

**Package NTP - Network Time Protocol
Server/Client
Version 4.0.0-r60785-testing**

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1. Documentation For Package NTP

1.1. NTP - Network Time Protocol Server/Client

OPT_NTP provides the Network Time Protocol (NTP) for fli4l. This is not to be confused with the *normal* Time Protocol. The protocols are not compatible and thus new client programs understanding the NTP are required.

OPT_NTP works in both server and client mode. In client mode it synchronizes fli4l's system time with Internet time references (Time Servers) or uses the time information of a connected Radio clock.

In server mode OPT_NTP acts as a time server for the local net (LAN). NTP uses port 123.

1.1.1. Configuration Of The Package NTP

Like with all fli4l packages configuration is done by adapting the file `Path/fli4l-4.0.0-r60785-testing/<config>/ntp.txt` to your needs.

OPT_NTP Default: `OPT_NTP='no'`

Setting this to 'no' completely deactivates OPT_NTP. No changes to the fli4l boot medium resp. archive `opt.img` are made. OPT_NTP does not overwrite any other part of the fli4l installation. To activate OPT_NTP set OPT_NTP to 'yes'.

NTP_REFCLOCK_TYPE This variable determines the type of a locally connected reference clock. Possible values are listed in Tab. 1.1. If no reference clock is available and hence system time is only synchronized by other network time servers specify "none" here.

Table 1.1.: Supported Reference Clocks

Shortcut	Model
none	no Reference Clock
mouseclock-nts	mouseCLOCK NTS
mouseclock-usb-ii	mouseCLOCK USB v2.0
sure	Sure RPC DCF77
neoclock4x	NeoClock4X DCF77
hopf-seriell	hopf DCF77/GPS (serial)

NTP_REFCLOCK_DEVICE This variable specifies the interface to which the reference clock is connected. Typically, this is `/dev/ttySx` for the (x+1)-th RS232-Interface or `/dev/ttyUSBx` for the (x+1)-th USB-Interface, i.e. `/dev/ttyS0` or `/dev/ttyUSB1`.

NTP_SERVER_N This variable specifies the the number of servers for time synchronisation.

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NTP_SERVER_x_HOST This variable contains the IP address or the FQDN of the server to be used for time synchronisation.

NTP_SERVER_x_TYPE This variable controls the type of relationship between fli4l and the time Server. When setting the value to 'peer', the time is synchronized with the defined server. This is used if more local NTP servers exist (usually using time sources with similar Stratum) and that should be synchronized with each other. Setting this value to 'server' specifies the defined time server as the source for the router's NTP server. This is for using external time servers (which usually have time sources with a higher stratum).

NTP_SERVER_x_BURST This variable is optional.
'yes' speeds up the synchronization with the defined NTP Server by using eight NTP adjustment packages.

NTP_SERVER_x_IBURST This variable is optional.
'yes' speeds up the synchronization with the defined NTP Server by using 16 NTP adjustment packages.

NTP_SERVER_x_PREFER This variable is optional.
With 'yes' this NTP server is preferred over other NTP servers with the same Stratum.

NTP_SERVER_x_MINPOLL This variable is optional.
This variable defines the minimum time interval between NTP time synchronization packets. Values between 4 (15 s) and 6 (64 s) are allowed.

NTP_SERVER_x_MAXPOLL This variable is optional.
This variable defines the maximum time interval between NTP time synchronization packets. Values between 10 (1024 s) and 17 (131 702 s = around 36.4 h) are allowed.

NTP_SERVER_x_VERSION This variable is optional.
This variable specifies the NTP packet's version number to be used. Values between 1 and 4 are allowed.

NTP_LOCAL_RTC With 'yes' the clock of the BIOS is also used as a time source. This enables the NTP daemon to continue to work as a time server even if none of the specified time servers can be reached or the connected radio clock does not provide a valid time anymore.

NTP_LOCAL_RTC_STRATUM Defines the priority of the local clock within the NTP hierarchy. The higher the value the more inaccurate is the accuracy of the time source used. A server using the time of the reference clock has a stratum of '1'. The BIOS clock should normally have a value from '10' to '12' assigned.

NTP_ALLOW_IPV4_N This variable specifies the number of IPv4 networks which are allowed to access the router via NTP.

NTP_ALLOW_IPV4_x This variable holds a reference to an IPv4 network that is allowed to access the NTP server, for example, IP_NET_1.

NTP_ALLOW_IPV4_x_PEERING This variable is optional.
'yes' allows peering of fli4l with NTP servers in the referenced IPv4 network.

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NTP_ALLOW_IPV6_N This variable specifies the number of IPv6 networks which are allowed to access the router via NTP.

NTP_ALLOW_IPV6_x This variable holds a reference to an IPv6 network that is allowed to access the NTP server, for example, `IPv6_NET_1`.

NTP_ALLOW_IPV6_x_PEERING This variable is optional.
'yes' allows peering of fli4l with NTP servers in the referenced IPv6 network.

NTP_CHECK_STATUS Setting this variable to 'yes' will display information on the time synchronization in the WebGUI in case of `OPT_HTTPD='yes'`. With an activated `RRDTOOL_NTP` graphs for the time drift are generated in addition.

NTP_SHOW_STATUS_VIA_LED Specifying 'yes' here will indicate the state of NTP synchronisation on the defined LEDs given that the package "hwsupp" defines any LEDs. The following assignment applies:

- If LED 1 blinks no correct year is provided, else it is off.
- If LED 2 is on fli4l's time is in sync and is off if not and the NTP daemon is in the process of adjusting it in steps.
- If LED 3 is on the connected radio clock is working. It blinks if the radio clock does not provide a valid time but synchronisation can be accomplished with other NTP servers. It is off if the NTP server has no valid time source at all.

1.1.2. Support

You will only get support within the [fli4l-Newsgroups](#) (Page 5).

fli4l Newsgroups and their rules: <http://www.fli4l.de/hilfe/newsgruppen-irc-forum/>

A. Appendix For Package NTP

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