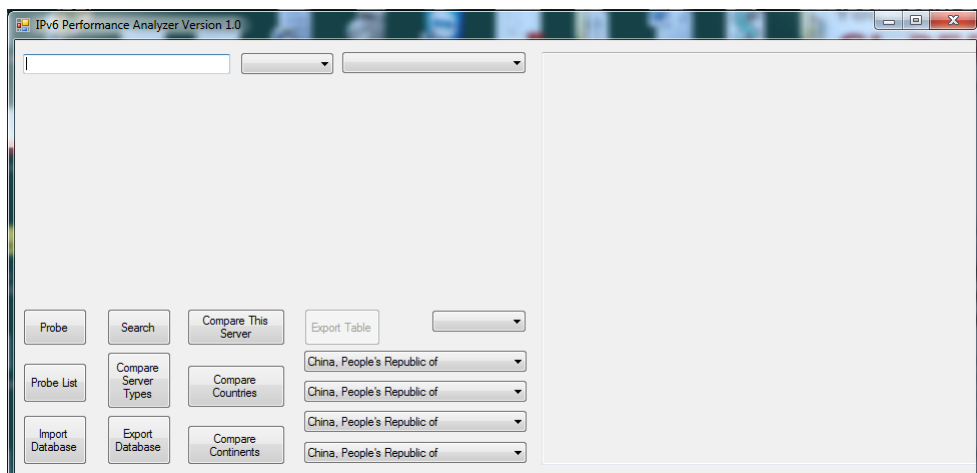
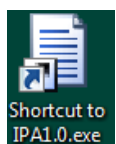
To start the software MYSQL service need to be started first. Navigate to the local c: drive of the workstation and select the XAMPP folder. Under the XAMPP folder, double click on the xampp\_control.exe and it should launch the XAMPP Control Panel v3.2.1



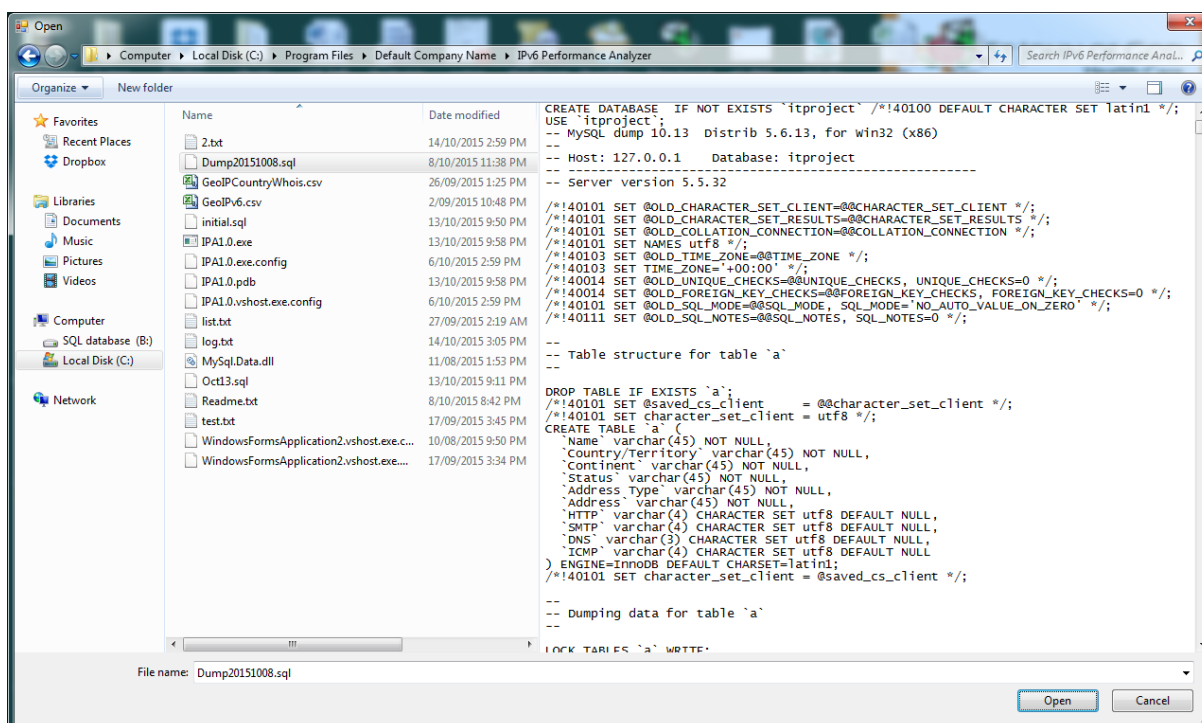
Click the start button that correspond to the MYSQL service under Actions to start the MYSQL service



Double Click on the IPA1.0 shortcut menu on the desktop to launch the IPV6 Performance Analyzer.



The ipv6 performance analyzer needs a database to function therefore one need to be imported. Select the import button on the IPv6 analyzer and navigate to the following location on your local drive C:\Program Files\Default Company Name\IPv6 Performance Analyzer. Under that folder select the Oct20.sql database for import and select open. This database file is only for demonstration and is not mandatory to be imported for the software to function normally.



If XAMPP is not running when the software is opened, it will automatically connect to the database. At this stage the user is required to choose the `xampp_start.exe` file under the XAMPP's application folder. If the user accidentally chooses a wrong file, the program will pop up the file dialogue again until the user chooses the right file.

Database will now be connected, Please choose file `xampp_start.exe` under XAMPP folder

OK

After connecting to the database it will check if the necessary initial database is there. If it is not the software will import the initial database automatically.

Database not detected. Initial database will now be imported.

OK



---

## 5.0 FUNCTIONS

### 5.1 Search Function

The search function allows you to search a list of predefined servers and services from around the globe. Secondly the software supports inputted data from the end user.

Select the search button on the IPV6 Analyzer and you'll be presented with a list of server names, their countries, associated continents, status(which states IPV6 availability or not) , their IP address and the following services, Hyper Text Transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Domain Name Services (DNS) & Internet Control Message Protocol (ICMP).

By further typing keywords inside the textbox, results can be filtered with only those servers whose names contain these keywords like following:

google.com

United States of America

Name	Country/Territory	Continent	Status	Address
google-public-dns-a.google.com	United States of ...	North America	IPv6 available	IPv6
google-public-dns-b.google.com	United States of ...	North America	IPv6 available	IPv6
google.com	United States of ...	North America	IPv6 available	IPv4
google.com.au	United States of ...	North America	IPv6 available	IPv6
google.com.br	United States of ...	North America	IPv6 available	IPv4
google.com.hk	United States of ...	North America	IPv6 available	IPv4
Google.com.mx	United States of ...	North America	IPv6 available	IPv6
www.google.com	United States of ...	North America	IPv6 available	IPv6

<

>

Filtering results:

dns

United States of America

Name	Country/Territory	Continent	Status	Address
google-public-dns-a.google.com	United States of ...	North America	IPv6 available	IPv6
google-public-dns-b.google.com	United States of ...	North America	IPv6 available	IPv6

By scrolling to the right side one can see several entries under columns “HTTP/SMTP/DNS/ICMP”. NULL entries denote this server can’t be reached by this type of service. Other entries denote the server can be reached by that kind of service.

The status of the server indicates the diagnosis function that has been done during the probing process. IPv6 available means the server can be reached using both IPv4 and IPv6 addresses. IPv6 unsupported means the server’s name can’t be resolved into IPv6 address. IPv6 network unreachable means the server’s network doesn’t support IPv6. IPv6 host unreachable means the server may have been misconfigured or it has been shut down. IPv6 only means the server can only be reached using IPv6 address.

Narrow down the range of searching results by choosing the continents and the countries in the dropdown lists on the right side. If no country, continent or server is specified, the whole database will show like above: Input keywords of the servers in the “Search/Probe here” field to find servers matching certain keywords.

	Asia	China, People's Republic of	
Name	Country/Territory	Continent	Status
163.com	China, People's Republic of	Asia	IPv6 unsupported
360.cn	China, People's Republic of	Asia	IPv6 unsupported
a.resolvers.level3.net	China, People's Republic of	Asia	IPv6 unsupported
baidu.com	China, People's Republic of	Asia	IPv6 unsupported
Chinadaily.com.cn	China, People's Republic of	Asia	IPv6 unsupported
gmw.cn	China, People's Republic of	Asia	IPv6 unsupported
hao123.com	China, People's Republic of	Asia	IPv6 unsupported
ipv6.bupt.edu.cn	China, People's Republic of	Asia	IPv6 host unavailable
mail.jlmwholesale.com	China, People's Republic of	Asia	IPv6 unsupported

Results can be selected by clicking and dragging the mouse. Use hotkey combination “Ctrl+C” to copy the selected fields. The copied data can be pasted onto any text file like following:

163.com	China, People's Republic of	Asia	IPv6 unsupported
360.cn	China, People's Republic of	Asia	IPv6 unsupported
a.resolvers.level3.net	China, People's Republic of	Asia	IPv6 unsupported
baidu.com	China, People's Republic of	Asia	IPv6 unsupported
Chinadaily.com.cn	China, People's Republic of	Asia	IPv6 unsupported
gmw.cn	China, People's Republic of	Asia	IPv6 unsupported
hao123.com	China, People's Republic of	Asia	IPv6 unsupported
ipv6.bupt.edu.cn	China, People's Republic of	Asia	IPv6 host unavailable

When pasted to the text file

```
163.com      China, People's Republic of  Asia  IPv6 unsupported
360.cn      China, People's Republic of  Asia  IPv6 unsupported
a.resolvers.level3.net  China, People's Republic of  Asia  IPv6 unsupported
baidu.com   China, People's Republic of  Asia  IPv6 unsupported
Chinadaily.com.cn  China, People's Republic of  Asia  IPv6 unsupported
gmw.cn      China, People's Republic of  Asia  IPv6 unsupported
hao123.com  China, People's Republic of  Asia  IPv6 unsupported
ipv6.bupt.edu.cn  China, People's Republic of  Asia  IPv6 host unavailable
```

The table can also be exported to a file with extension .csv using the “Export table” button. Clicking on that button and input a filename with extension .csv. The following shows the saved file’s content:

export.csv - Excel

	A	B	C	D	E	F	G	H	I	J
1	Name	Country/Territory	Continent	Status	Address Type	Address	HTTP	SMTP	DNS	ICMP
2	163.com	China, People's Republic of	Asia	IPv6 unsupported	IPv4	123.58.180.7	HTTP	NULL	NULL	NULL
3	360.cn	China, People's Republic of	Asia	IPv6 unsupported	IPv4	106.120.167.66	HTTP	NULL	NULL	ICMP
4	a.resolvers.level3.net	China, People's Republic of	Asia	IPv6 unsupported	IPv4	4.2.2.1	NULL	NULL	DNS	ICMP
5	baidu.com	China, People's Republic of	Asia	IPv6 unsupported	IPv4	180.149.132.47	HTTP	NULL	NULL	ICMP
6	c-68-57-32-5.hsd1.ky.comcast.net	United Arab Emirates	Asia	IPv6 unsupported	IPv4	68.57.32.5	NULL	NULL	NULL	ICMP
7	c-68-62-160-5.hsd1.al.comcast.net	Iran, Islamic Republic of	Asia	IPv6 unsupported	IPv4	68.62.160.5	NULL	NULL	NULL	ICMP
8	Chinadaily.com.cn	China, People's Republic of	Asia	IPv6 unsupported	IPv4	124.127.52.130	HTTP	NULL	NULL	ICMP
9	cht-dns.dslgb.com	Oman, Sultanate of	Asia	IPv6 unsupported	IPv4	83.146.21.5	NULL	NULL	NULL	ICMP
10	cjv6.net	Singapore, Republic of	Asia	IPv6 available	IPv6	2400:6180:0:d0::28d:3001	HTTP	SMTP	DNS	ICMP
11	cns3.tm.net.my	Japan	Asia	IPv6 unsupported	IPv4	202.188.0.133	NULL	NULL	NULL	ICMP
12	directory.tm.net.my	Indonesia, Republic of	Asia	IPv6 unsupported	IPv4	202.188.0.182	NULL	NULL	NULL	ICMP
13	dns.sfo1.speakeasy.net	Kazakhstan, Republic of	Asia	IPv6 unsupported	IPv4	64.81.79.2	NULL	NULL	NULL	ICMP
14	flipkart.com	India, Republic of	Asia	IPv6 available	IPv4	163.53.78.58	HTTP	NULL	NULL	ICMP
15	gmw.cn	China, People's Republic of	Asia	IPv6 unsupported	IPv4	111.202.12.1	HTTP	NULL	NULL	NULL
16	hao123.com	China, People's Republic of	Asia	IPv6 unsupported	IPv4	123.125.115.150	HTTP	NULL	NULL	ICMP
17	ipv6.bupt.edu.cn	China, People's Republic of	Asia	IPv6 host unavailable	IPv4	202.112.10.81	NULL	NULL	NULL	ICMP
18	Kat.cr	Singapore, Republic of	Asia	IPv6 unsupported	IPv4	119.81.66.220	HTTP	SMTP	NULL	ICMP
19	mail.jlmwholesale.com	China, People's Republic of	Asia	IPv6 unsupported	IPv4	68.168.1.42	HTTP	SMTP	NULL	NULL
20	Naver.com	Korea, Republic of	Asia	IPv6 unsupported	IPv4	202.179.177.22	HTTP	NULL	NULL	NULL
21	Nicovideo.jp	Japan	Asia	IPv6 unsupported	IPv4	202.248.110.243	HTTP	NULL	NULL	ICMP
22	ns0.zen.co.uk	China, People's Republic of	Asia	IPv6 unsupported	IPv4	212.23.8.1	NULL	NULL	NULL	ICMP
23	ns4.tin.it	China, People's Republic of	Asia	IPv6 unsupported	IPv4	212.216.112.112	NULL	NULL	NULL	ICMP
24	nsa.ibbsonline.com	Japan	Asia	IPv6 unsupported	IPv4	209.55.0.110	NULL	NULL	DNS	ICMP
25	nsb.ibbsonline.com	Japan	Asia	IPv6 unsupported	IPv4	209.55.1.220	NULL	SMTP	DNS	ICMP
26	People.com.cn	China, People's Republic of	Asia	IPv6 unsupported	IPv4	117.18.237.191	HTTP	NULL	NULL	ICMP
27	pixnet.net	Taiwan	Asia	IPv6 unsupported	IPv4	103.23.108.107	HTTP	SMTP	NULL	ICMP
28	qq.com	China, People's Republic of	Asia	IPv6 unsupported	IPv4	163.177.65.160	HTTP	NULL	NULL	ICMP
29	rakuten.co.jp	Japan	Asia	IPv6 unsupported	IPv4	133.237.48.124	HTTP	NULL	NULL	ICMP
30	resolve01.mdtw.ny.frontiernet.net	China, People's Republic of	Asia	IPv6 unsupported	IPv4	170.215.255.114	HTTP	NULL	NULL	ICMP

In the figure one can see that the metadata of the table is also exported.

## 5.2 Probing

### 5.2.1 Single Probing

Input the name of the server and click on “Probe”. The result of the probing will be shown in the box below:

google.com

google.com-----IPv6 available  
10/20/2015 11:59:58 PM: Time used: 7

Ping4Latency	Ping6Latency	HTTP4Latency	HTTP6Latency	SMTP4Latency	SMTP6Latency	DNS4Latency	DNS6Latency
219	366	277	412	0	0	0	0

The user is required to have IPv6 connectivity to correctly reflect the true status of the server. If the user only has IPv4 connectivity, the IPv6 available servers will not be reached via IPv6 addresses which affect the status of the server to be IPv6 unsupported. If the user probed the server with IPv6 connectivity before and she probes it again without IPv6 connectivity, the server's status will change but its IPv6 address and test records will remain in the database. If the user doesn't have Internet connectivity, the software will show the output like following:

```
asdf-----
10/21/2015 12:05:07 AM: Time used: 5
Ping4Latency    Ping6Latency    HTTP4Latency    HTTP6Latency    SMTP4Latency    SMTP6Latency    DNS4Latency    DNS6Latency
0               0               0               0               0               0               0               0
```

Where no status will be available for that server and its record won't be added into the database because neither IPv4 nor IPv6 address can be obtained by resolving this server name. The user is not required to input only server name into the textbox to probe. If the user inputs an IP address and clicks on "probe", the probing will also begin and the IP address input by the user will become a server name itself in the database even if it may be associated with any other server record. The software doesn't perform reverse-DNS lookup an IPv4 address will appear as IPv6 unsupported and IPv6 address will appear as IPv6 only. The following shows an IP address stored in database after probing:

8.8.8.8

Name	Country/Territory	Continent	Status	Address Type
8.8.8.8	United States of ...	North America	IPv6 unsupported	IPv4

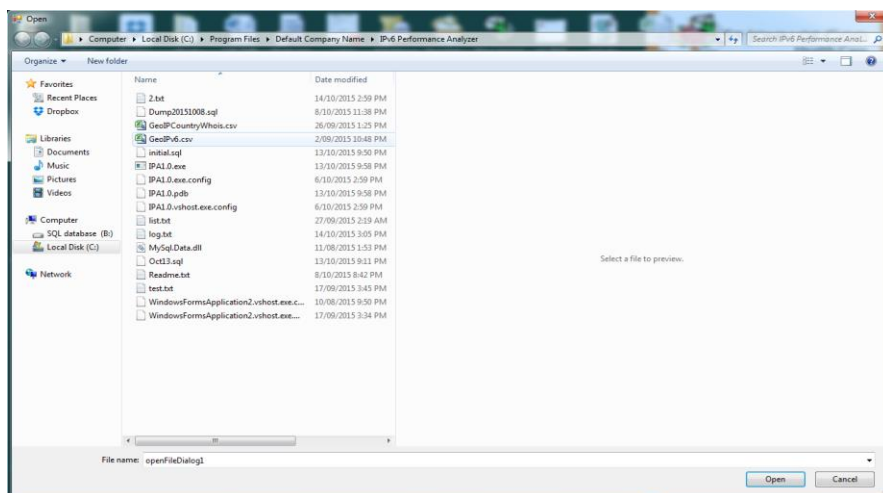
A checkbox named "Fast" enables the probing timeout to be one second if it is checked. In this case the probing speed will increase significantly. However the result may not be accurate.

## 5.2.2 List Probing

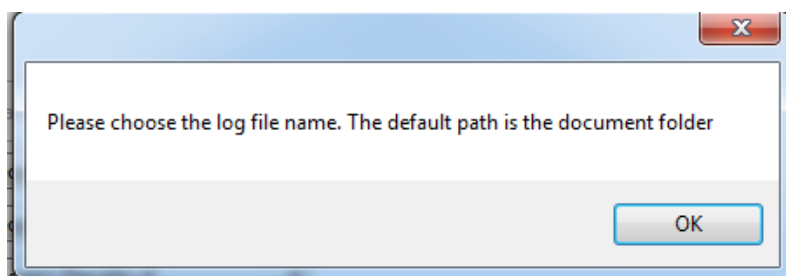
Automatic probing is one of the functional requirements of the IPV6 analyzer. To probe servers automatically select IPA1.0.exe to launch the software. Select the Probe list button on the IPV6 analyzer and you'll be presented with the default location of servers to probe. C:\Program Files\Default Company Name\IPv6 Performance Analyzer

Select the test.txt file and chose open to begin the probing of listed servers. The user may also specify the text file that contains the list of servers. The server names are required to be separated by carrier return on the keyboard like following:

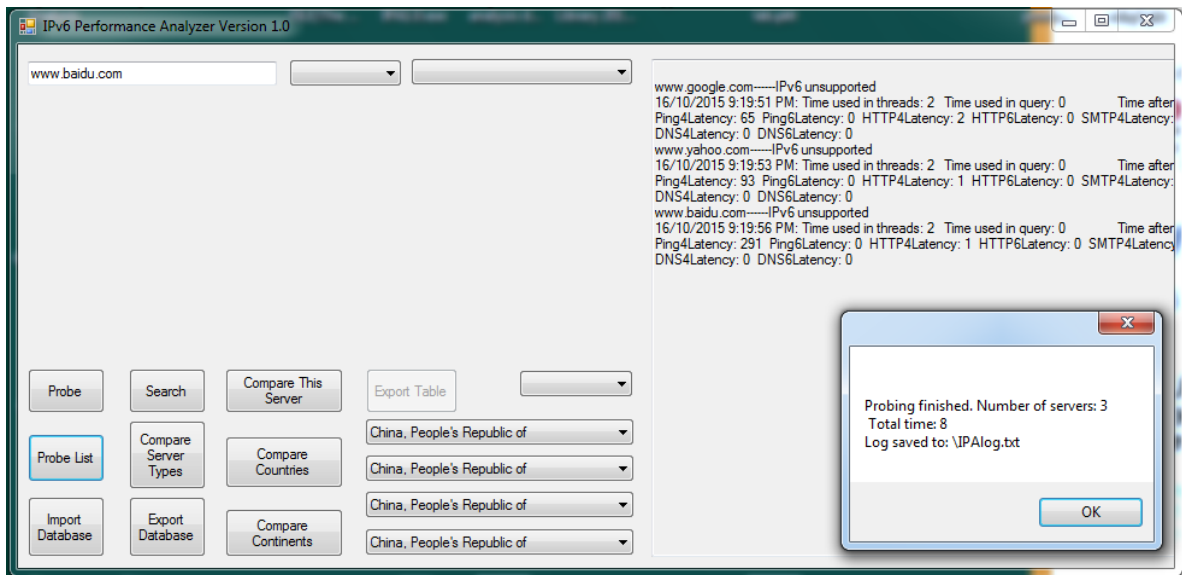
www.google.com  
www.yahoo.com  
www.baidu.com



A dialogue will pop up. Upon clicking on “OK”, select or create a text file for the log file. If no file is specified, the log file will be in the Document folder in C: drive by default. For some systems it may also be in the C: root directory.



Once Log file is specified, it will always be the same until the program is restarted.  
Click ok and probing begins



When the probing completes the analyzer shows you the location of the logs; click ok and navigate to the logs. On this machine the location is the local drive C:\ In this example the details of the logs are below

```
www.google.com-----IPv6 unsupported
16/10/2015 9:19:51 PM: Ping4Latency: 65 Ping6Latency: 0 : HTTP4Latency: 2 HTTP6Latency: 0 SMTP4Latency: 0 SMTP6Latency: 0 DNS4Latency: 0 DNS6Latency: 0
www.yahoo.com-----IPv6 unsupported
16/10/2015 9:19:53 PM: Ping4Latency: 93 Ping6Latency: 0 : HTTP4Latency: 1 HTTP6Latency: 0 SMTP4Latency: 0 SMTP6Latency: 0 DNS4Latency: 0 DNS6Latency: 0
www.baidu.com-----IPv6 unsupported
16/10/2015 9:19:56 PM: Ping4Latency: 291 Ping6Latency: 0 : HTTP4Latency: 1 HTTP6Latency: 0 SMTP4Latency: 0 SMTP6Latency: 0 DNS4Latency: 0 DNS6Latency: 0
```

A checkbox named “Fast” enables the probing timeout to be one second if it is checked. In this case the probing speed will increase significantly. However the result may not be accurate.

### 5.2.3 Auto Probing

The user can also start the program using command line. In Windows, open CMD and navigate to the application’s folder. There are several options for the user to use:

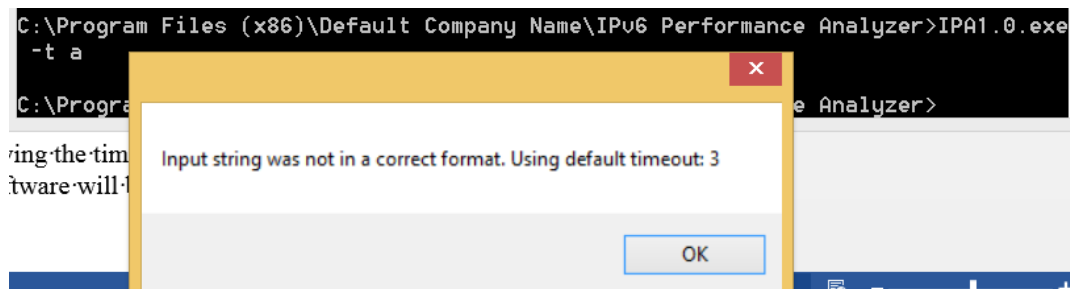
Sign	Parameter Following	Example
-l	Location of log file	“D:\Log.txt”
-f	Location of the list of servers	“D:\List.txt”
-t	Timeout value for probing with a unit of second	5

The order of the parameters does not matter. It is also unnecessary to have all three parameters. Example of usage is:

```
C:\Program Files (x86)\Default Company Name\IPv6 Performance Analyzer>IPA1.0.exe  
-t 2 -l "D:\IT Project\log.txt" -f "D:\IT Project\test.txt"  
C:\Program Files (x86)\Default Company Name\IPv6 Performance Analyzer>
```

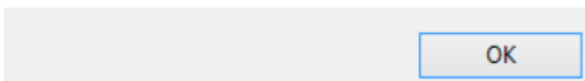
This will probe the “D:\IT Project\test.txt” file by specifying the timeout for probing to 2 seconds and the log will be saved to “D:\IT Project\log.txt”. After completion the software will be terminated automatically in 5 seconds.

If the user inputs wrong timeout accidentally, the software will detect it and use default value to probe.



If no list is specified like the above, the software will prompt an error and do nothing but starting the main window only:

Object reference not set to an instance of an object.



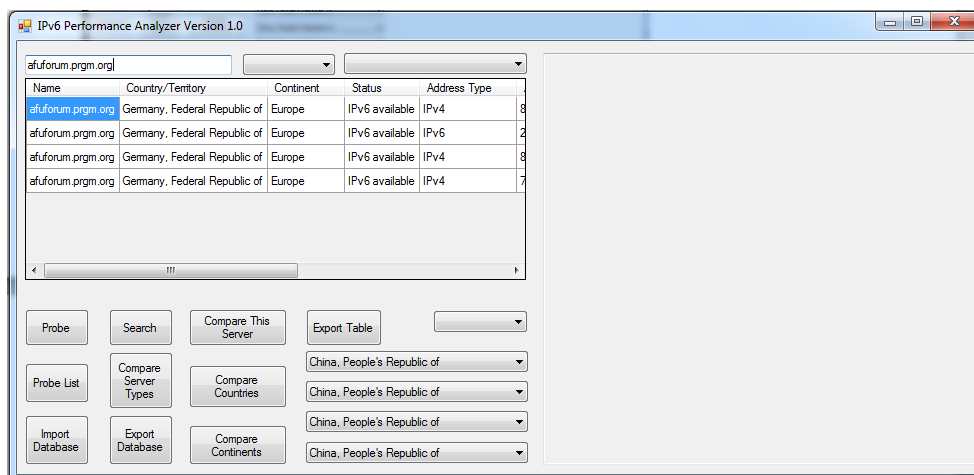
## 5.2.4 Stop Probing

When the probing is in progress, the user can click on “Stop Probing” to stop the probing at once. This button can be used in all three kinds of probing process including single probing, list probing and auto probing. If clicked in auto probing, the program will stopping probing and remain itself without exiting.

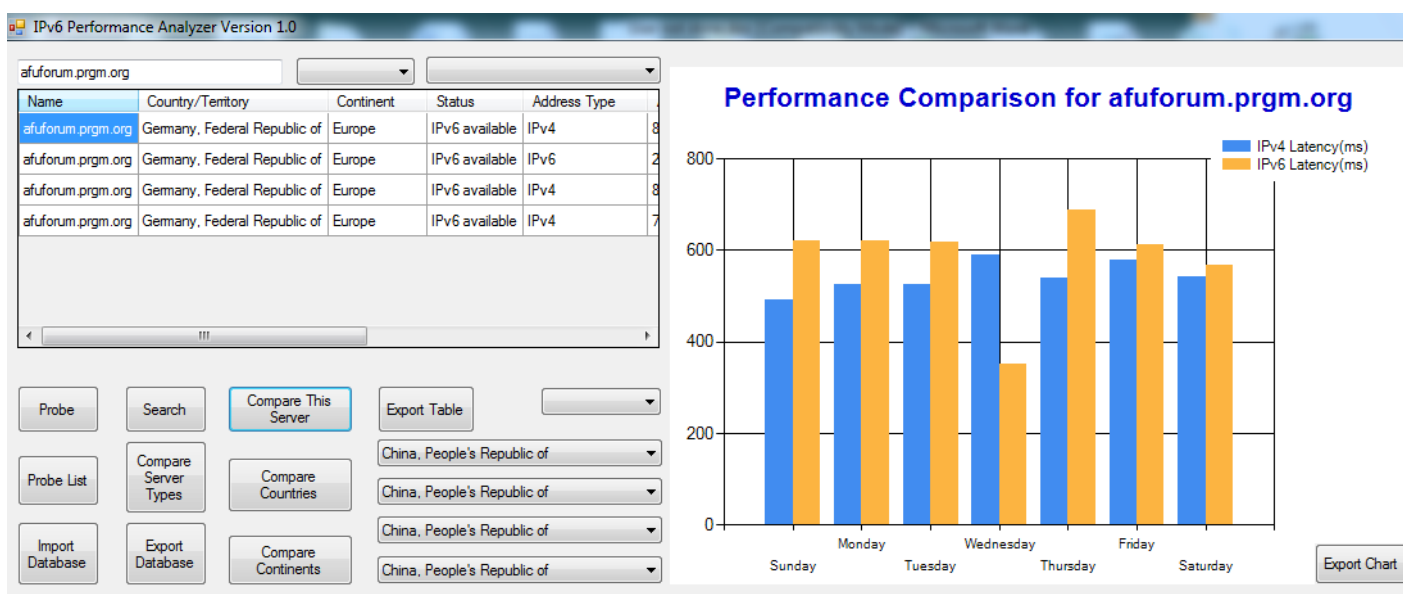
## 5.3 Compare Single Server

In this example we are going to search for a website from Germany. Copy the Universal Resource Locator (URL) of the website and paste it into the search bar. In this example the URL is [afuforum.prg.org](http://afuforum.prg.org)



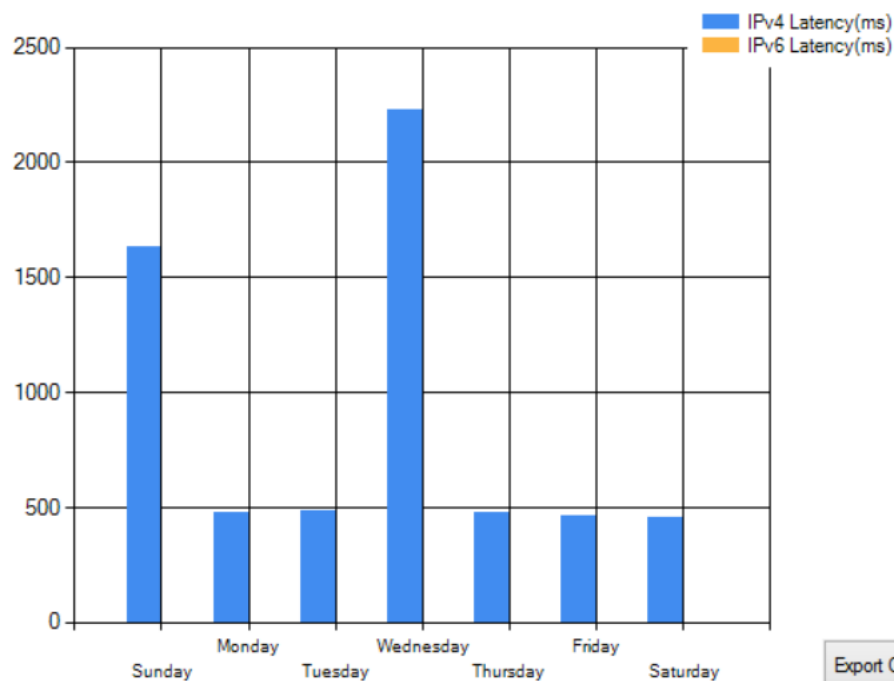


After pasting the URL select the “Compare This Server” button to display the latency comparison between IPV6 and IPV4 over a week.



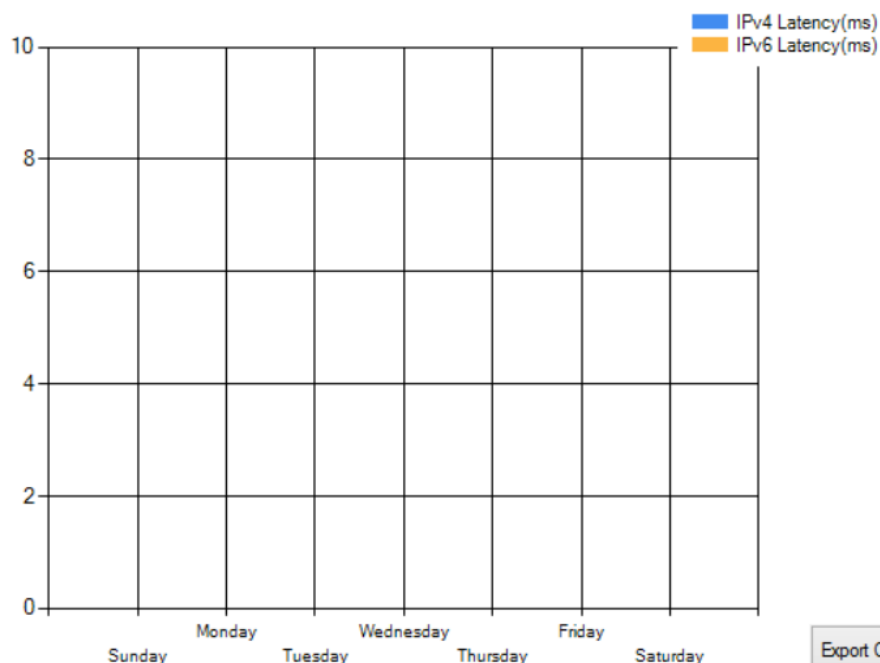
The chart on the right side shows the comparison of the performance of this server over the whole week. The blue bar shows the latencies of the server when using IPv4 address to probe it and the orange bar shows those when using IPv6 address to probe it. The ordinate is the value of the latency with the unit Millisecond. If a server has neither IPv4 nor IPv6 latency on a weekday, it means the server doesn't have the test record inside the database. If a server only has blue bars, it means it can't be reached using IPv6 address like following:

## Performance Comparison for amazon.co.uk



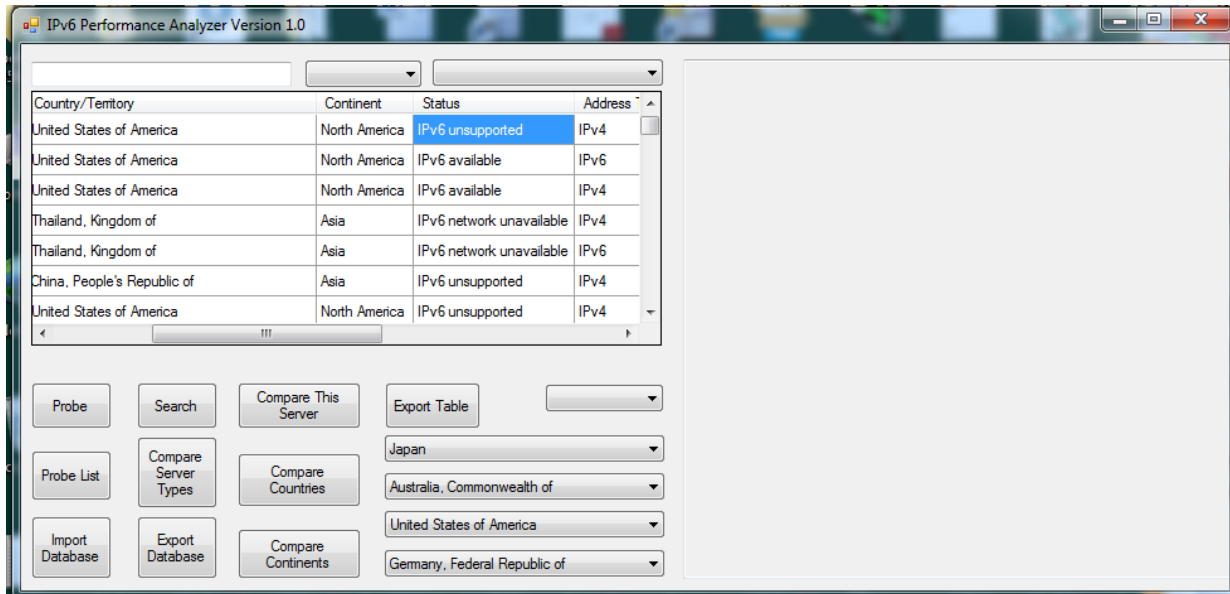
The result matches its status “IPv6 unsupported”. If a server only has orange bars, it means it can only be reached on that day. If a server can’t be reached by either IPv4 address or IPv6 address, a manual test record will be inserted with an extremely high latency of 4000 ms. However it will display nothing when the button is clicked for latency associated with the server’s IPv4 address or IPv6 address like following:

## Performance Comparison for wiki.paepstin.info

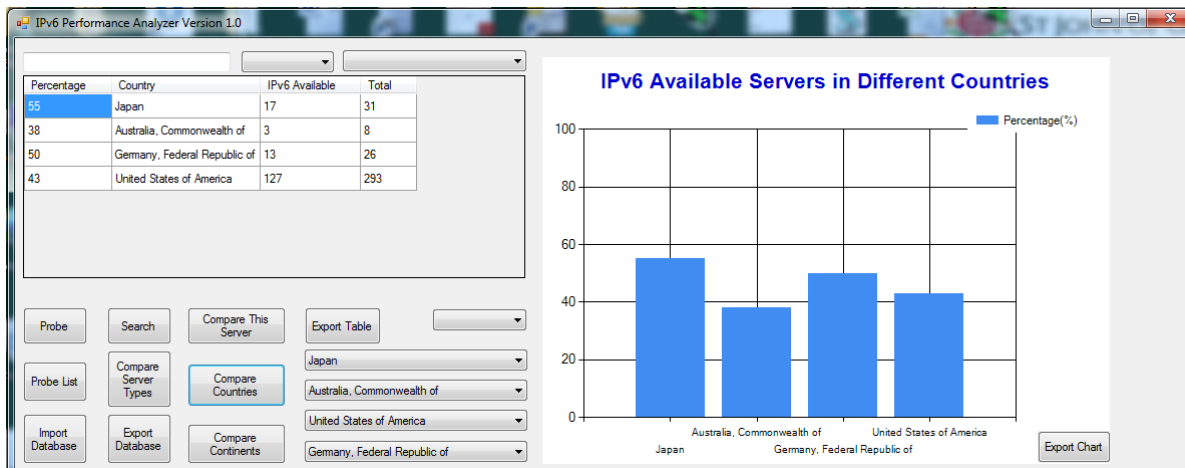


## 5.4 Compare Countries

This function allows you to compare the availability of ipv6 servers in different countries and continents. In the below example we are going to compare ipv6 availability from different countries within different continents. Select the various countries from the drop-down list and select compare countries. When clicking on the dropdown list, one can target the country quickly by typing the name of the country.



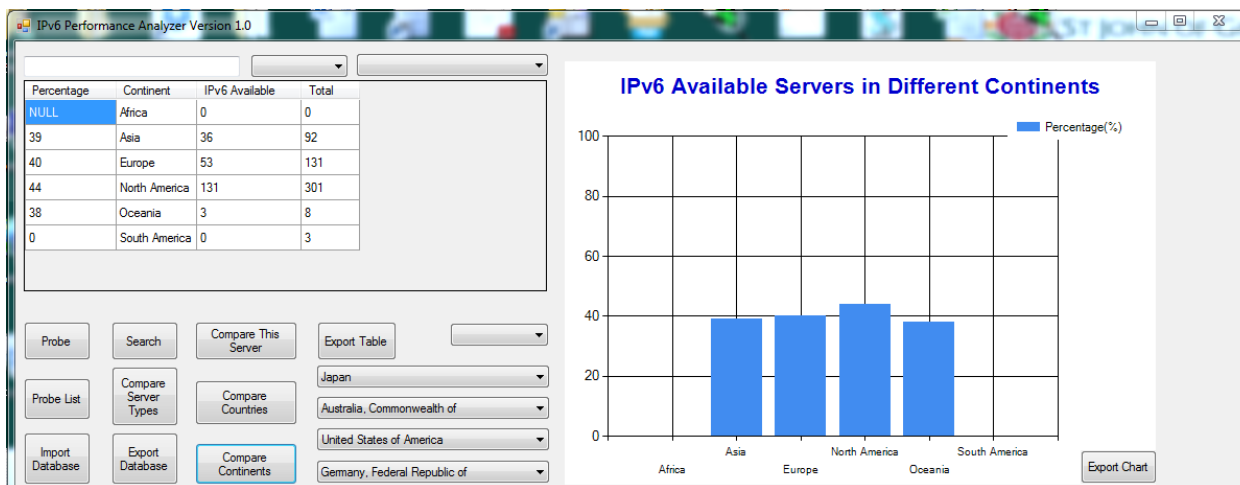
The analyzer outputs the total number of available ipv6 servers, their corresponding countries and the percentage at which those servers are ipv6 available. The table above shows the percentage, country, number of IPv6 available servers and total number of servers in the database for that country.



The dropdown list on the right side of the button “Export Table” can be used to choose the service using which these servers can be reached. The available options are: HTTP/SMTP/ICMP/DNS. Choosing any of them can limit the number of servers in the table. If leaving it blank, all types of servers will be taken into account for calculation.

## 5.5 Compare Continents

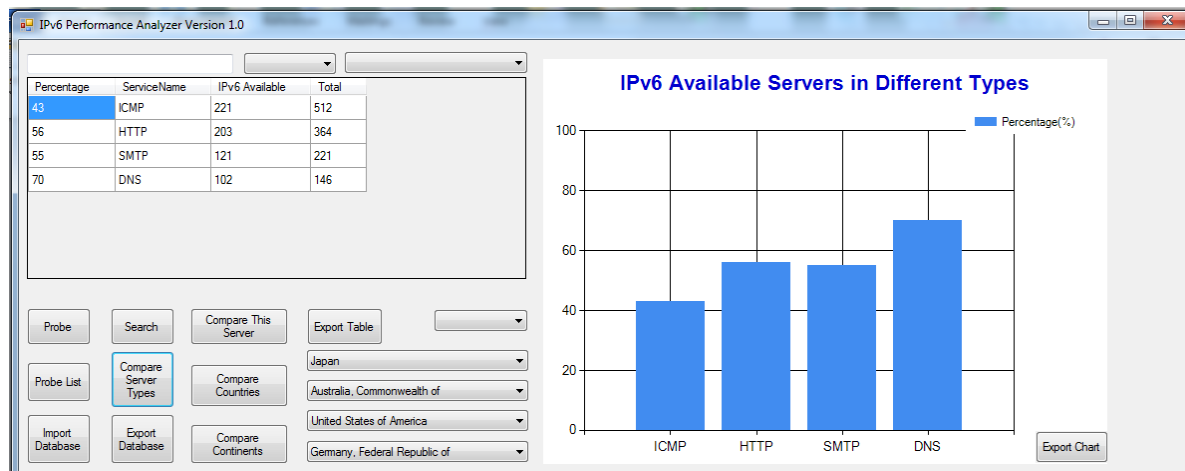
Following on from the previous example the compare continents function outputs the total number of ipv6 servers available in a particular continent, and the percentage at which those server are ipv6 available.



The dropdown list on the right side of the button “Export Table” can be used to choose the service using which these servers can be reached. The available options are: HTTP/SMTP/ICMP/DNS. Choosing any of them can limit the number of servers in the table. If leaving it blank, all types of servers will be taken into account for calculation.

## 5.6 Compare Server Types

By selecting the compare server types, it will show the percentage of IPv6 available servers for different kinds of services including ICMP, HTTP, SMTP and DNS. See the example below.



## 5.7 Export Tables

The above three “Compare” functions and the search function all support the export of tables. When a table is displayed, clicking on the “Export table” button will prompt the user to save the current table to a new file. The new file’s extension can be .txt or .csv and generally it has no restriction on this. Even if the user saves a file to be no extension, it can still be opened as csv format file like following:

The screenshot shows a Notepad window titled "2 - Notepad" containing a CSV file. The file contains a list of servers with their names, countries, continents, status, address types, and addresses. The data is as follows:

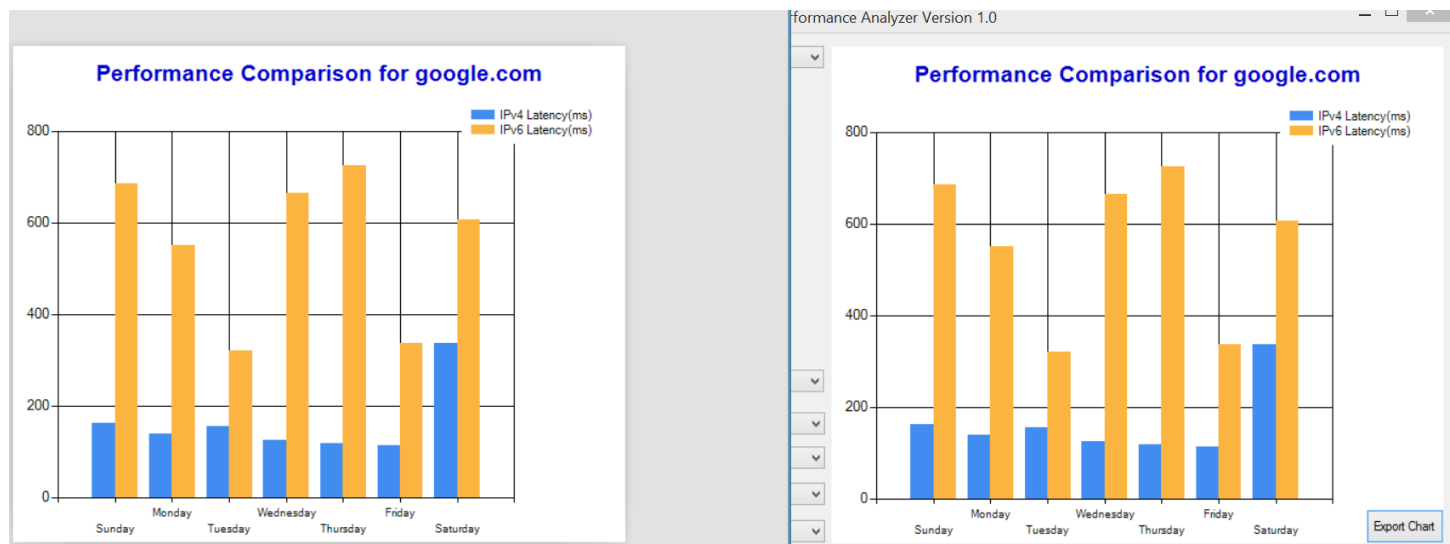
Name	Country/Territory	Continent	Status	Address Type	Address	HTTP	SMTP	DNS	ICMP
163.com	China, People's Republic of	Asia	IPv6 unsupported	IPv4	123.58.180.8	HTTP	NULL	NULL	NULL
200.79.192.3.static.cableonline.com.mx	United States of America	North America	IPv6 unsupported	IPv4	200.79.192.3	NULL	NULL	NULL	ICMP
360.cn	China, People's Republic of	Asia	IPv6 unsupported	IPv4	106.120.167.66	HTTP	NULL	NULL	ICMP
4-157-177-194.static.net4you.net	United States of America	North America	IPv6 unsupported	IPv4	194.177.157.4	NULL	NULL	NULL	ICMP
6.nixx.ca	United States of America	North America	IPv6 available	IPv6	2001:470:1:41::403e:ad06	HTTP	SMTP	NULL	ICMP
a.resolvers.level3.net	China, People's Republic of	Asia	IPv6 unsupported	IPv4	4.2.2.1	NULL	NULL	DNS	ICMP
acrylamide.btinternet.com	United States of America	North America	IPv6 unsupported	IPv4	194.73.73.173	NULL	NULL	NULL	ICMP
adcash.com	United States of America	North America	IPv6 unsupported	IPv4	104.154.36.143	HTTP	NULL	NULL	ICMP
adobe.com	United States of America	North America	IPv6 unsupported	IPv4	192.150.16.117	HTTP	NULL	NULL	ICMP
alibaba.com	United States of America	North America	IPv6 unsupported	IPv4	198.11.132.23	HTTP	NULL	NULL	ICMP
aliexpress.com	United States of America	North America	IPv6 unsupported	IPv4	205.204.101.160	HTTP	NULL	NULL	ICMP
amazon.co.jp	United States of America	North America	IPv6 unsupported	IPv4	54.240.252.0	HTTP	SMTP	NULL	NULL
amazon.co.uk	Ireland	Europe	IPv6 unsupported	IPv4	178.236.7.220	HTTP	SMTP	NULL	ICMP
amazon.com	United States of America	North America	IPv6 unsupported	IPv4	176.32.98.166	HTTP	NULL	NULL	ICMP
amazon.de	Ireland	Europe	IPv6 unsupported	IPv4	176.32.108.185	HTTP	SMTP	NULL	NULL

The above file has no extension but can be opened in Notepad.

## 5.8 Export Charts

Similar to table export, charts can be exported for the above four “Compare” functions but not for the search function. The exported chart can have an extension of any from .png/.gif/.bmp/.jpeg/.jpg and .emf. The former extensions can be recognized in any common picture editor software such as Paint but they will lose the detail once they are enlarged. The .emf file is not common but it stores the detail of the picture which won’t be vague even if enlarged to a high level. It also allows the user to save the file using any extension. The intrinsic format is .png unless .emf is specified.

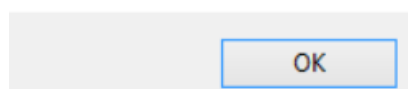
The following exports the chart as .png file:



## 4.6 Import/Export Database

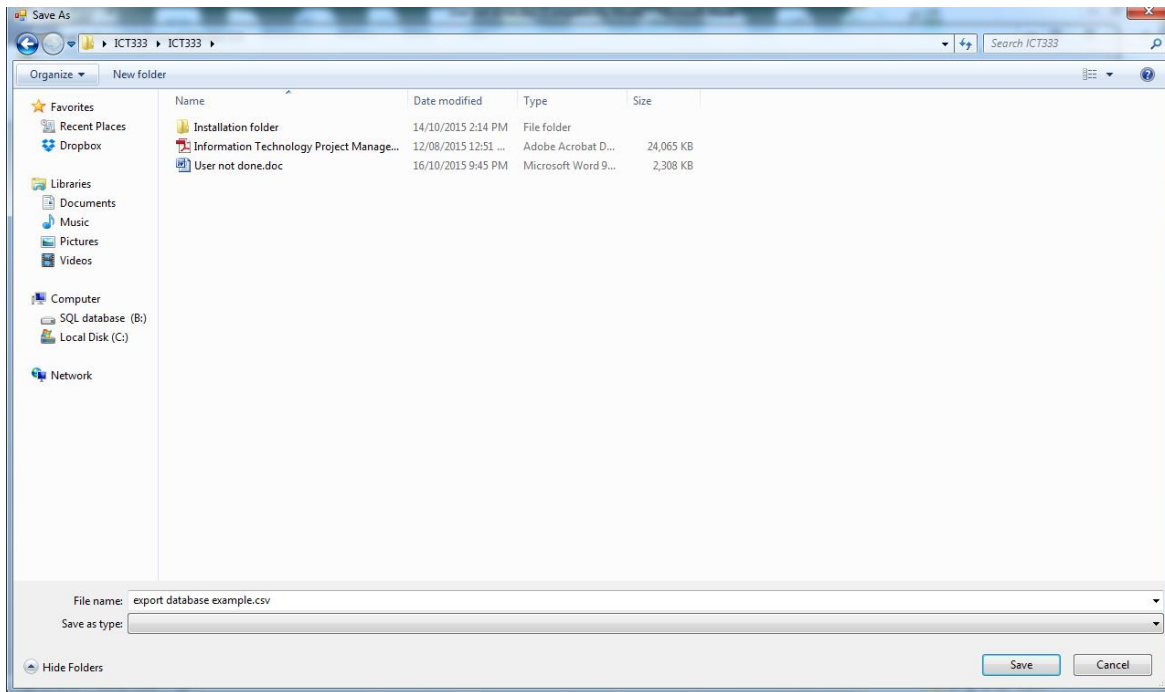
To import database, select the “Import database” button and select the database file the user would like to import. The database file must have an extension of .sql. If the user chooses a wrong file the software will pop up a warning and do nothing like following:

Please save to a database file

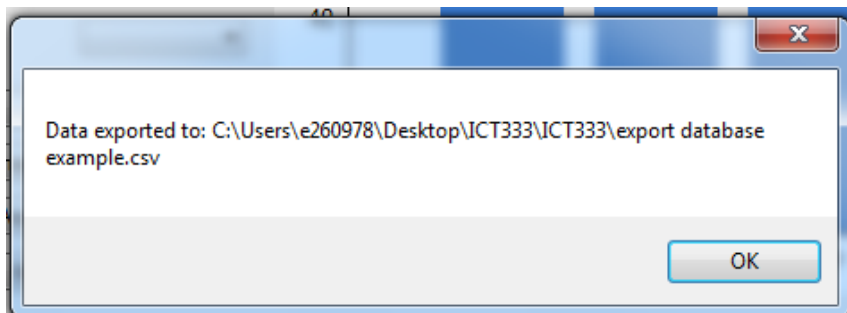


Upon choosing a .sql file the database will be imported.

To export the database, select the “Export database” button and the software will prompt you to save the database to a location of your choice. Select a location of your choice and save the database as a sql format. Similar warning will pop up if the user saves the database to a file not with .sql extension.



Upon saving the database, the software will prompt you that the database has been successfully exported to your designated location. Select OK.



---

## 6.0 FREQUENTLY ASKED QUESTIONS

***Q: My antivirus software alarms that the program is a virus. Is it dangerous?***

**A:** The author guarantees the software does not contain any malicious code that may endanger the user's system. These are just false alarms.

***Q: Would this software work without the IPv6 connectivity?***

**A:** All functions are still normal except when probing the status of the servers will become IPv6 unsupported because their names cannot be resolved using IPv6 DNS servers.

***Q: Can we use any tunnel broker or software which can help us to connect with IPv6 connectivity?***

**A:** Yes. The latency depends on the types of tunnel broker you used.

***Q: Do we need to turn off our Antivirus software if connectivity issues occur (or if we are unable to connect) or is it best to turn it off?***

**A:** You don't need to turn off the antivirus software to use the program. Some antivirus software alarm that the program is a virus wrongly. It is safe to add the program into white list in this case.

***Q: Does the software require special permissions to systems folder? If so, would it alter any registry files?***

**A:** The software doesn't require special permissions to the system folder or the application folder. It doesn't write anything to the system registry either.

***Q: Where is the log file it produces after probing?***

**A:** The default path of the log file is named "IPALog.txt" under the user's Document folder in C: drive. In some Windows versions it also may be in the root directory under C: drive. The location of the log file can be changed using command line in auto probing or manually by specifying the file in list probing.

***Q: Can I delete the "IPA1.0.cfg" file?***

**A:** It can be deleted when the software is not running. When the software starts it will still create the IPA1.0.cfg file and deleting it when running the software will cause the software malfunctioning.



---

***Q: Does the IPV6 performance analyser work even if they is no network connectivity***

**A:** The representation functions will still work as long as database server is running and connected. The probing functions will not work.

***Q: Do the users have to update the IPV6 performance analyser?***

**A:** Future version of the software can be released later according to the feedbacks from the users.

***Q: What do I need to know that will help me troubleshoot the ipv6 performance analyser in case I face challenges?***

**A:** Please contact the developer Man Fu Lei. His E-mail address is: [george10282006@hotmail.com](mailto:george10282006@hotmail.com) . The question will be replied in two days.

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## 7.0 INDEX

.NET framework 4.6, 3-1  
Auto Probing, 5-5  
Blue bars, 5-7  
BMP, 5-10  
C#, 1-1, 2-1  
Carrier return, 5-4  
CFG, 6-1  
CMD, 5-5  
Compare Continents, 5-9  
Compare Countries, 5-8  
Compare Server Types, 5-9  
Compare Single Server, 5-6  
Compare This Server, 5-6  
CSV, 5-2, 5-10  
Diagnosis function, 5-1  
DNS. *See* Domain Name Services  
Domain Name Services, 5-1  
EMF, 5-10  
Export Charts, 5-10  
Export Table, 5-9, 5-10  
Fast, 5-4, 5-5  
FREQUENTLY ASKED QUESTIONS, 6-1  
FUNCTIONS, 5-1  
GIF, 5-10  
HTTP. *See* Hyper Text Transfer Protocol  
Hyper Text Transfer Protocol, 5-1  
ICMP. *See* Internet Control Message Protocol  
Import/Export Database, 5-11  
INSTALLATION GUIDE, 3-1  
Internet Control Message Protocol, 5-1  
IPA1.0, 4-1, 5-4, 6-1  
IPv6 available, 5-1, 5-3, 5-8, 5-9  
IPv6 host unreachable, 5-2  
IPv6 network unreachable, 5-2  
IPv6 only, 5-2  
IPv6 performance analyzer, 1-1, 1-2, 2-1, 2-2  
IPv6 unsupported, 5-1, 5-4, 5-7, 6-1  
JPEG, 5-10  
JPG, 5-10  
List of servers, 5-4, 5-5  
List Probing, 5-4  
Log, 5-4, 5-5, 5-6, 6-1  
MySQL, 2-1  
NULL, 5-1  
Orange bars, 5-7  
PNG, 5-10  
Points of Contact, 1-2  
**Prerequisite, 3-1**  
Probing, 1-1, 5-3  
Search Function, 5-1  
Simple Mail Transfer Protocol, 5-1  
SMTP. *See* Simple Mail Transfer Protocol  
SQL, 4-2, 5-11  
Tunnel broker, 2-1  
**USING THE SOFTWARE SYSTEM, 3-1**  
XAMPP, 2-1, 3-2, 3-3, 3-4, 3-5, 3-6, 4-2  
xampp\_control.exe, 4-1  
xampp\_start.exe, 4-2

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**8.0 APPENDIX A -DELIVERABLE TASK BREAKDOWN STATEMENT**

**Deliverable Task Breakdown Statement**

**Deliverable Name: Installation and User Manual**

<b>Project Team Name</b>	<b>Team Number</b>
IT08 Ltd	IT08