

# User Guide

[PTP daemon](#) (PTPd) is an implementation of Precise Time Protocol ([IEEE Std 1588-2008](#)). PTPd provides precise time coordination of Ethernet LAN connected computers. PTPd has different configurations and parameters which are managed by management messages.

[PTPManager](#) is a command line client which prepares and sends management messages to PTPd. It can be used to control and configure the PTPd using management messages. These messages are used to query and update the PTP data sets maintained by clocks. These messages are also used to customize a PTP system and for initialization and fault management. The results of queries and management commands are displayed on PTPManager console. So PTPManager running on a management node, is used to control PTP daemons. Currently, PTPManager is tested to run on Debian and MAC platforms, .

## Download PTPManager

- Download PTPd from [here](#).
- Untar the zip and ptpmanager can be found in <your-directory>/tools/ptpmanager

## Installing PTPManager

Open the terminal and follow the steps:

- `cd <your-unzipped-folder>/tools/ptpmanager`
- `make`

This will create a new folder 'Build' in current directory which will contain object files and executable named 'ptpmanager'.

To remove object files and executable, run:

- `make clean`

## Running PTPManager

To run PTPManager, execute following commands on terminal:

- `cd <your-unzipped-folder>/tools/ptpmanager/Build`
- `sudo ./ptpmanager <PTPd IP> <PTPd interface>`

PTPd IP is the ip address of computer running PTPd to which management messages are sent.

PTPd interface is the interface on which PTPd is running.

Example command -

```
sudo ./ptpmanager 192.168.1.5 wlan0
```

(Replace the ip and interface with your PTPd ip and interface)

## Using PTPManager

If everything goes fine, you will see ptpmanager console like this:  
command>

On this console, different commands which ptpmanager supports can be executed. Valid commands are:

- |               |                                   |
|---------------|-----------------------------------|
| send          | - to send a management message    |
| send_previous | - to send last sent message again |

<code>show_previous_inmessage</code>	- to see fields of last received response in reply to your management message
<code>show_commonheader</code>	- to see PTP header (Table 18 of spec)
<code>show_managementheader</code>	- to see management header (Table 37)
<code>show_tlv</code>	- to see management TLV fields (Table 35)
<code>show_mgmtIds</code>	- to see all available management TLVs
<code>quit</code>	- to close the program

Use 'help' to see available commands.  
command>help

**send :** Send command is used to pack and send management messages to a computer running PTPd. It will ask the user to input managementId of the message to be sent and actionField. Users can run 'show\_mgmtIds' to find the id of management message. Actionfield can be 0 (for GET), 1 (for SET) or 3 (for Command) depending on the id of management message. If actionField is 1 (for SET), application will further ask for values of fields to be set at PTPd. Response/Ack/Error received from PTPd in reply this message is displayed on console. Appendix A shows a sample use of 'send' command.

**send\_previous:** In case, user wants to send the last message again, due to failure of previously sent message, user need not prepare the message again. 'send\_previous' can be used to send last message again.

**show\_previous\_inmessage:** This command can be explicitly used to parse and display the response/ack/error received after sending last management message.

**show\_commonheader:** When response/ack/error is received in reply to a management message, headers are not shown to the user. However, if user wants to investigate the PTP header of received response, 'show\_commonheader' can be used.

**show\_managementheader:** This command can be used if user wants to explicitly see the management headers.

**show\_tlv:** This command is used to see common tlv fields – tlvtype, managementId and length of tlv received in response of management message.

**show\_mgmtIds:** While using send command, user is asked for managementId of the message to be sent. 'show\_mgmtIds' can be used to see the id and allowed actionFields for a particular message. It displays a table with available messages, their id and allowed actions.

**quit:** Use this command to close the application.

For clarifications on values of fields of management message and tables referred to in ptpmanager, please check [IEEE Std 1588-2008](#).

## Appendix A: Screenshot of application installation

```
himanshu@himanshu-laptop: ~/Desktop/himanshu-2012/tools/ptpmanager/Build
File Edit View Terminal Help
himanshu@himanshu-laptop:~/Desktop$ cd himanshu-2012/tools/ptpmanager/
himanshu@himanshu-laptop:~/Desktop/himanshu-2012/tools/ptpmanager$ make
gcc -c "ptpmanager.c" -g -o ./Build/ptpmanager.o "-I." "-I."
gcc -c "network.c" -g -o ./Build/network.o "-I." "-I."
gcc -c "show.c" -g -o ./Build/show.o "-I." "-I."
gcc -c "packOutgoingMsg.c" -g -o ./Build/packOutgoingMsg.o "-I." "-I."
gcc -c "handleIncomingMsg.c" -g -o ./Build/handleIncomingMsg.o "-I." "-I."
gcc -o ./Build/ptpmanager ./Build/ptpmanager.o ./Build/network.o ./Build/show.o
./Build/packOutgoingMsg.o ./Build/handleIncomingMsg.o "-L."
himanshu@himanshu-laptop:~/Desktop/himanshu-2012/tools/ptpmanager$ cd Build/
himanshu@himanshu-laptop:~/Desktop/himanshu-2012/tools/ptpmanager/Build$ sudo ./ptpmanager 192.168.1.3 wlan0
[sudo] password for himanshu:
Enter command. Enter 'help' to see available commands.
command>
```

## Appendix B: Using commands of ptpmanager

```
File Edit View Terminal Help
himanshu@himanshu-laptop:~/Desktop/himanshu-2012/tools/ptpmanager/Build$ sudo ./ptpmanager 192.168.1.3 wlan0
Enter command. Enter 'help' to see available commands.
command>send
>managementId (use command 'show_mgmtIds' to find managementId)? 2
>actionField (0 for GET, 1 for SET) ? 1
>UserDescription (DeviceName;PhysicalLocation)? machine1;rack2
Message sent, waiting for response...
Received a RESPONSE management message.
User Description:
    lengthField : 14
    textField : machine1;rack2

command>show_managementheader

Management Message ::
targetPortIdentity :
    clockIdentity = 00:00:00:00:00:00:00:00
    portNumber = 0
startingBoundaryHops : 0
boundaryHops : 0
actionField : 2

command>send_previous
Message sent, waiting for response...
Received a RESPONSE management message.
User Description:
    lengthField : 14
    textField : machine1;rack2

command>show_previous_inmessage
Received a RESPONSE management message.
User Description:
    lengthField : 14
    textField : machine1;rack2

command>help
Valid commands are:
    send - to send a management message
    send_previous - to send last sent message again
    show_previous_inmessage - to see fields of last received message
    show_commonheader - to see header (Table 18 of spec)
    show_managementheader - to see management header (Table 37)
```