

How to capture network communication using Wireshark (Network Protocol Analyzer)

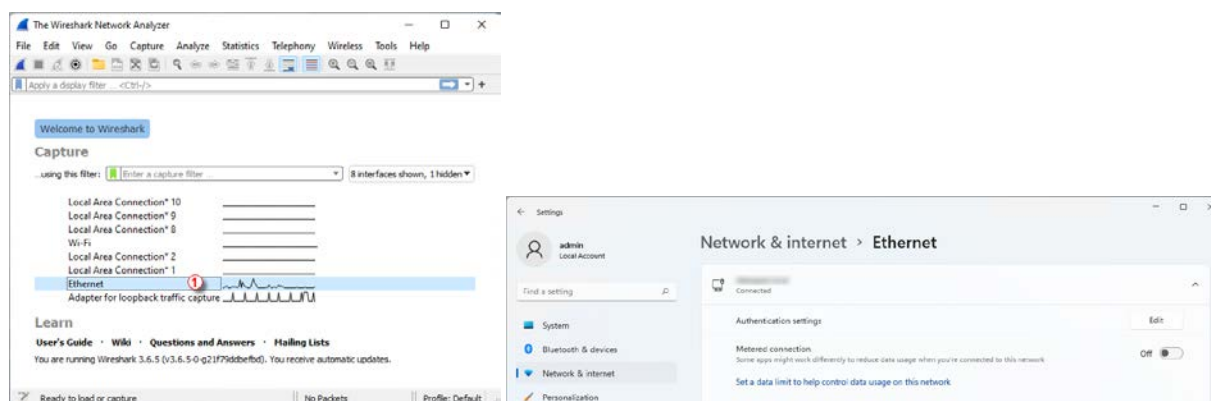
Introduction

In case there is a demand for inspection of network communication between PC and the device it is possible to record this communication using Wireshark software. Wireshark software is capable to capture various communication traffic running on a computer network no matter if communication is performed via cable (LAN) or wireless (Wi-Fi).

Procedure of Wireshark installation and use.

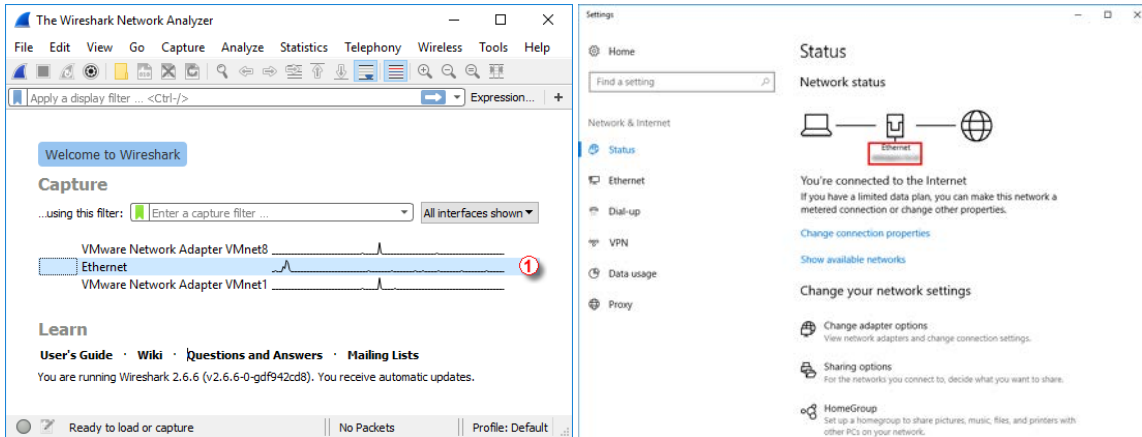
1. Download Wireshark software installer from Wireshark Download section (<https://www.wireshark.org/index.html#download>). You need to select 32-bit or 64-bit installer version in accordance with Windows version used (32-bit or 64-bit)
2. Install Wireshark software. During installation procedure default parameters proposed by the installer should be followed. Just for your reference you can check with Screen-by-Screen images of the installation procedure, which might be downloaded from following link (<https://downloads.dataapex.com/documentation/clarity/other/Wireshark-Installation-Screen-by-Screen.zip>). Detailed help for installation of Wireshark software is also available online (https://www.wireshark.org/docs/wsug_html_chunked/ChBuildInstallWinInstall.html).
3. Start Wireshark software.
4. The initial window provides list of available networks. It is necessary to select the respective network to which device of interest is connected to.
 - Windows 11

The device of interest is connected to PC using network called *Ethernet* (LAN network). Name of network can be found in 'Network & Internet Settings > Ethernet' dialog.



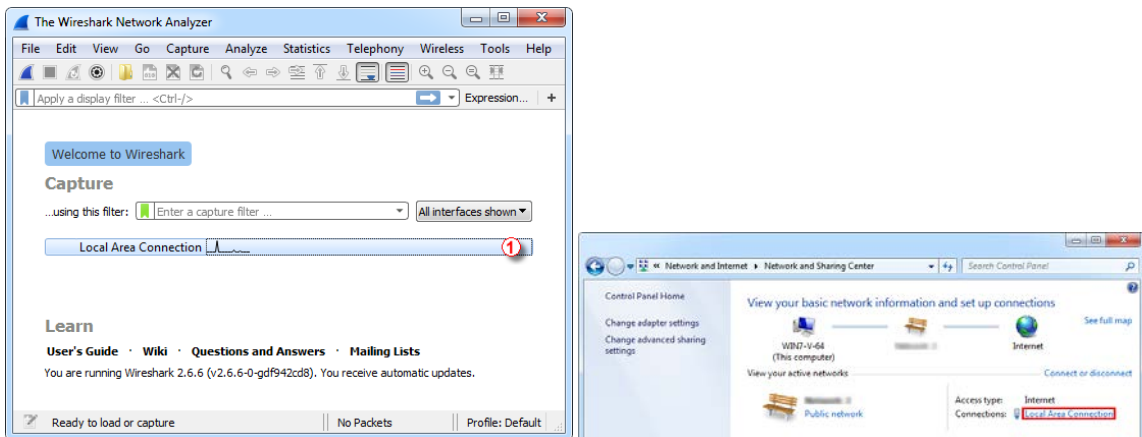
- Windows 10

The device of interest is connected to PC using network called *Ethernet* (LAN network). Name of network can be found in 'Network & Internet Settings' dialog.



- Windows 7

The device of interest is connected to PC using network called *Local Area Connection* (LAN network). Name of network can be found in 'Network and Sharing Center' dialog.

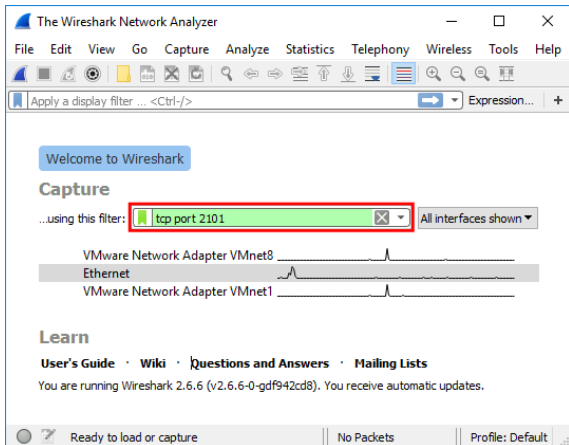


5. In case the device is connected using Wi-Fi network it is necessary to select correct Wi-Fi network in the list of networks.

6. Fill in necessary information into '*...using this filter:*' item.

Here needs to be specified what kind of communication traffic should be recorded.

For case of recording of communication traffic with device connected via LAN is necessary to insert command **tcp port** and *port number*.

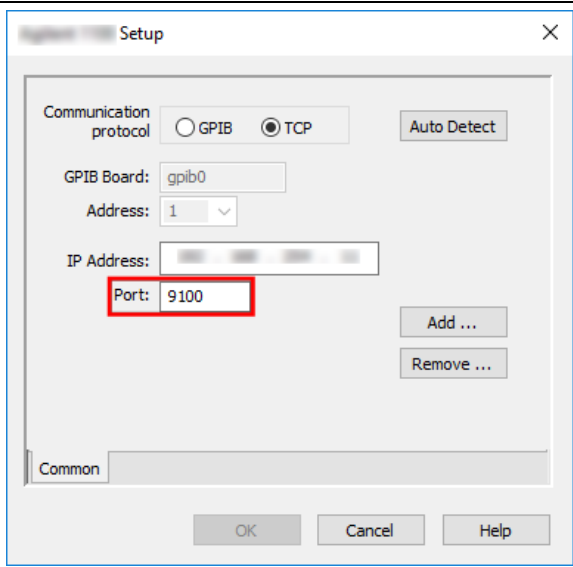


The *Port number* value can be typically found in device Setup dialog accessible under 'Setup...' button in the System Configuration, on the bottom of the dialog

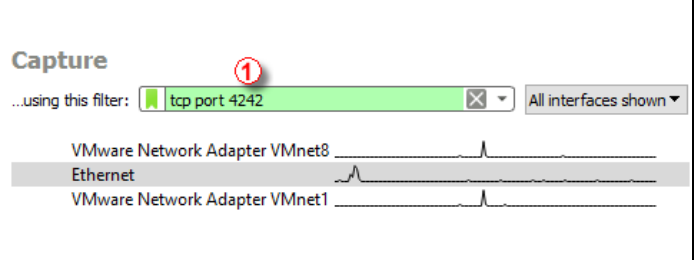
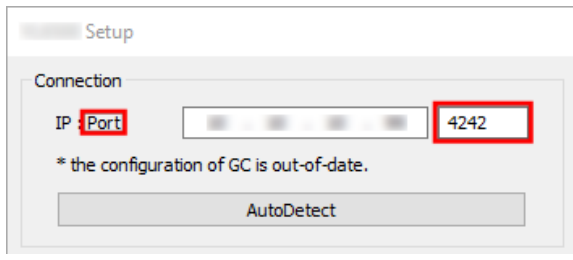
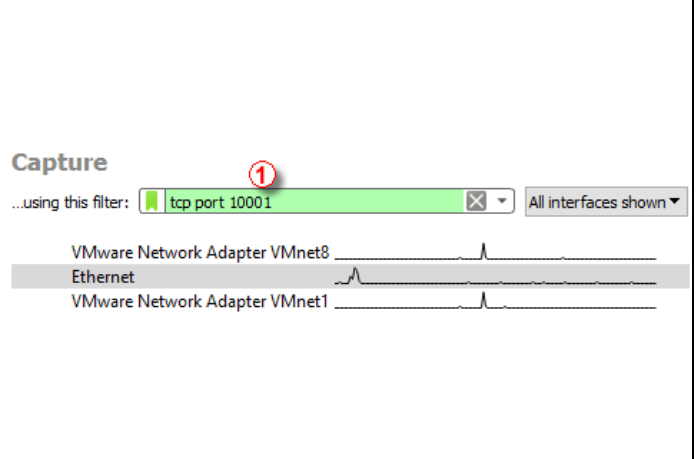
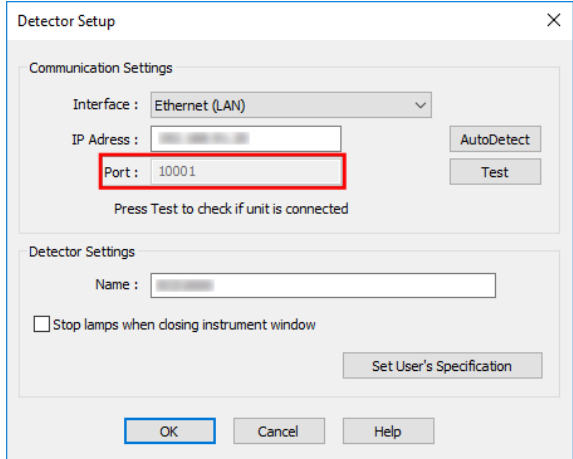
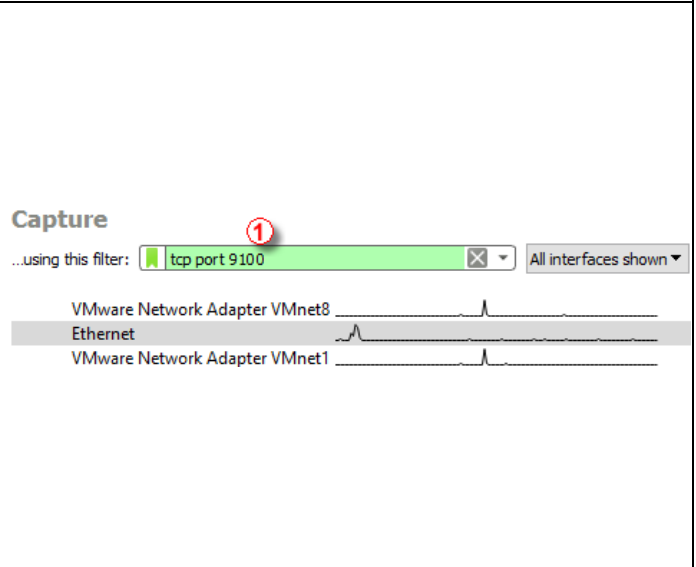
(<https://www.dataapex.com/documentation/Content/Help/010-clarity/010.010-system/010.010-configuration.htm>).

There follow some examples of Port number values for various devices.

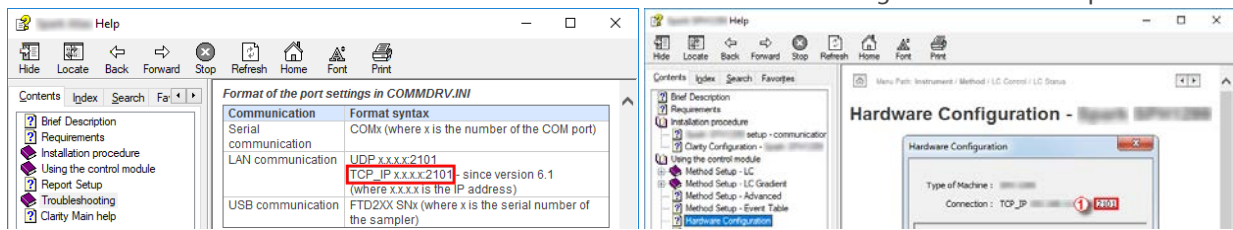
Device Setup in Clarity System Configuration



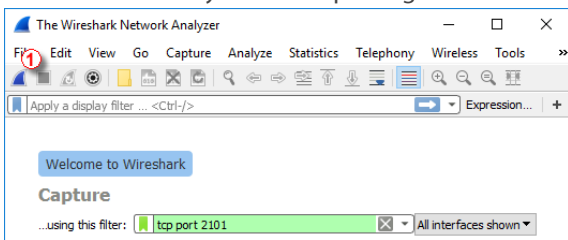
Adapted Wireshark Settings



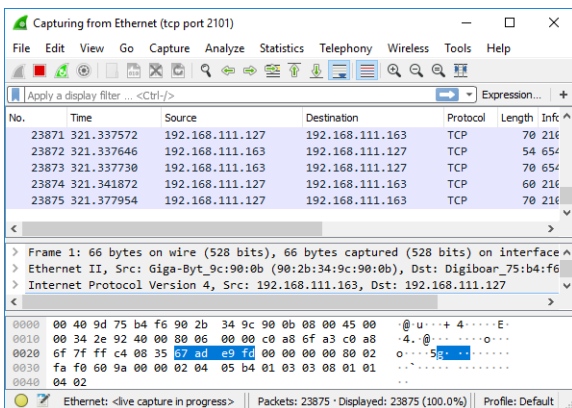
For other devices this information about can be found in Hardware Configuration or in Help documentation.



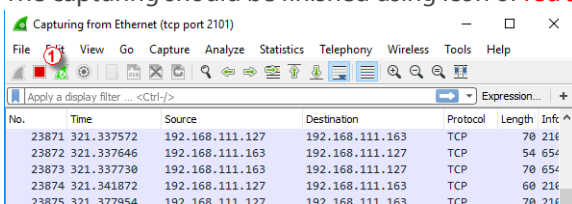
7. Then it is necessary to start capturing of communication traffic using icon of blue dorsal fin.



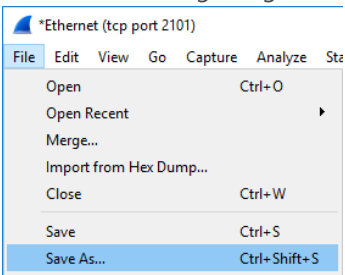
8. During capturing the screen of Wireshark will be populated with communication. The trouble with the device should be repeated right now while the capturing is running.



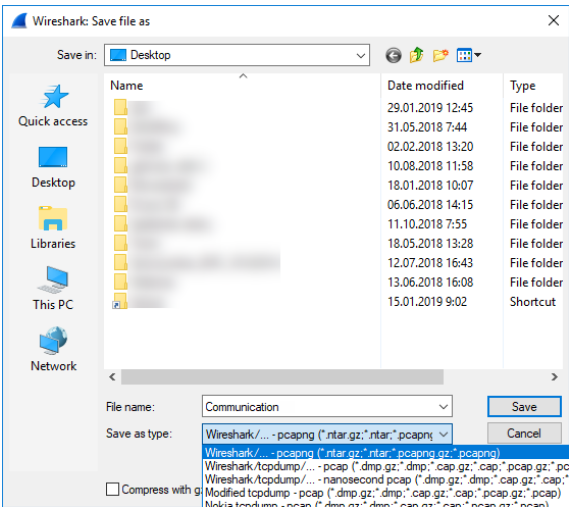
9. The capturing should be finished using icon of red square.



10. Invoke Save dialog using 'Save As' command from 'File' menu.



11. Name the communication traffic record and save it as below shown file type.



12. Contact DataApex Support Team at support@dataapex.com and provide this captured communication.

13. DataApex Support Team can also provide guidance regarding types of communication and port numbers for respective devices upon request.