# GETTING STARTED

## PTP Track Hound

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This brief instruction shall help you getting started with PTP Track Hound.

## 1. Installation & Execution

### 1.1 Windows

Simply follow the instructions of the setup program. During the installation process, the setup program will try to install the WinPCAP library. If you already have the latest version (4.1.3) installed, you can simply abort the WinPCAP setup. After successful installation, you can start PTP Track Hound via double-click on the desktop icon or on ptpTrackHound.exe in the appropriate installation folder.
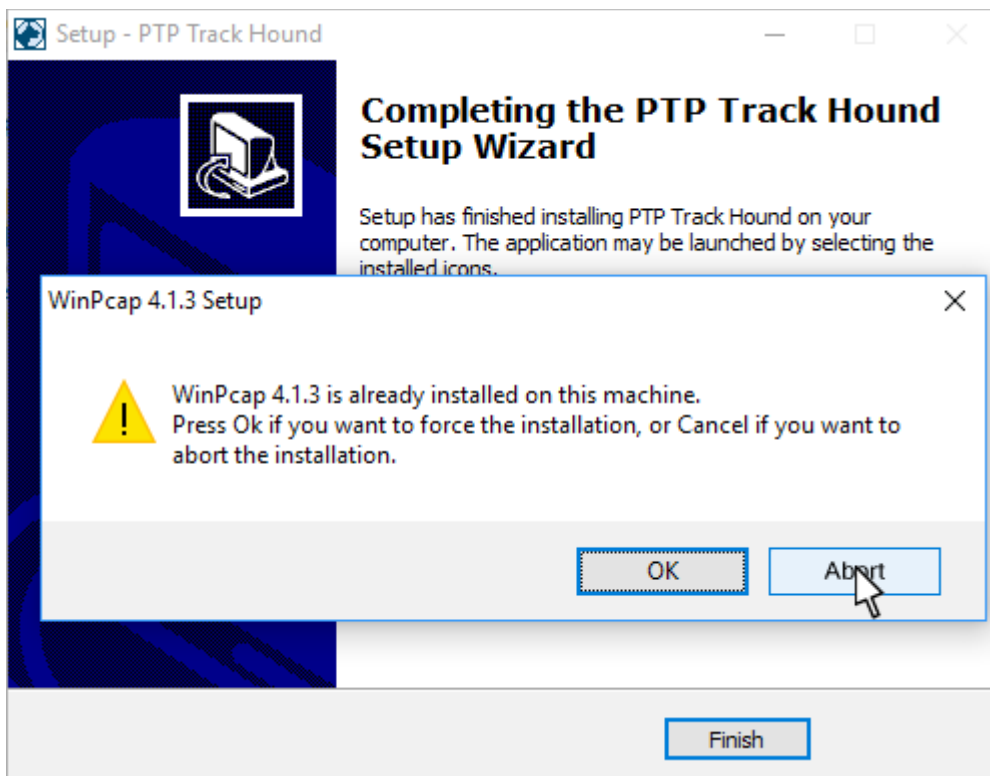


### 1.2 macOS

Mount the Apple disk image via double-click and open it in Finder. Install the application by opening ptpTrackHound.pkg and following the instructions of the setup program. After successful installation, you should find ptpTrackHound in your Applications folder and can run it via double-click.

In rare cases, it might happen that the user interface of PTP Track Hound is not correctly drawn, i.e. the main window stays black. In this case, please try to run the application as root via terminal by typing "sudo su" followed by "open /Applications/ptpTrackHound.app/".

**1.3 Debian**

Open the .deb package via double-click and follow the instructions of the debian package manager. Unfulfilled dependencies will automatically be solved during the installation process. After successful installation, simply open a terminal window and type "ptpTrackHound". The program will automatically be started with root permissions.


**1.4 SUSE/Fedora**

Open a terminal window and navigate to the directory where the .rpm package is located. Type "rpm -i ptptrackhound.x86_64.rpm" to install PTP Track Hound. Unfulfilled dependencies will automatically be solved during the installation process. After successful installation, simply type "ptpTrackHound". The program will automatically be started with root permissions.


*If you experience any problems during the installation, please do not hesitate to contact us at [ptptrackhound@meinberg.de](mailto:ptptrackhound@meinberg.de)!*

## 2. Usage

When using PTP Track Hound for the first time, the application will automatically start capturing on all supported capture interfaces with all filters turned off. On the second and all following starts, PTP Track Hound will backup and restore your last filter settings.

The user interface of PTP Track Hound can basically be divided into eight important areas, which are marked, numbered and described below.



(1)   Filters
(2)   Control
(3)   Message Statistics
(4)   Device Statistics
(5)   Messages
(6)   Devices
(7)   Message Details
(8)   Events

## 2.1 Filters

In the "Filters" section, the user can reduce the displayed messages and devices by selecting one or multiple specific capture interfaces, protocols (IEEE 802.3, IPv4, IPv6), domains (0-255), messages and/or devices. With the exception of the capture interface, the applied filters will only affect the display of messages and devices, the messages will still be captured and can be shown by readjusting the filter.

## 2.2 Control

 Pause/Resume capturing

 Clear current capture

 Preferences

The "Control" area offers several basic features to control the application. With the button "Pause/Resume capturing", the user can pause or resume the capture, while he observes the captured traffic. The "Clear current capture" button can be used to clear all captured messages and detected devices and start again from scratch. Via the "Preferences" button, the user can adjust the configuration for the "Memory Management", "Auto Dump" and "System Notifications" features.

## 2.3 Message Statistics

The "Message Statistics" gives an overview of the currently captured PTP messages. The user can see the total number of received messages, as well as the number of Announce (ANN), Sync (SYN), Follow Up (FUP), Delay Request & Peer Delay Request (REQ), Delay Response & Peer Delay Response (RESP), Signalling (SIG), Management (MNG) and other (OTH) messages.

## 2.4 Device Statistics

Analog to the "Message Statistics", the "Device Statistics" gives an overview of the detected PTP devices. The user can see the total number of different devices, as well as the number of Grandmasters (GM), Ordinary Clocks (OC), Boundary Clocks (BC), Transparent Clocks (TC), Slaves (SLA), Monitors (MON) and other devices (OTH).

## 2.5 Messages

Go to the previous message of the same type

Go to the first or next announce message

Go to the first or next sync message

Go to the first or next follow up message

Go to the first or next request message

Go to the first or next response message

Go to the next message of the same type

Automatically scroll the the most recently captured packet

Reduce list update rate (slow down)

Increase list update rate (speed up)

Define colorization rules for message types

Show on second screen (maximized)

Detach from main window

Hide

The "Messages" area offers an overview of all captured PTP messages. New messages will automatically be appended at the end of the list. Different PTP message types are visualized in different colors to allow an instant overview. The colors can be configured by the user via the "Define colorization..." button.

The seven buttons at the top left ("Go to...") allow to easily jump between Announce, Sync, Follow Up and other messages. If the toggle button "Automatically scroll..." is activated, the list will always scroll to the latest message as soon as it is appended to the list.

With the three buttons at the top right, the "Messages" area can either be shown maximized on a second screen (presentation mode), detached from the main and shown in a seperate window or completely hidden. These features are also available for the "Devices", "Message Details" and "Events" tiles.

## 2.6 Devices

Open Master Monitor

Edit preferences (i.e. vendor, name, management address) of the selected device

Show on second screen (maximized)

Detach from main window

Hide

The "Devices" tile offers an overview of all PTP devices in the network. Slaves, Ordinary Clocks and Boundary Clocks are automatically attributed to their Masters, so that the synchronization hierarchy can be discovered at the first glance. Detected devices can be given individual names, management addresses and images for easier identification via the "Edit preferences" button.

In addition to that, a detailed overview of the number of PTP messages that have been sent by a device is shown, message rates are calculated and used delay mechanisms are determined.

Via the "Open Master Monitor" button, a monitor window for the PTP network (Interface, Version, Protocol, Domain, VLAN) of the currently selected device can be opened. If no device is selected, the monitor window will be opened with a default configuration, which can then be changed. The "Master Monitor" can be used to observe the current master of a specific PTP network.

With the three buttons at the top right, the "Devices" area can either be shown maximized on a second screen (presentation mode), detached from the main and shown in a seperate window or completely hidden. These features are also available for the "Messages", "Message Details" and "Events" tiles.

**2.7 Message Details**

Show on second screen (maximized)

Detach from main window

Hide

The "Message Details" tile allows to analyze PTP messages in detail. It parses raw packet data, decodes all types of PTP messages and TLVs and displays them in human-readable format. When hovering a parameter in the PTP message, the raw packet data is highlighted at the appropriate position, so that message content can be easily analyzed.

With the three buttons at the top right, the "Message Details" area can either be shown maximized on a second screen (presentation mode), detached from the main and shown in a seperate window or completely hidden. These features are also available for the "Messages", "Devices" and "Events" tiles.

**2.8 Events**

Save event log

Show on second screen (maximized)

Detach from main window

Hide

The "Events" tile points out new devices, type and state changes and warns about multiple masters and other configuration issues. System notifications can be configured and will be generated as soon as the appropriate events occur.

Important user interactions are logged for easier traceability of the application behaviour.

Via the "Save event log" button, the current event log can be saved to a .txt file.

With the three buttons at the top right, the "Events" area can either be shown maximized on a second screen (presentation mode), detached from the main and shown in a seperate window or completely hidden. These features are also available for the "Messages", "Devices" and "Message Details" tiles.

*Further information about the usage of PTP Track Hound and several Q's and A's can be found on the PTP Track Hound Website:*

*https://www.ptptrackhound.com/*