

Open Visual Trace Route User Manual

VERSION 1.2

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Table of Contents

List of figures and tables	2
Introduction	3
Requirements	3
Required Hardware	3
Required Software	3
Functions	4
Traceroute	4
Whois	4
Installation.....	5
Download.....	5
Installation Steps	5
Using Traceroute.....	7
How to Use	7
Additional Options	8
Using Whois.....	9
How to Use	9
Additional Options	10
Conclusion	11
References	12

List of figures and tables

Figure 1 - Installation Wizard.....	5
Figure 2 - Popup to open the WinPcap wizard.....	5
Figure 3 - Popup when WinPcap is already installed.....	6
Figure 4 - The installation wizard for WinPcap.....	6
Figure 5 - Popup on successful install of WinPcap	6
Figure 6 - O.V.T.R successfully installed	6
Figure 7 - Using Traceroute	7
Figure 8 - A successful Traceroute.....	7
Figure 9 - Map with server locations.....	8
Figure 10 - List of servers.....	8
Figure 11 - Graph of latencies.....	8
Figure 12 - Traceroute Additional options buttons	8
Figure 13 - Using Whois.....	9
Figure 14 - Successful Whois	9
Figure 15 - Whois Additional options buttons	10

Introduction

This user manual is for the IT support department. It details how to install Open Visual Trace Route, as well as its main functions.

O.V.T.R¹. is a software application designed to give a visualization of networking functions, such as traceroute and whois. It is free and open source, and works across a variety of platforms, including the three major ones: Windows, MacOS X, and Ubuntu.

Requirements

There are some requirements a computer needs to meet before you can download and install this software.

Required Hardware

- 40.3 MB of free disk space.
- Network capable device to function.
- Graphics card that supports OpenGL² features for 3D map rendering.

Required Software

- Java 8.1 or higher
 - Download and install this from the Oracle website.
 - <https://www.java.com/en/download/>
- WinPcap
 - The O.V.T.R. installer will also install this if it is not on the computer.
 - If WinPcap is already installed, you will need to cancel its installation during the O.V.T.R. installation.

¹ Open Visual Trace Route

² OpenGL is something the computer uses to draw 3D objects. It is not strictly necessary for this software, but it will be limited to 2D maps without it.

Functions

There are a number of different features available on O.V.T.R:

- Traceroute
 - This feature allows a person to track on a map where their packet³ goes before it reaches its intended destination.
- Sniffer
 - This feature “sniffs”, or captures and reads all the packets that travel through the network.
- Whois
 - This feature finds any publicly available information about a website domain⁴.
- 3D/2D visualization
 - The application can display a map in either a 2D or 3D map.

Traceroute

The Traceroute feature of this application maps out the physical location of the servers a packet visits.

It is similar in function to the Traceroute command, which is a network command used to find out where a data packet goes before it reaches its intended destination. When used in Command prompt, it tracks the servers the packet goes through, but not their physical location.

This application uses the server information to find their physical location, and then maps that to either a 3D or 2D map. It also gives the IP address, hostname and latency of the server.

Whois

This feature queries public databases for information about the domain you search. This information could be who owns the domain, the range of IP addresses of the network, or even other information about the company, like their address or contact details.

Not every website will have all this information, or any information at all. It will only work for domains owned by those that release that public information, which would typically be larger companies.

³ A packet is the packaging on data that is sent through a network. It says where the data is from, where it's going, and other information about the data. (Christensson, Packet Definition, 2018)

⁴ Domain refers to the unique name that identifies a website. It should have a domain suffix like .com, .net or .org at the end. For example, google.com is the domain name for Google. (Christensson, Domain Name Definition, 2012)

Installation

The software can be installed on a variety of Operating Systems. This includes the most popular systems like Windows and Mac OSX, but it can also be installed on Linux Debian (Ubuntu, Mint), Linux RPM (Redhap, OpenSUSE) and even a portable version that doesn't require installation.

All computers at this company use Windows, so this guide will be tailored for that.

Download

The installation file can be found at:

<https://sourceforge.net/projects/openvisualtrace/files/latest/download>

The download should automatically begin.

Installation Steps

1. Open the installation file to begin installing the software. It will open an installation wizard (Fig.1).
2. Click on "Next" to go to the next screen.
3. Accept the license agreement by selecting the "I accept the agreement" option, then go to the next screen.
4. Choose the location to install the software. It is recommended to keep the default location.
5. Choose which start menu folder you want to put the shortcut to access the software in. It is recommended to keep the default location.
6. Check the box if you want to have an easy to access icon on your desktop to open this software. It is recommended you do this.
7. Click "Install" to begin the installation process.
8. This popup will appear if you don't have WinPcap installed (Fig.2). Click Ok to open the WinPcap wizard. If you already have WinPcap installed, another popup will appear (Fig.3). Cancel the wizard and go to step 12.
9. An installation wizard for WinPcap should open (Fig.4).

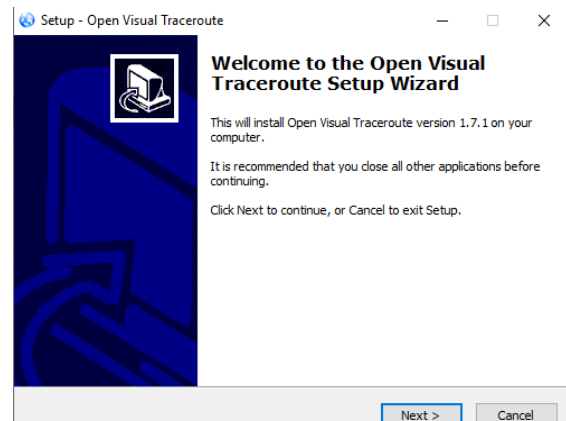


Figure 1 - Installation Wizard

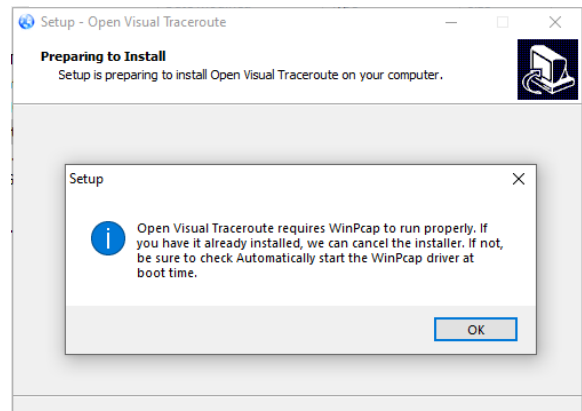


Figure 2 - Popup to open the WinPcap wizard

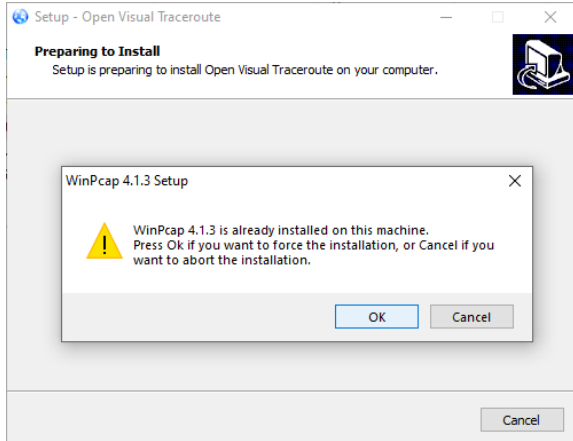


Figure 3 - Popup when WinPcap is already installed

10. Click on I Agree to agree to the license agreement.
11. Leave the box checked to automatically start WinPcap when you turn on the computer. Click "Install" to install it.
12. Go back to the Open Visual Traceroute installation wizard and click "Ok" (Fig.5).
13. The software will finish installing and will open when "Finish" is clicked (Fig.6).

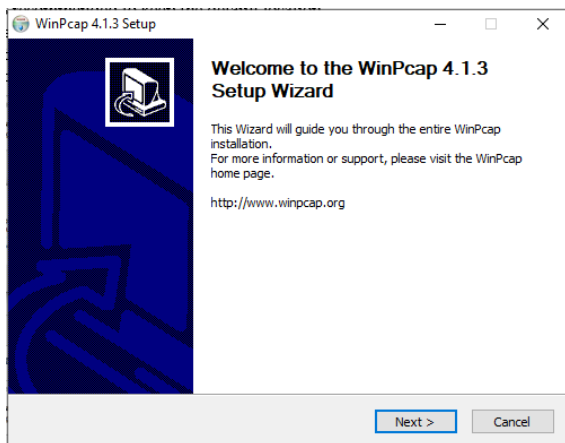


Figure 4 - The installation wizard for WinPcap

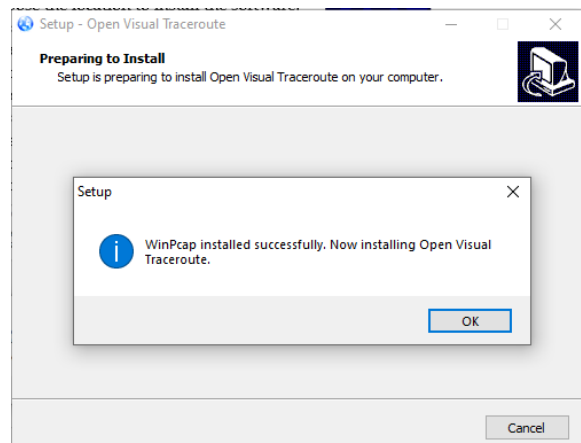


Figure 5 - Popup on successful install of WinPcap

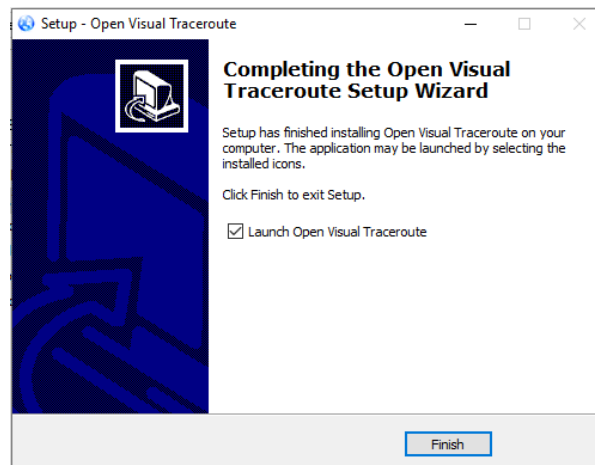


Figure 6 - O.V.T.R successfully installed

Using Traceroute

How to Use

The Traceroute feature can be accessed by selecting the “Traceroute” tab. You can also toggle whether you want to show the hostnames of the servers you visit or not. Showing the hostnames may take more time. Then you type in the domain you are sending a packet to and press enter to begin the process. If you set a timeout, it will stop running when it reaches the time you have set. All this can be found at the top of the application (Fig.7).

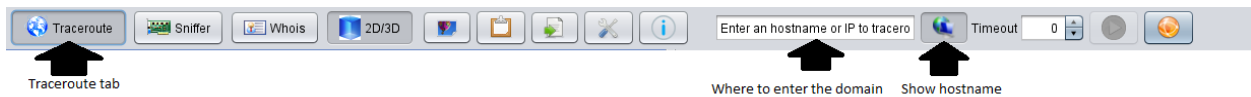


Figure 7 – Using Traceroute

A successful Traceroute should look something like this (Fig.8).

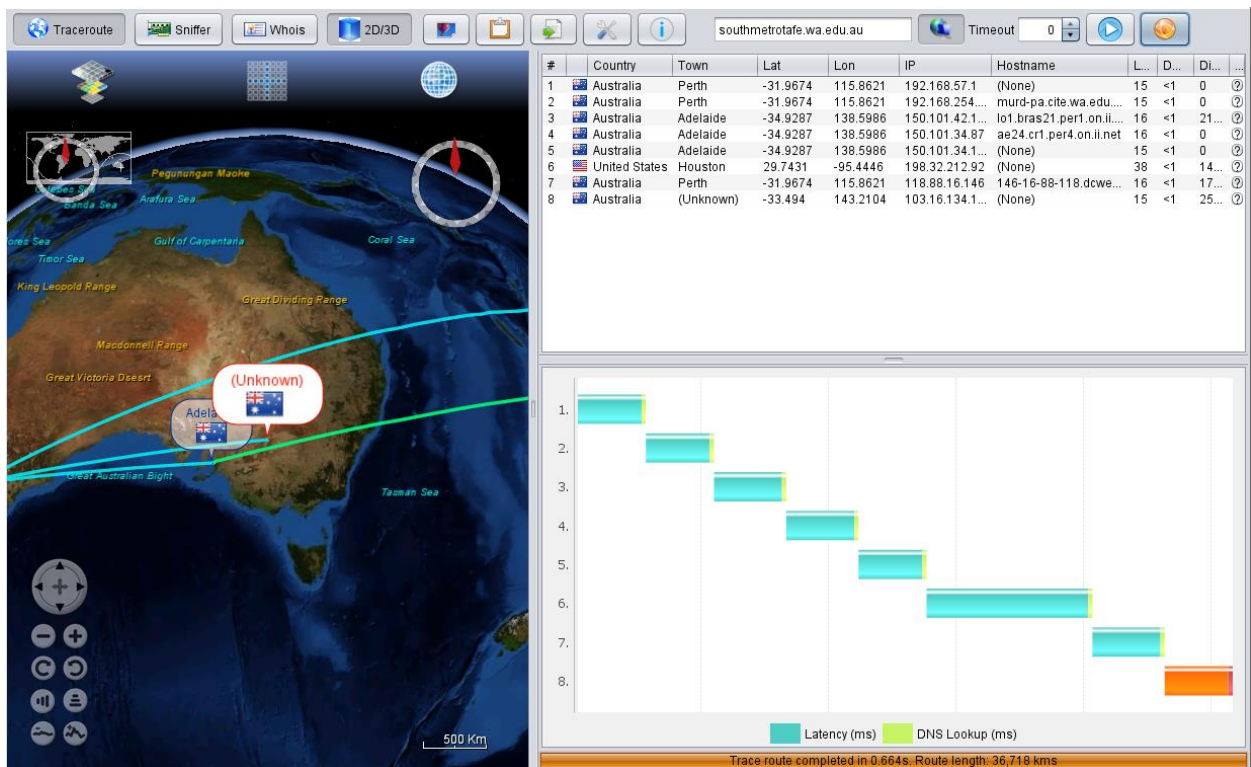


Figure 8 - A successful Traceroute

On the left of the screen will be a map of the world, with the locations of the servers shown on it (Fig.9). You can click and drag in that section to move the map around and see different parts of the map. Use your scroll wheel on your mouse to zoom in and out of the map. Alternatively, you can use the buttons at the bottom left to navigate the map.

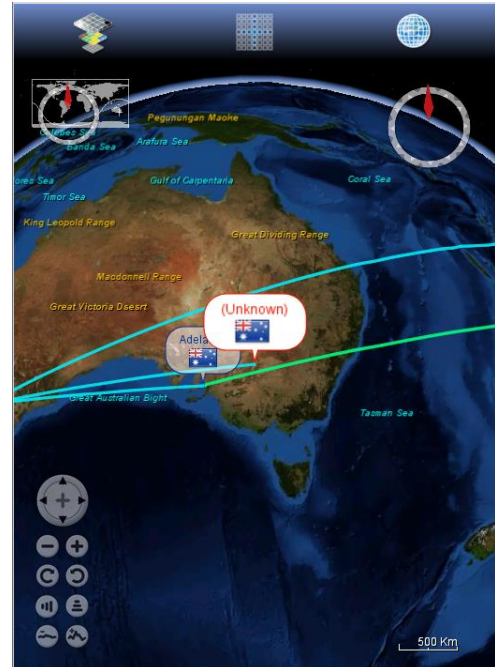


Figure 9 - Map with server locations

At the top half to the right side will be the list of servers that your packet visited (Fig.10). You can find out lots of information about that particular server here, including the name of its location, its coordinates, and even its IP address.

Below that is a graph of latencies (Fig.11). It shows how much time it took to travel from one server to another. This is in blue. It also shows in green the time it took to find information about the server (DNS lookup), which usually takes longer.

#	Country	Town	Lat	Lon	IP	Hostname	L...	D...	DI...
1	Australia	Perth	-31.9674	115.8621	192.168.57.1	(None)	15	<1	0
2	Australia	Perth	-31.9674	115.8621	192.168.254...	murd-pa.cite.wa.edu...	15	<1	0
3	Australia	Adelaide	-34.9287	138.5986	150.101.42.1...	lo1.bras21.per1.on.ii...	16	<1	21...
4	Australia	Adelaide	-34.9287	138.5986	150.101.34.87	ae24.cri.per4.on.ii.net	16	<1	0
5	Australia	Adelaide	-34.9287	138.5986	150.101.34.1...	(None)	15	<1	0
6	United States	Houston	29.7431	-95.4446	198.32.212.92	(None)	38	<1	14...
7	Australia	Perth	-31.9674	115.8621	118.88.16.146	146-16-88-118.dowe...	16	<1	17...
8	Australia	(Unknown)	-33.494	143.2104	103.16.134.1...	(None)	15	<1	25...

Figure 10 - List of servers

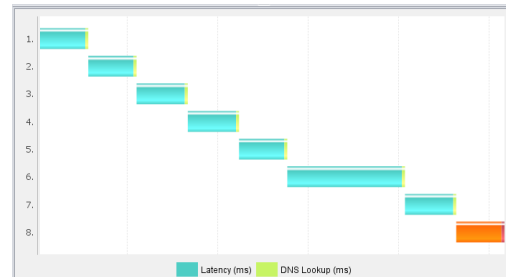


Figure 11 - Graph of latencies

Additional Options

The Screenshot button can be used to take an image of the application screen. It will prompt you to name and save it at a location of your choice. The button can be found at the top of the application (Fig.12).

The Copy data will copy all the server information from the list of servers (Fig.10). It works similarly to when you use Ctrl-C, you can use Ctrl-V to paste that info where you want. It is next to the Screenshot button at the top of the screen (Fig.12).

The Export button will save the server list info as a CSV file. It will prompt you to name the CSV file and let you choose where to save it. It can be found that the top section with the other buttons (Fig.12).

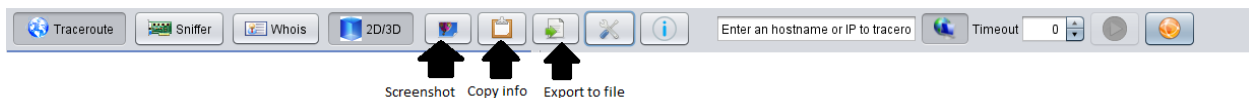


Figure 12 - Traceroute Additional options buttons

Using Whois

How to Use

The Whois feature can be accessed by selecting the “Whois” tab at the top of the screen (Fig.13). You type in the domain name you wish to find info about, and then press enter or click the Search button.



Figure 13 - Using Whois

A successful Whois should look like this (Fig.14).

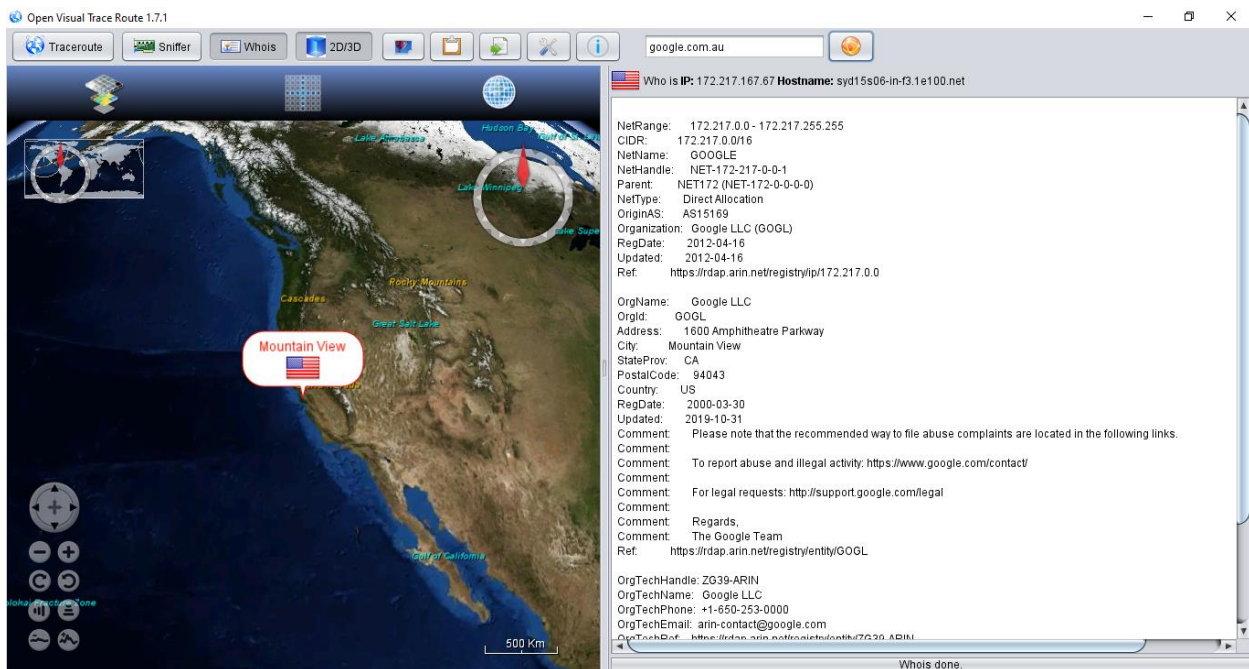


Figure 14 - Successful Whois

If no information appears, the domain may not have any information publicly available.

The left side of the screen shows a map with the location of the server. You can click and drag in that section to move the map around and see different parts of the map. Use your scroll wheel on your mouse to zoom in and out of the map. Alternatively, you can use the buttons at the bottom left to navigate the map.

The right side of the screen will show the information that has been found. This can include the network’s IP address range, owner name and address, and contact information.

Additional Options

The Screenshot button can be used to take an image of the application screen. It will prompt you to name and save it at a location of your choice. The button can be found at the top of the application (Fig.15).

The Copy data will copy all the information that was found. It works similarly to when you use Ctrl-C, you can use Ctrl-V to paste that info where you want. It is next to the Screenshot button at the top of the screen (Fig.15).

The Export button will save the information as a CSV file. It will prompt you to name the CSV file and let you choose where to save it. It can be found that the top section with the other buttons (Fig.15).

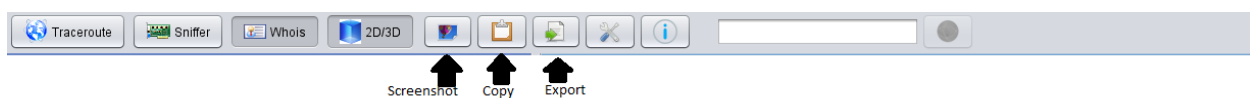


Figure 15 - Whois Additional options buttons

Conclusion

This manual should have given you a good idea of what O.V.T.R. can be used for and how to use its various functions. The application is particularly useful for displaying information in a visual way but the other functions it provides shouldn't be underappreciated either. They are all useful in their own way. You will most likely find yourself with problems, as an IT support member, which can be solved with this application.

References

Christensson, P. (2012, September 14). *Domain Name Definition*. Retrieved Nov 11, 2019, from TechTerms: https://techterms.com/definition/domain_name

Christensson, P. (2018, May 31). *Packet Definition*. Retrieved Nov 11, 2019, from TechTerms: <https://techterms.com/definition/packet>