

## TFTP Firmware upgrade

### Application Note 301

Revision 3, October 2011

This Application Note describes how to upgrade the firmware of your *proconX* unit using the TFTP method.

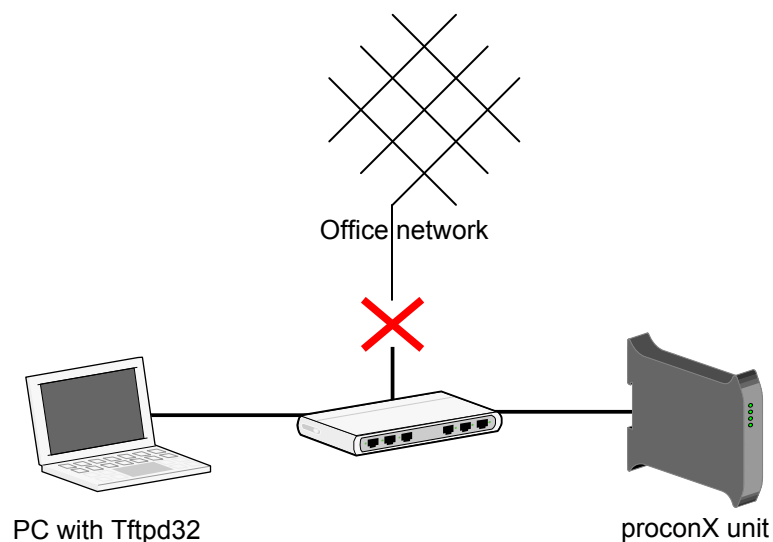
#### Prerequisites

- File transfer utility (*Tftpd32.exe*, version 3.50)
- Firmware binary file (\*.bin extension)

The *Tftpd32* utility is available from the *proconX* website.

#### Preparation

1. Unzip the *Tftpd32.zip* file into a directory.
2. The firmware binary file is usually distributed as .zip file. Unzip it into the same directory where you have placed the *Tftpd32.exe* utility.
3. Establish an Ethernet network connection between the *proconX* unit and a Windows PC. The *proconX* unit and the Windows PC must be on the same subnet.



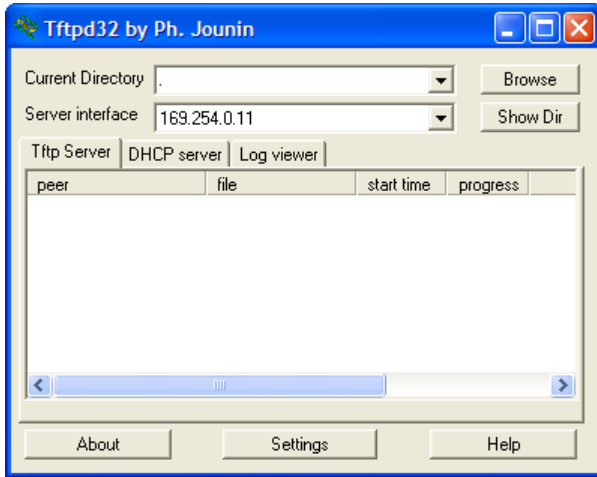
Make sure that there is no DHCP or BOOTP server connected to the network. If in doubt, disconnect both, PC and *proconX* unit from the network and use a separate switch which is isolated from the rest of the network to connect them.



PC Firewall software tends to block the TFTP and DHCP traffic. It may be easier to temporarily turn off the firewall rather to re-configure the firewall.

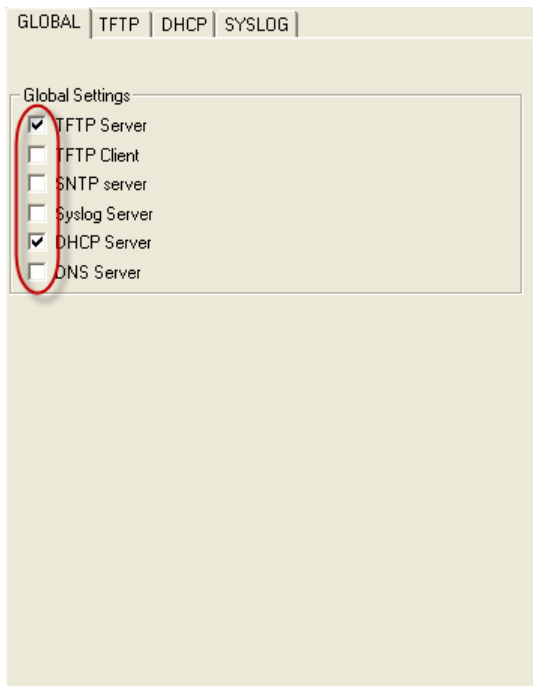
## Configuring the file transfer utility

1. Launch *Tftpd32.exe* from the directory you unzipped it to:



2. Click on the **settings** button to configure the *Tftpd32* utility. Then select the **GLOBAL** tab.

Uncheck all but the TFTP Server and DHCP Server components.



3. Select the **TFTP** tab. The settings used are the default settings and should match those shown below:

The screenshot shows a configuration window with tabs for GLOBAL, TFTP, DHCP, and SYSLOG. The TFTP tab is selected. The Base Directory is set to "." with a Browse button. TFTP Security is set to Standard. TFTP configuration includes Timeout (seconds) at 3, Max Retransmit at 6, Tftp port at 69, and local ports pool. Advanced TFTP Options include checked boxes for Option negotiation, Show Progress bar, and Translate Unix file names. Bind TFTP to this address is set to 10.0.0.11. Other options like PXE Compatibility, Allow \ As virtual root, Use anticipation window of 0 Bytes, Hide Window at startup, Create "dir.txt" files, Create md5 files, and Beep for long transfer are unchecked.

4. Select the **DHCP** tab and enter the following settings:

- Choose an IP address for the *proconX* unit and enter it in the IP pool starting address field. This IP address must be of the same subnet as your computer and not assigned to another network node. In most cases this means that the first three numbers of the IP addresses must be identical. Your computer's IP address is shown in the Bind DHCP to this address field.
- Enter 1 as value for the pool size.
- Enter the name of the binary file to be uploaded in the Boot File field. This file must have a *.bin* extension.
- Enter the netmask of the subnet in the Mask field. In most cases this is *255.255.255.0*.
- Add 200 as Additional Option and enter the hardware Type as shown on the serial number label. This should be either *X100-STD* or *X100-CAN* if you have a hardware with CAN bus.
- Uncheck Ping address before assignation.
- Check Bind DHCP to this address.
- Uncheck Persistent leases.

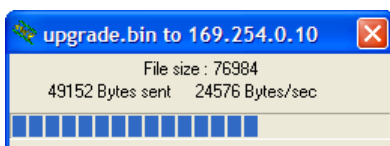
- Click on the **OK** button to store these settings. A dialog box will inform that *Tftpd32* has to be restarted. Confirm and restart the program.



## Upload process

- Restart *Tftpd32.exe* after the settings have been configured.
- Power-cycle the *proconX* unit.
- Upon restart the *proconX* unit will contact *Tftpd32* to obtain an IP address and check if a boot file is available. If the TFTP server offers a file for download, the *proconX* unit will load this file and program it into its flash memory.

This is indicated for a brief moment through a file transfer progress bar.



Once the boot file has been sent to the *proconX* unit, it will start the newly loaded firmware.

4. The Log View tab window should show a log similar to the one below:

```
Rcvd DHCP Discover Msg for IP 0.0.0.0, Mac 72:03:48:67:72:8C [19/10 11:57:50.125
Client requested address 0.0.0.111 [19/10 11:57:50.156]
DHCP: proposed address 169.254.0.10 [19/10 11:57:50.156]
2524 Request 2 not processed [19/10 11:57:50.234]
Rcvd DHCP Rqst Msg for IP 0.0.0.0, Mac 72:03:48:67:72:8C [19/10 11:57:50.281]
Previously allocated address 169.254.0.10 acked [19/10 11:57:50.296]
Connection received from 169.254.0.10 on port 1024 [19/10 11:57:50.296]
Read request for file <upgrade.bin>. Mode octet [19/10 11:57:50.296]
Using local port 1849 [19/10 11:57:50.296]
2524 Request 2 not processed [19/10 11:57:50.343]
<upgrade.bin>: sent 151 blks, 76984 bytes in 3 s. 0 blk resent [19/10 11:57:53.3
```

5. The last line in the log must be a confirmation of the uploaded file name and it's size.
6. Connect to the *proconX* unit using a web browser and click on the **About** menu entry to confirm the new firmware version number.
7. In case of any failure, repeat above process starting with step 2.

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*proconX* Pty Ltd  
PO Box 791  
Sumner QLD 4074  
Australia  
Website: <http://www.proconx.com>