

# Bootloader Version 2

All delivered Netzer have an installed bootloader version 2. This bootloader expects standard IntelHex files per TFTP. The blinking **right** LED of the RJ45 jack indicates an installed bootloader 2.

The Intel hex file of the bootloader for installing (in case of accidentally deletion or malicious installation):

[Bootloader 2](#). Only installable with an external programmer device like ICD!

Here is a list of already published releases:

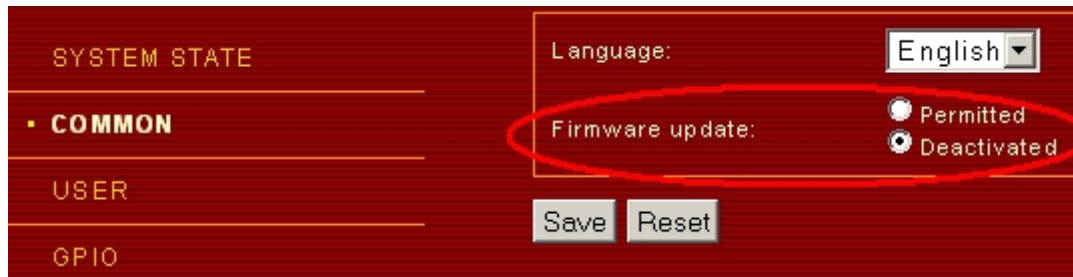
- [Version 1.5 base Build 1157 \(2014-01-04\)}](#)
- [Version 1.4 base Build 222 \(Release 2012-03-09\)](#)
- [Version 1.4 base Build 220 \(Release 2012-01-02\)](#)
- [Version 1.4 base Build 219 \(Release 2011-12-23\)](#)
- [Version 1.4 base Build 214 \(Release 2011-12-21\)](#)
- [Version 1.4 base Build 198 \(Release 2011-10-14\)](#)
- [Version 1.3 Build 132 \(Release 2011-04-25\)](#)
- [Version 1.3 Build 129 \(Release 2011-04-13\)](#)
- [Version 1.3 Build 128 \(Release 2011-03-15\)](#)
- [Version 1.3 Build 122 \(Release 2011-02-22\)](#)
- [Version 1.2 Build 103 \(Release 2011-01-08\)](#)
- [Version 1.1 Build 83 \(Elektor Release 2010-11-02\)](#)

The Releases can be flashed without programming device if bootloader is installed. It is described in the next section. The IntelHex files also can be programmed directly into the microcontroller with an external programmer device like ICD.

## Updates in operation mode

The update is done with a PC via the network. The hex file should be stored to hard disk before. The file is transferred to the Netzer via tftp. For the update therefore a tftp client is needed. At the most operating systems such a client is included.

Since Version 1.3 the Firmware update has to be explicitly activated via the Netzer web interface (logged in as administrator). This eliminates a potential security risk of Netzer. In the common settings a radio group can be found:



There is also the possibility to activate the Firmware uploads from command line with **curl**:

```
curl --data "ubf=1&0=Save" http://user:password@netzer_name.local/common.htm
```

*netzer\_name* must be the MDNS name of Netzer. Fill in administrator accounts data for *user* and *password*. Installed firmware without access control can simply use the following command:

```
curl --data "ubf=1&0=Save" http://ne2c3519.local/common.htm
```

The file is transferred to Netzer with the TFTP PUT command. Netwerker is accessed via the current IP address or the network name. Example for a tftp command in a shell box under Windows:

```
tftp ne7C4000.local put "Netzer.hex"
```

Netzer goes into the update mode automatically and the file is transferred. A running transfer is indicated through the network activity LED, which is emitting for about 20 seconds. After the transfer has finished successfully the tftp client prints out that message:

```
Transmission successful: 335139 bytes in 16 seconds, 20946 Bytes/s
```

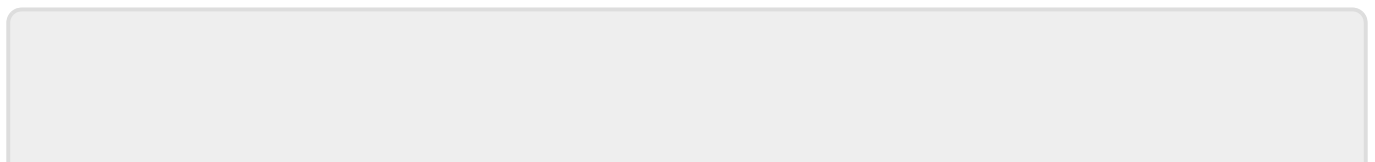
## Updates in bootloader mode

The bootloader mode is active for aprox. 2 seconds after power on. After this time Netwerker enters the operation mode. The active mode is indicated due the fast blinking network LED. In bootloader mode Netwerker has the fixed IP address 192.168.97.60 and MAC address 00-04-A3-00-00-00.

Netzer supports only ARP and TFTP in Bootloader mode, no ICMP. Hence, Netzer can **not** be pinged at 192.168.97.60.

Updating only works if this IP address is not already occupied. The updating process works analog to the update in operation mode.

Only one Netwerker is allowed to be in Bootloader mode when starting the update.



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