# Firmware upgrade

## Application Note 301

Revision 5, April 2026

This Application Note describes how to upgrade the firmware of your *proconX* unit using the device's built-in Ethernet bootloader and our upgrade tool.

### Prerequisites

- *proconX* Firmware Upgrade Tool (`x100-upgrade-tool.exe`)
- Firmware file (**.zip* extension)

The *proconX* Firmware Upgrade Tool is available from the *proconX* website.

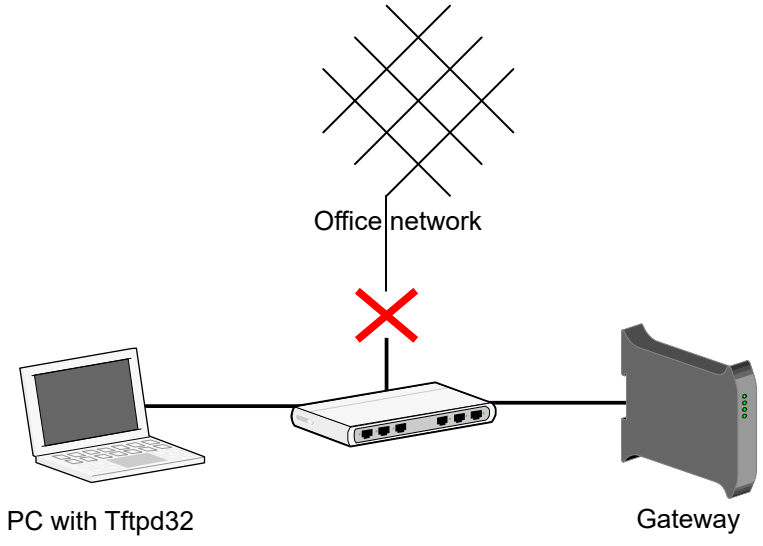
## Preparation

1. Download the `x100-upgrade-tool.exe` file into a directory.

2. The firmware file is usually distributed as `.zip` file. You do not need to unzip it. The tool can process zipped firmware archives. If you have older `.bin` files, those can be used as well by the tool.

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.

The upgrade process is independant from the firmware and the device' configured network settings are irrelevent for this process. The Ethernet bootloader obtains its network settings through DHCP.

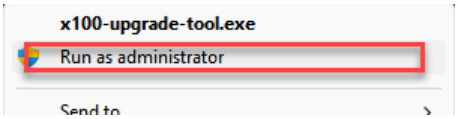


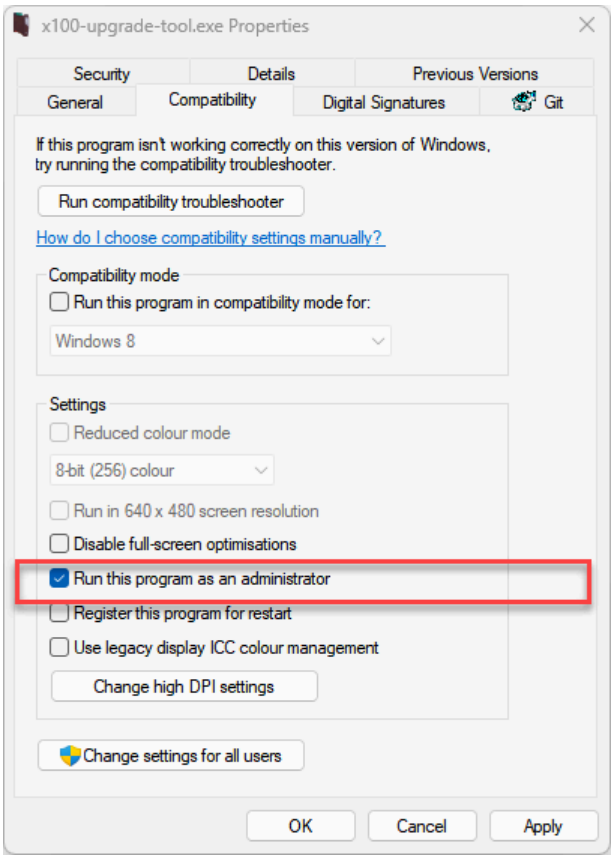
Make sure that there is no DHCP or BOOTP server connected to the network. If in doubt, disconnect both, PC and *proconX* unit from the network and use a separate switch which is isolated from the rest of the network to connect them.

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.

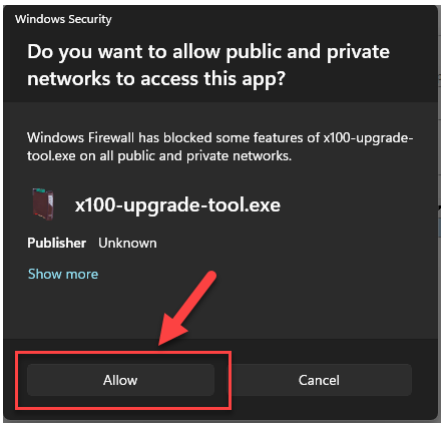
## Launching the upgrade utility

1. Launch the downloaded `x100-upgrade-tool.exe` with *Administrator* privileges. This can be done once using the `.exe` file's context menu when launching or set permanently in the `.exe` file's properties window.

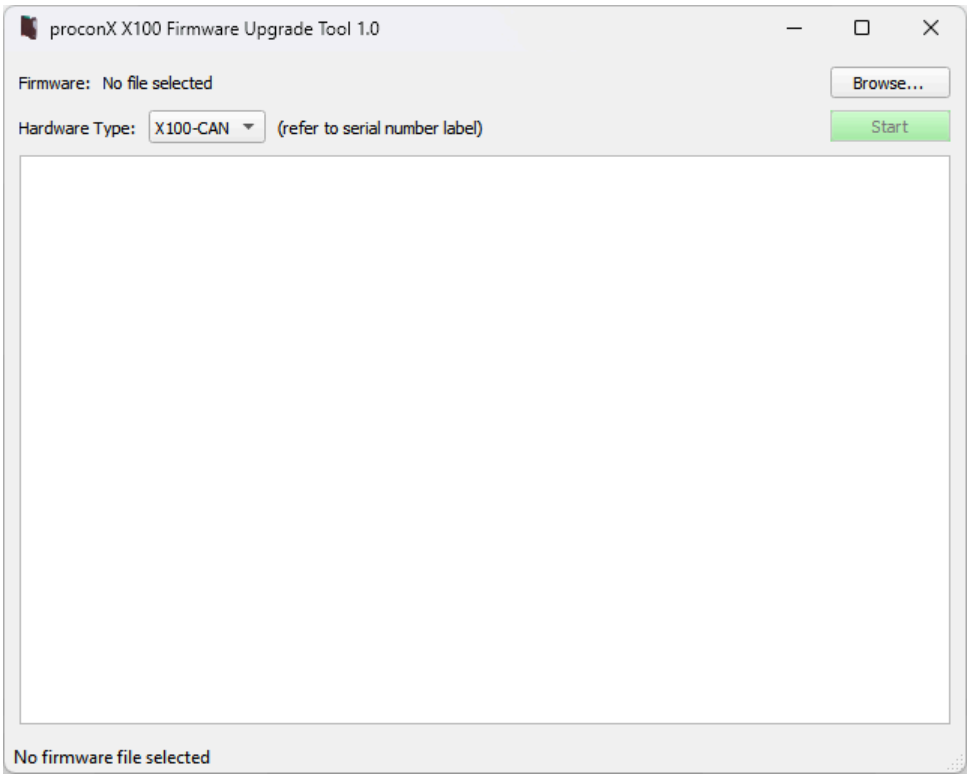


2. For the first launch configure the Windows firewall to unblock `x100-upgrade-tool.exe`:




3. Once launched the tool UI is shown:




4. Select the `Hardware Type` matching the *Type* written on the silver serial number label of your gayeway. In most cases this will be `X100-CAN`.

5. Click on the **`Browse...`** button to select a firmware file.

6. Click the **`Start`** button.

   Check the log pane for warning or error messages in relation to firewall, administration privileges required or a file format mismatch and rectify and restart the tool.

7. If all is OK, the tool will display **Ready — power-cycle the device to start the upgrade!** in the status line and log similar to this:

```
Extracted esenet.bin from esenet_v3.5.zip
Warning: UDP port 67 (DHCP) has no inbound Allow rule – Windows Firewall may block it
Warning: UDP port 69 (TFTP) has no inbound Allow rule – Windows Firewall may block it
Interface : Ethernet  (10.0.0.15 / 255.255.255.0)
Device IP : 10.0.0.100
Firmware  : esenet.bin
HW type   : X100-CAN

[TFTP] Ready on 10.0.0.15:69
[TFTP] Server requested on ip 10.0.0.15, port 69
[DHCP] Ready on port 67  server=10.0.0.15  offering=10.0.0.100
[TFTP] Starting receive loop...
```

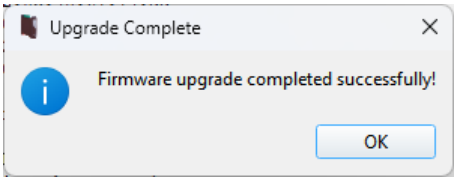
## Upload process

1. Power-cycle the *proconX* unit.

2. Upon restart the *proconX* unit's Ethernet bootloader will contact the upgrade tool to obtain an IP address and check if a boot file is available. The *proconX* unit will load this file and program it into it's flash memory. This is indicated in the log file like this:

```
[DHCP] DISCOVER  mac=72:03:48:67:74:dd
[DHCP] OFFER     10.0.0.100 # 72:03:48:67:74:dd  boot=esenet.bin  opt200=X100-CAN
[DHCP] REQUEST   mac=72:03:48:67:74:dd
[DHCP] ACK       10.0.0.100 acked for 72:03:48:67:74:dd
[TFTP] Setting tidport to 1024
[TFTP] requested file is in the server root - good
[TFTP] Opening file esenet.bin for reading
[TFTP] Reached EOF on file esenet.bin
[TFTP] Received ACK to final DAT, we're done.
[TFTP] Successful transfer.
[TFTP] Session 10.0.0.100:1024 complete
[TFTP] Transferred 96180 bytes in 0.43 seconds
[TFTP] Average rate: 1754.08 kbps
[TFTP] 0.00 bytes in resent data
[TFTP] 0 duplicate packets
```

3. Once the firmware file has been sent to the *proconX* unit, it will start the newly loaded firmware and a dialog box confirming a successful upgrade is shown:




4. Connect to the *proconX* unit using a web browser and click on the **About** menu entry to confirm the new firmware version number.

5. In case of any failure, repeat above process starting with step 1.

The *proconX* unit's bootloader is immutable and cannot be overwritten. The upgrade process can always be repeated, even after a failed or partial upgrade.



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