

# MOBATIME

## DTS error analysis & Firmware update

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Product Management  
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Rev. 2.2



# 1. Error analysis

# 2. Firmware update of network products

# 1. Error analysis – Get log and config files



## Topics:

- Checklist for error analysis
- How to find DTS Alarm history and Firmware version
- Get Log files of MOBA-NMS
- Get DTS log files
- Get DTS config files, MIB-files, telegram files, ...

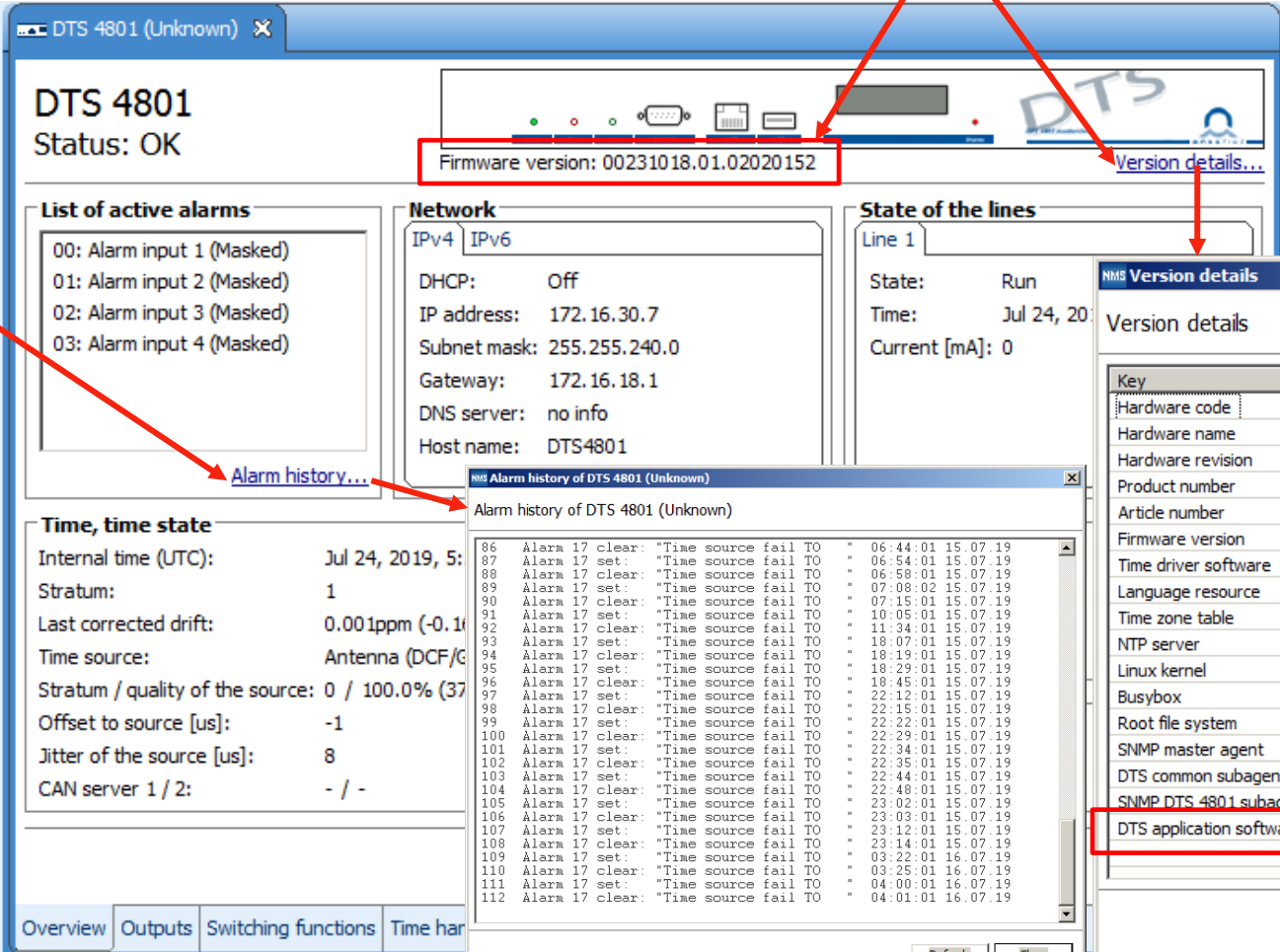


## Checklist for error analysis:

1. **Check alarm history: if error with power supply or periodical reboot is reported, do not update the device. Check power supply !**
2. **Check User Manual Appendix "Troubleshooting"**
3. **Check firmware version.**  
If firmware is old, check in Release Notes, if reported error has been corrected in a newer version. => if yes, update the device.  
If firmware is very old => update the device.  
If no relevant modif. were made in newer versions, you can leave the current firmware.
4. **Check the availability of the time source**
  - Check GPS (DCF time reception) → check second counter in menu  
→ check red LED (back side)  
→ check LED in GPS
  - Check NTP source → start ntpq
5. **Depending on error type,**
  - check configuration in dts.config
  - check corresponding log file
  - ...

## How to find DTS Alarm history and Firmware version ?

- 1) Check alarm history with NMS
- 2) Check firmware version with NMS.

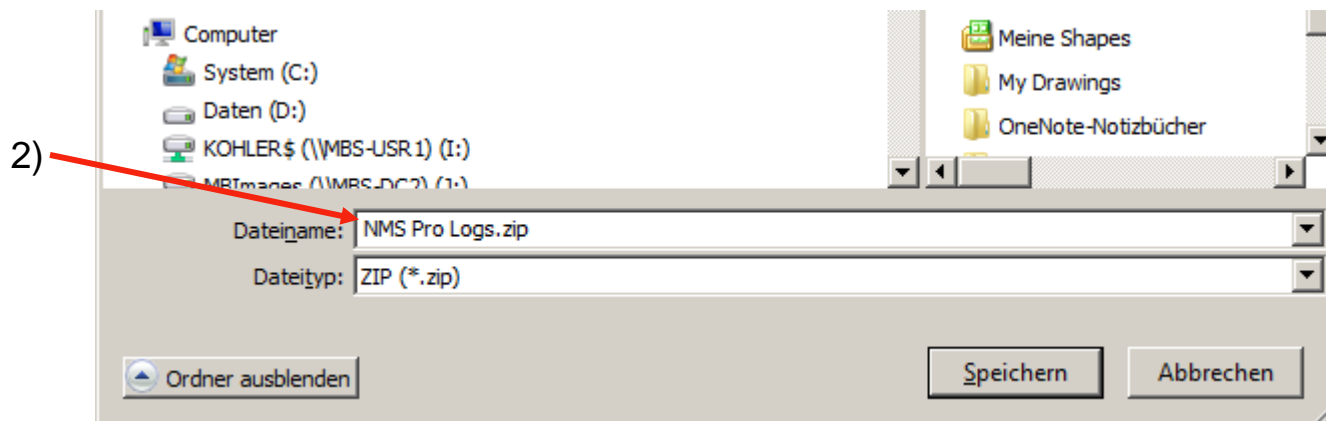
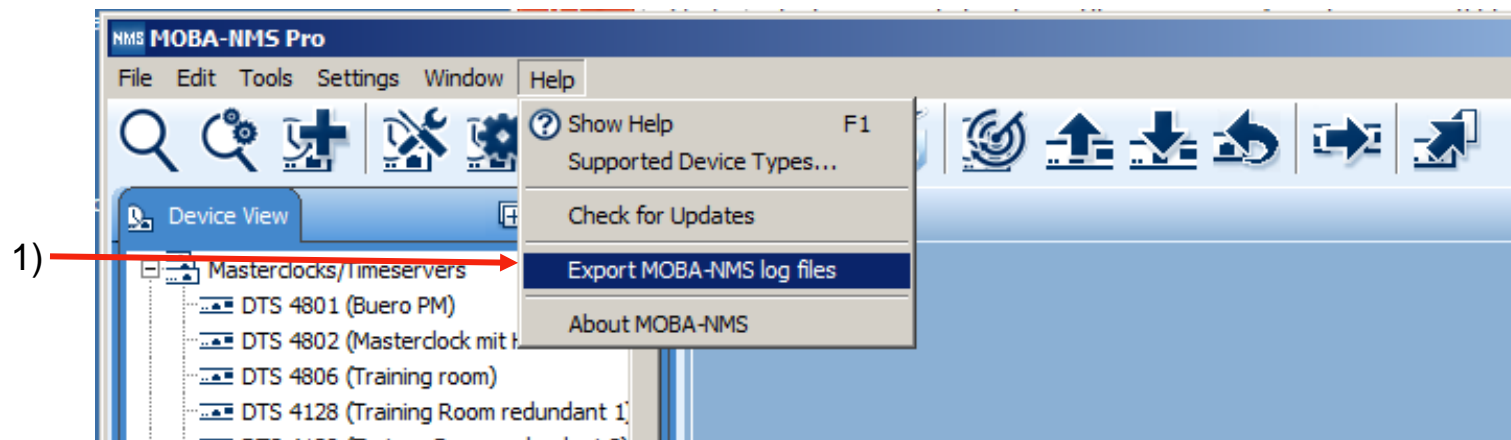


The screenshot shows the NMS interface for a DTS 4801 device. The status is OK. The firmware version is 00231018.01.02020152. The alarm history shows a series of 'Time source fail TO' alarms. The version details window shows the following information:


Key	Value
Hardware code	04:08:00:01:01:00:00:00
Hardware name	DTS 4801.masterdock
Hardware revision	124343.00
Product number	1017769.0034
Article number	117984
Firmware version	00231018.01.02020152
Time driver software	V1.01.0001 SWNbr 124183 Date 07.12.2018
Language resource	V1.11.07.12.18 english
Time zone table	MOBA V0010 user V0001
NTP server	V4.2.8p10.000 SWNbr 124186 Date 12.04.2018
Linux kernel	V4.9.76.0000 SWNbr 124184
Busybox	V1.28.4
Root file system	Build 231018.143515
SNMP master agent	V5.7.3
DTS common subagent	V2.00.0001 SWNbr 124187 Date 12.04.2018
SNMP DTS 4801 subagent	V2.00.0001 SWNbr 124187 Date 12.04.2018
DTS application software	V2.01.0007 SWNbr 124182 Date 07.12.2018

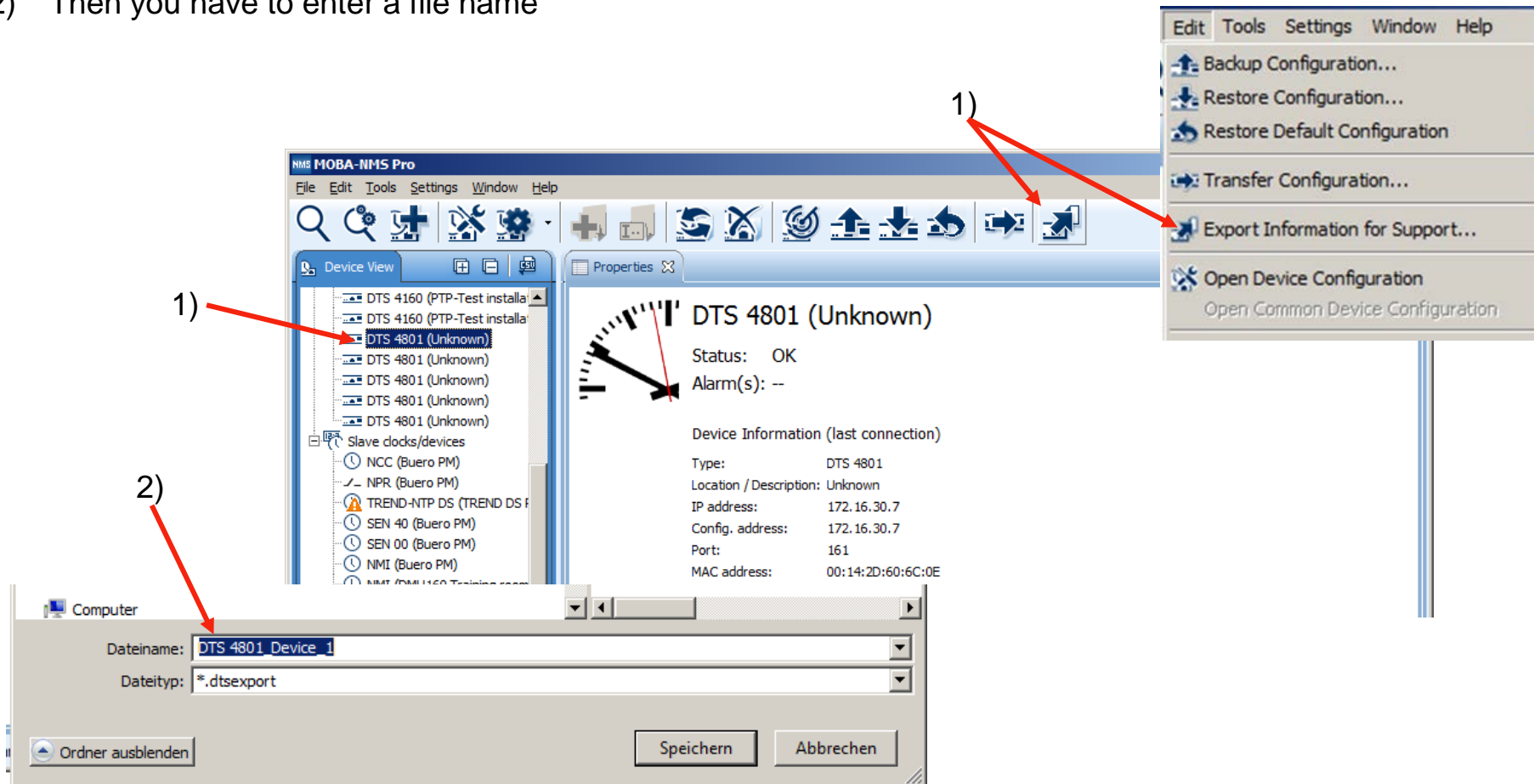
In case you have a problem with MOBA-NMS, you have to save the NMS log files and send to MOBAtime support for analysis.

- 1) To export NMS Log files, click on menu "Help – Export MOBA-NMS log files"
- 2) Then you have to enter a file name



**Example: DTS 4801.masterclock**

- 1) To copy the files from DTS, select your DTS device and click on the icon top right  or click menu "Edit - Export Information for Support...". All Information will be saved in a special file \*.dtsexport
- 2) Then you have to enter a file name



The screenshot illustrates the MOBA-NMS Pro interface. The 'Device View' pane on the left shows a list of devices, with 'DTS 4801 (Unknown)' selected. The 'Properties' pane on the right displays the status and device information for the selected device. A red arrow labeled '1)' points to the 'Export Information for Support...' option in the 'Edit' menu. Another red arrow labeled '2)' points to the 'Dateiname' field in the file save dialog, which contains the text 'DTS 4801\_Device\_1'.

**MOBA-NMS Pro**  
File Edit Tools Settings Window Help

Device View

- DTS 4160 (PTP-Test installa
- DTS 4160 (PTP-Test installa
- DTS 4801 (Unknown)**
- DTS 4801 (Unknown)
- DTS 4801 (Unknown)
- DTS 4801 (Unknown)
- DTS 4801 (Unknown)
- Slave clocks/devices
  - NCC (Buero PM)
  - NPR (Buero PM)
  - TREND-NTP DS (TREND DS F
  - SEN 40 (Buero PM)
  - SEN 00 (Buero PM)
  - NMI (Buero PM)
  - NMT (PM 1160 Testinstalla

Properties

**DTS 4801 (Unknown)**

Status: OK  
Alarm(s): --

Device Information (last connection)

Type:	DTS 4801
Location / Description:	Unknown
IP address:	172.16.30.7
Config. address:	172.16.30.7
Port:	161
MAC address:	00:14:2D:60:6C:0E

Computer

Dateiname: **DTS 4801\_Device\_1**

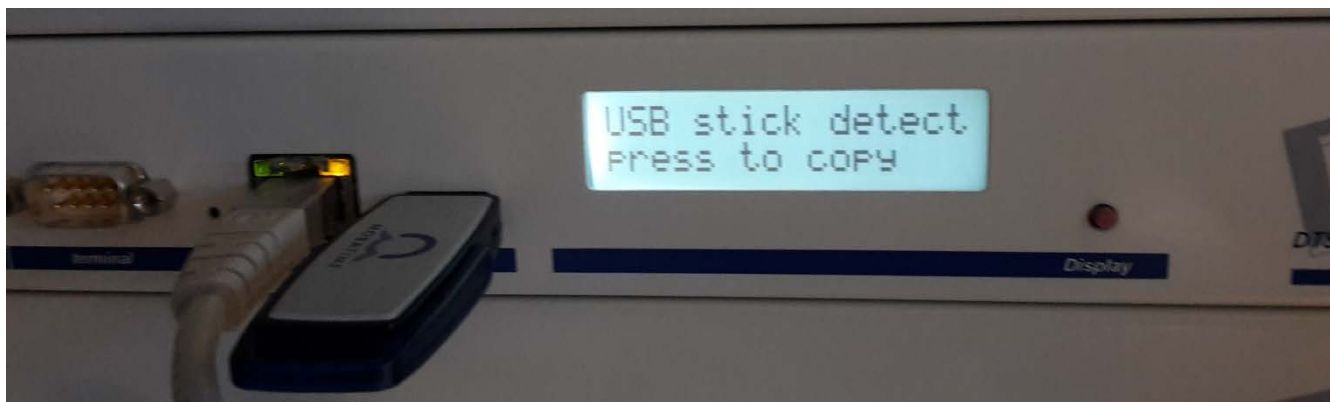
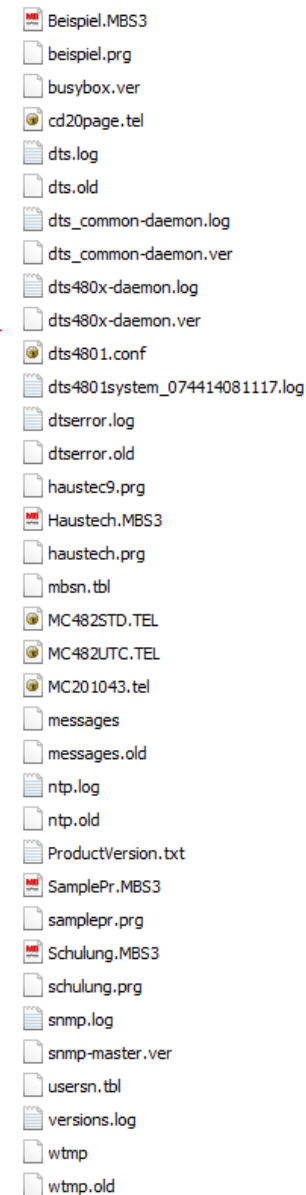
Dateityp: \*.dtsexport

Ordner ausblenden

Speichern Abbrechen

### Example: DTS 4801.masterclock

- Enter USB memory stick to get log and config files
  - Start "Putty" and open config menu via Telnet, SSH or serial connection
  - Go to menu: 3 Maintenance – 3 Backup configuration and log to USB
- ➔ Now you have the config and log files on your USB stick



### Remark:

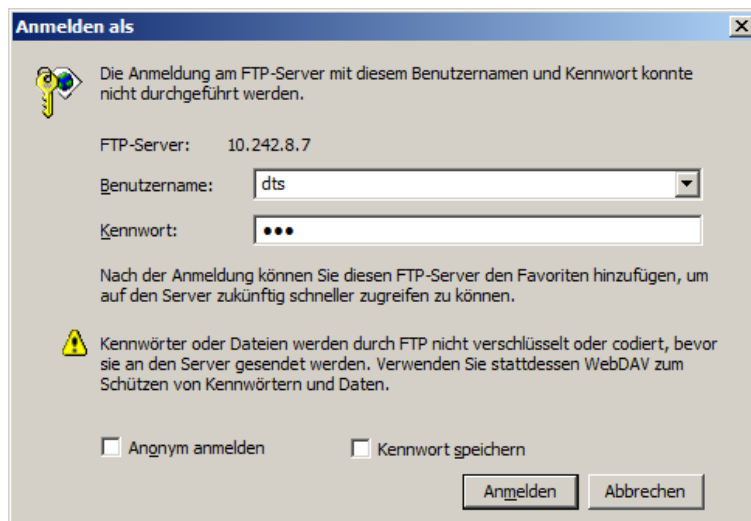
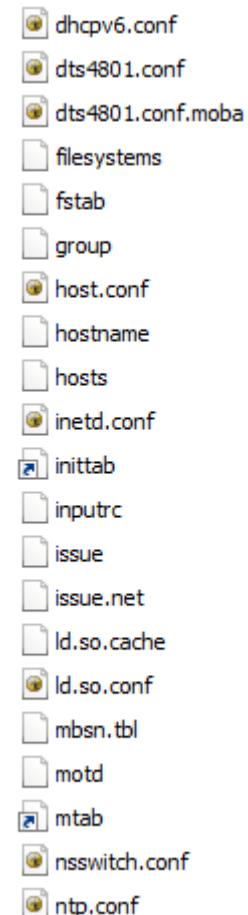
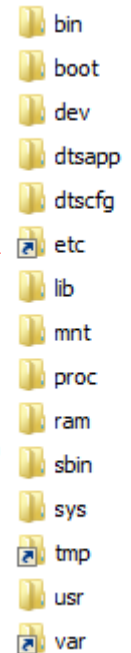
DTS 4128, DTS 4130, NTS and NTS-IT do not have a USB port.

➔ Use NMS or FTP.



## Example: DTS 4801.masterclock

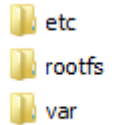
- Start Windows Explorer
- Enter: `ftp://dts@"IP address of the DTS 4801"` → e.g. `ftp://dts@10.242.8.7`
- Enter "User name": `dts` and "Password": `dts`
- ➔ Now you are in the file system of the DTS.
- Change to sub-directory `/etc`
- There you find all the config files
- Copy all the files into an empty folder on you PC



FTP login dialog

- Go back to the root directory and change to sub-directory **`/var/local/dts`**

- There you find all the telegram and program files



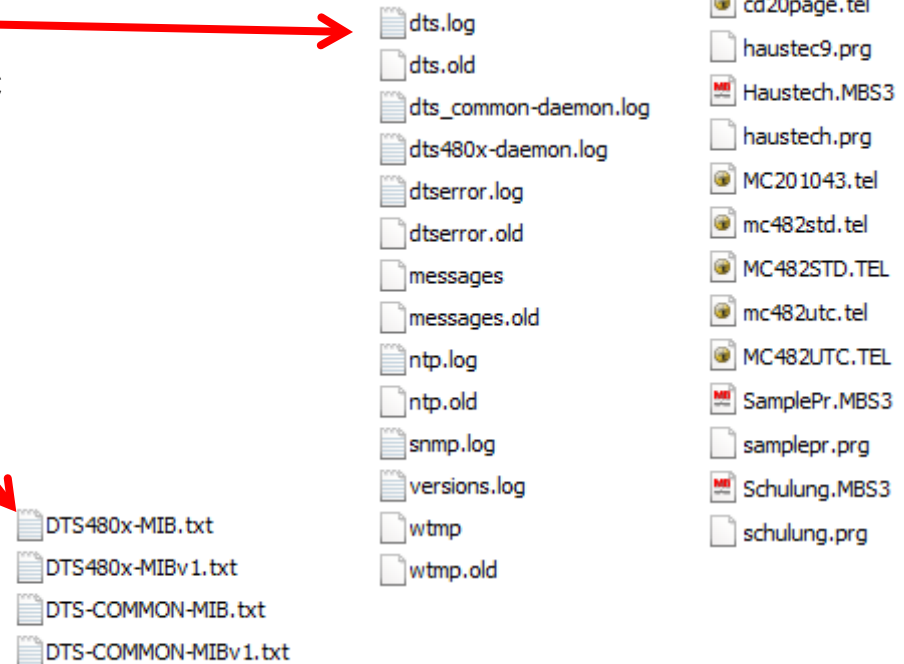
- Go back to the directory **`/var`** and change to sub-directory **`/var/log`**

➔ Here you find all the log files

- Copy all the files into an empty folder on you PC

- Go back to the root directory and change to sub-directory **`/etc/snmp/mibs`**

➔ Here you find the SNMP MIB-files of the device



## 2. Firmware update of network devices



### Topics:

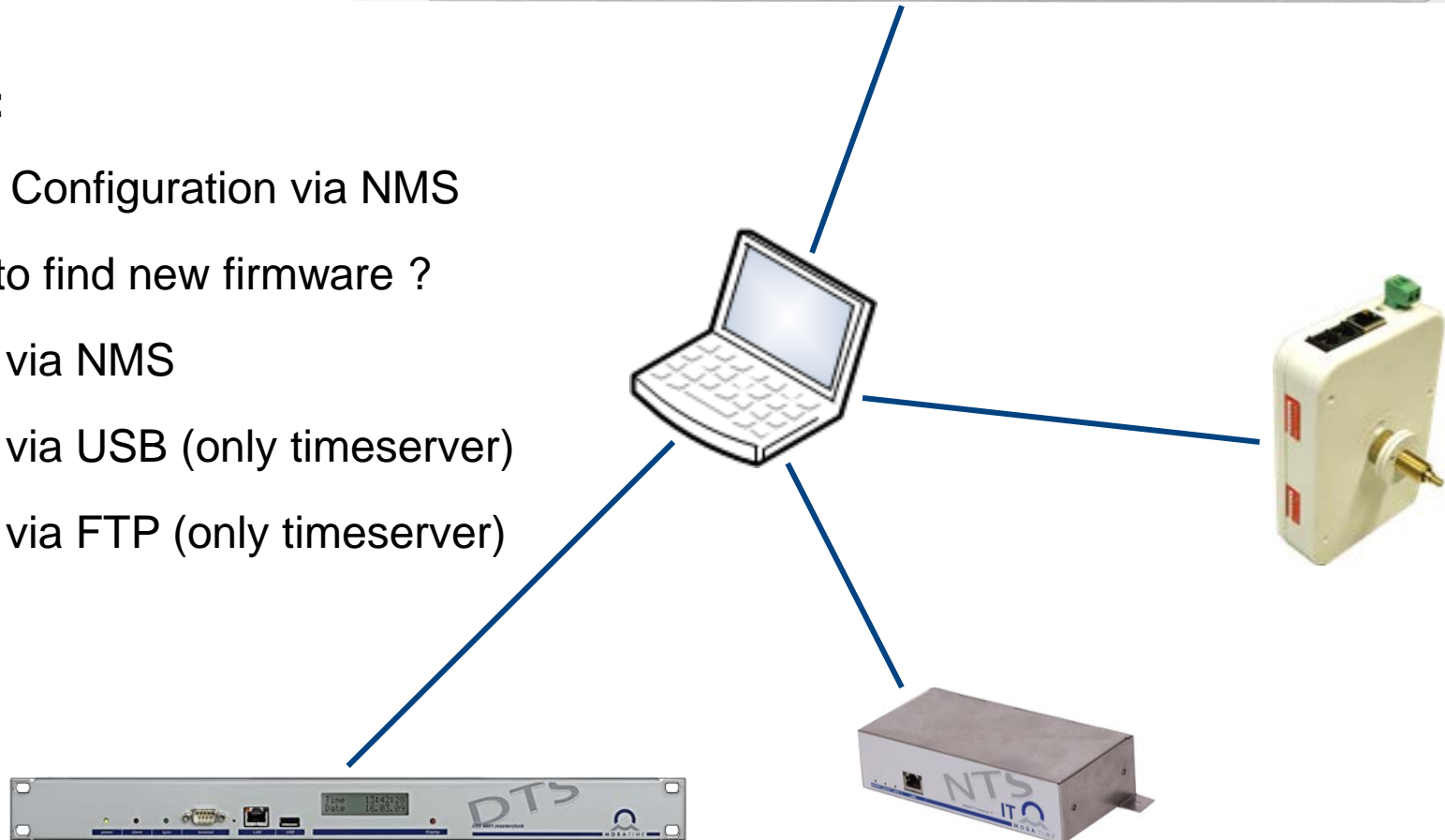
Backup Configuration via NMS

Where to find new firmware ?

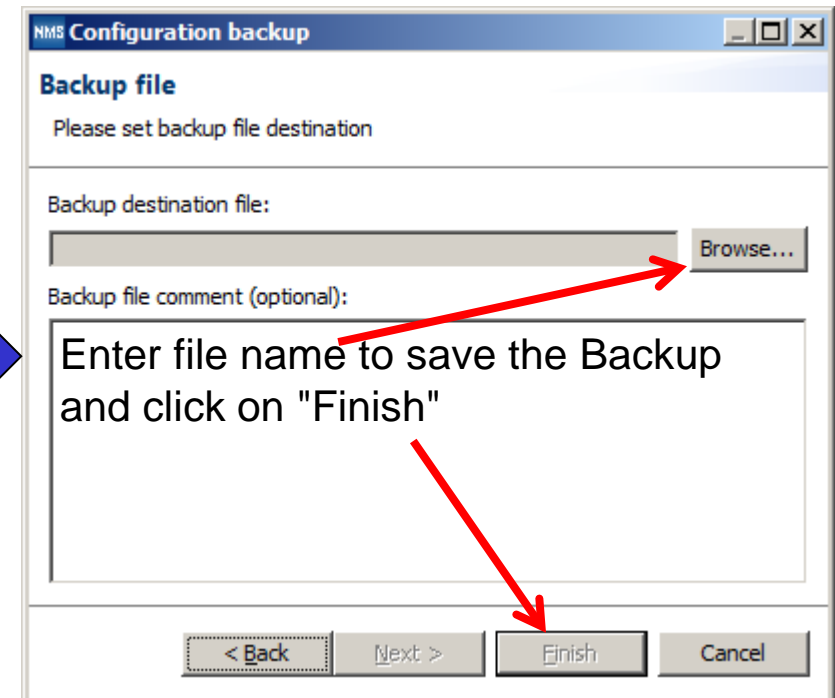
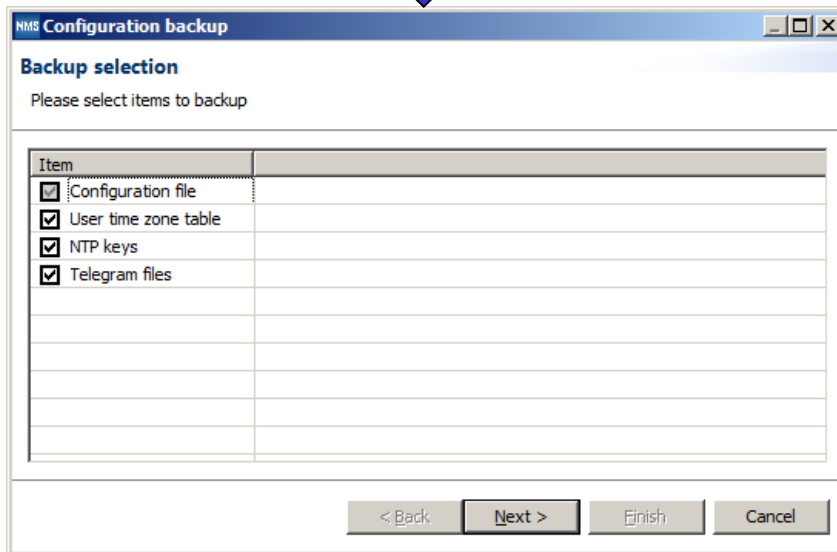
Update via NMS

Update via USB (only timeserver)

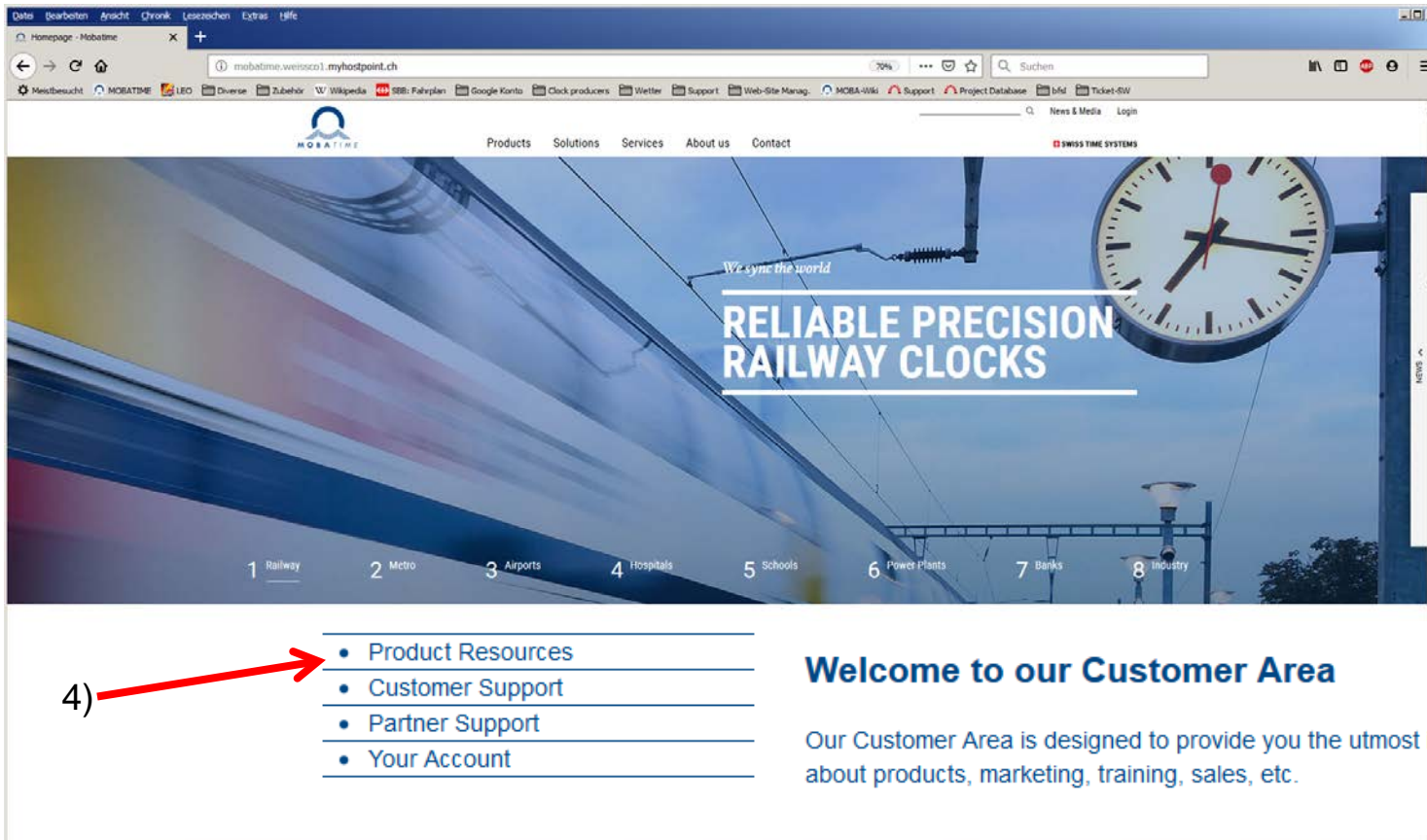
Update via FTP (only timeserver)



Select you device in MOBA-NMS Device view and click on menu:  
"Edit" – "Backup Configuration..." or this Icon



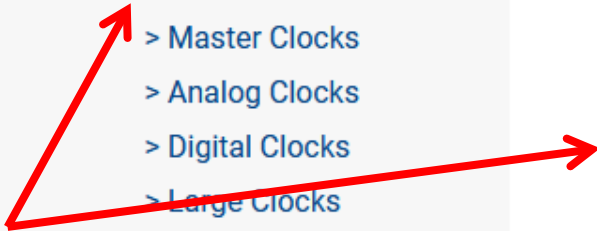
- 1) Open [www.mobatime.com](http://www.mobatime.com) and click on "Login"
- 2) Enter Username and Password to log in or register, if you have no account !  
After registering, you'll get an email. Click on the link in the email, to activate your account.
- 3) Once you are logged in, you reach the "Customer area"
- 4) Click on "Product Resources"



## Welcome to our Customer Area

Our Customer Area is designed to provide you the utmost informational resources about products, marketing, training, sales, etc.

## 5) Select you product from product list, e.g. DTS 4801 masterclock

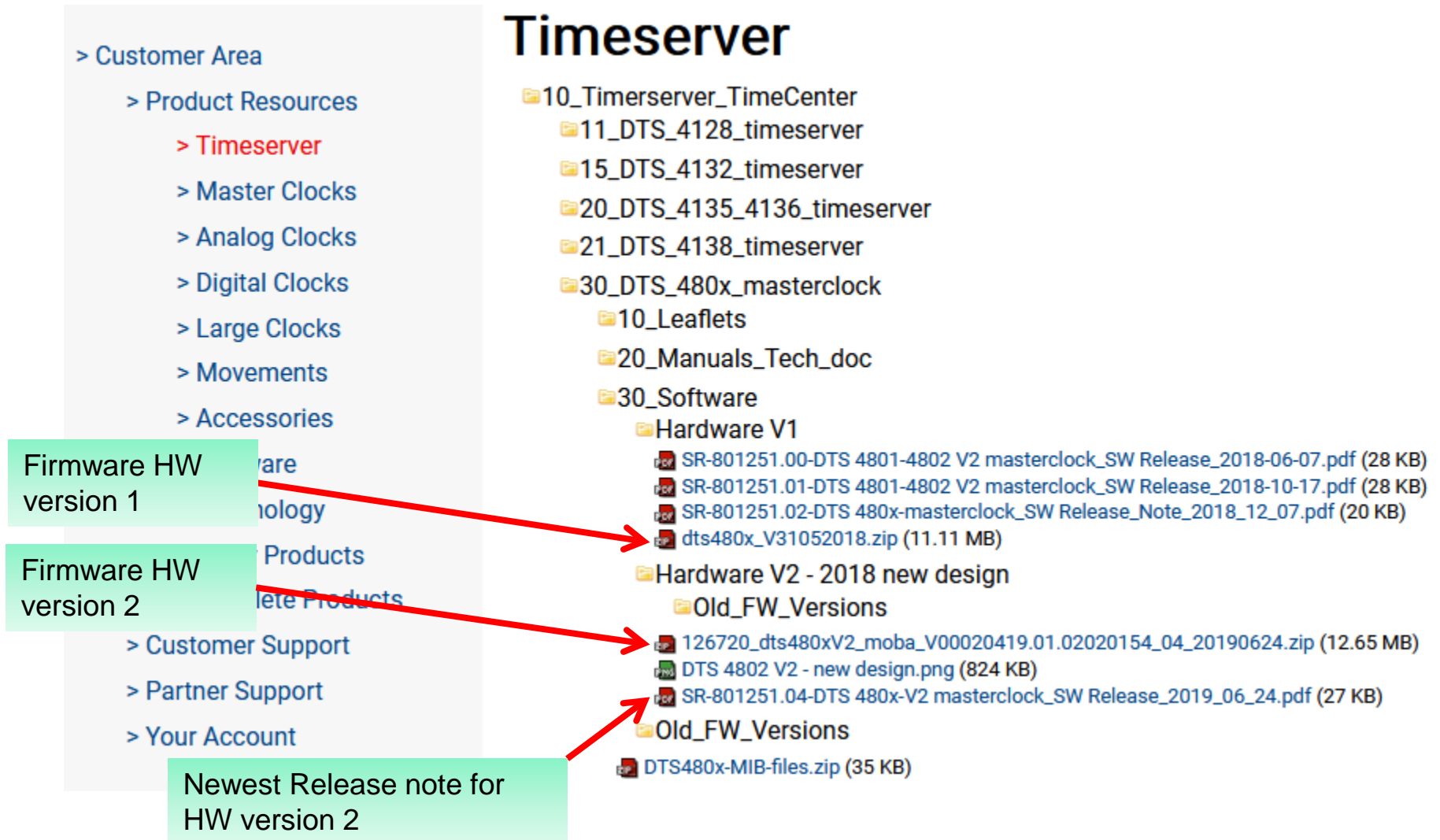
1) 

- > Customer Area
  - > Product Resources
    - > **Timeserver**
    - > Master Clocks
    - > Analog Clocks
    - > Digital Clocks
    - > Large Clocks
    - > Movements
    - > Accessories
    - > Software
    - > Technology
    - > Other Products
    - > Obsolete Products
  - > Customer Support
  - > Partner Support
  - > Your Account

### Timeserver

- 10\_Timerserver\_TimeCenter
  - 11\_DTS\_4128\_timeserver
  - 15\_DTS\_4132\_timeserver
  - 20\_DTS\_4135\_4136\_timeserver
  - 21\_DTS\_4138\_timeserver
  - 30\_DTS\_480x\_masterclock
    - 10\_Leaflets
    - 20\_Manuals\_Tech\_doc
    - 30\_Software
      - Hardware V1
      - Hardware V2 - 2018 new design
        - Old\_FW\_Versions
          - 126720\_dts480xV2\_moba\_V00020419.01.02020154\_04\_20190624.zip (12.65 MB)
          - DTS 4802 V2 - new design.png (824 KB)
          - SR-801251.04-DTS 480x-V2 masterclock\_SW Release\_2019\_06\_24.pdf (27 KB)
        - Old\_FW\_Versions
          - DTS480x-MIB-files.zip (35 KB)
  - 35\_DTS\_4020\_timebridge
  - 40\_DTS\_4148\_Grandmaster
  - 41\_DTS\_4160\_grandmaster
  - 42\_DTS\_4150\_grandmaster
  - 45\_DTS\_4210\_timecenter
  - 60\_Network\_Timeserver\_NTS
  - 61\_NTS-IT

6) In section "30\_Software" you find the newest firmware and release notes:  
e.g. for DTS 480x version 2 HW (new design from 2018)



## Timeserver

- > Customer Area
  - > Product Resources
    - > **Timeserver**
    - > Master Clocks
    - > Analog Clocks
    - > Digital Clocks
    - > Large Clocks
    - > Movements
    - > Accessories

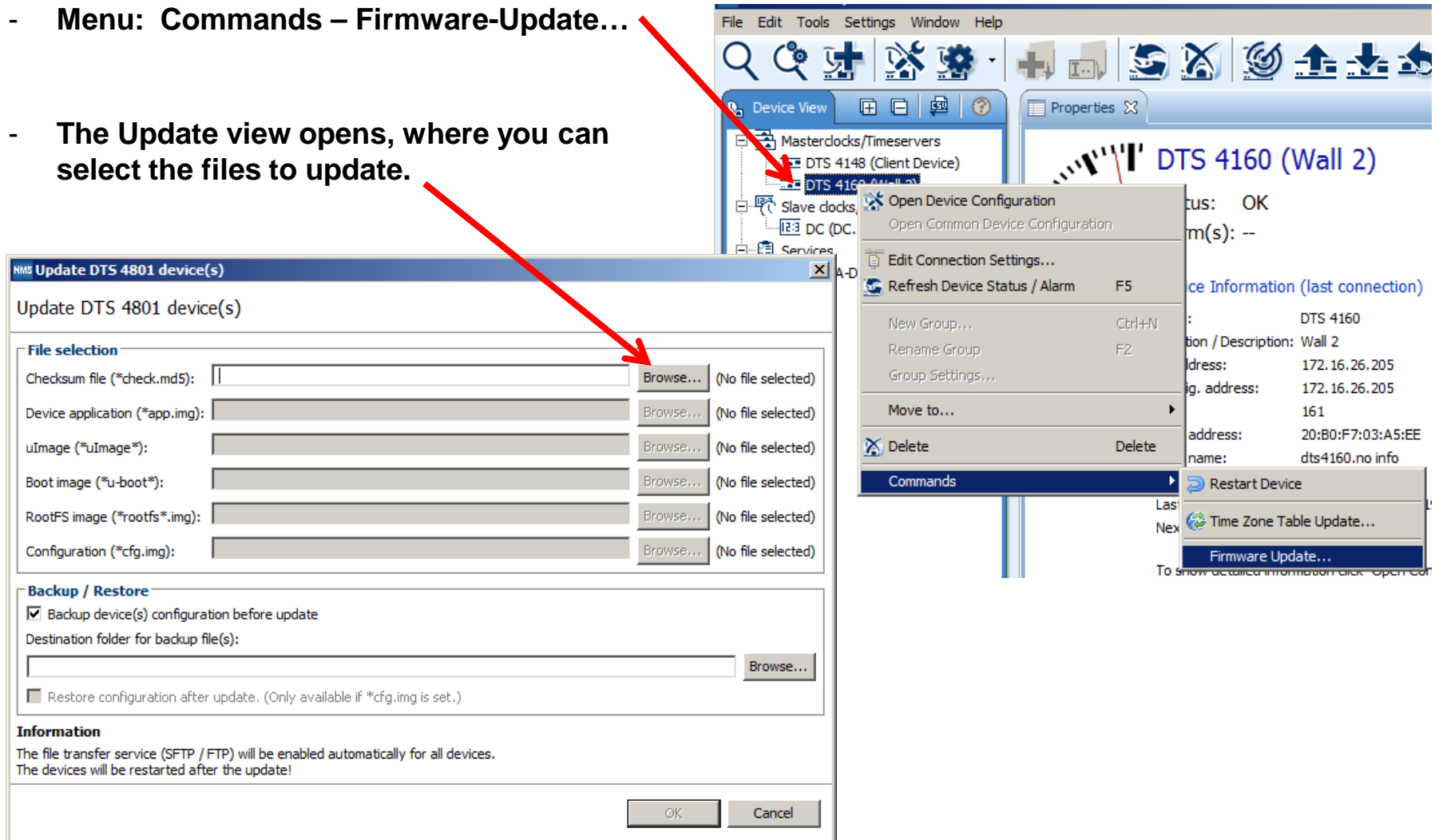
- 10\_Timerserver\_TimeCenter
  - 11\_DTS\_4128\_timeserver
  - 15\_DTS\_4132\_timeserver
  - 20\_DTS\_4135\_4136\_timeserver
  - 21\_DTS\_4138\_timeserver
  - 30\_DTS\_480x\_masterclock
    - 10\_Leaflets
    - 20\_Manuals\_Tech\_doc
    - 30\_Software
      - Hardware V1
        - SR-801251.00-DTS 4801-4802 V2 masterclock\_SW Release\_2018-06-07.pdf (28 KB)
        - SR-801251.01-DTS 4801-4802 V2 masterclock\_SW Release\_2018-10-17.pdf (28 KB)
        - SR-801251.02-DTS 480x-masterclock\_SW Release\_Note\_2018\_12\_07.pdf (20 KB)
        - dts480x\_V31052018.zip (11.11 MB)
      - Hardware V2 - 2018 new design
        - Old\_FW\_Versions
          - 126720\_dts480xV2\_moba\_V00020419.01.02020154\_04\_20190624.zip (12.65 MB)
          - DTS 4802 V2 - new design.png (824 KB)
          - SR-801251.04-DTS 480x-V2 masterclock\_SW Release\_2019\_06\_24.pdf (27 KB)
        - Old\_FW\_Versions
          - DTS480x-MIB-files.zip (35 KB)

Firmware HW version 1

Firmware HW version 2

Newest Release note for HW version 2

- Click with **right mouse button** on the device you want to upgrade
- Menu: **Commands – Firmware-Update...**
- The Update view opens, where you can select the files to update.



The screenshot illustrates the MOBA-NMS interface during a firmware update. A right-click context menu is open over a device, with the 'Commands' menu item selected and 'Firmware Update...' highlighted. The 'Update DTS 4801 device(s)' dialog is also visible, showing the 'File selection' section with fields for Checksum file, Device application, uImage, Boot image, RootFS image, and Configuration, each with a 'Browse...' button. The 'Backup / Restore' section is checked, and the 'Information' section provides details about the update process.

**Update DTS 4801 device(s)**

Update DTS 4801 device(s)

**File selection**

Checksum file (\*check.md5):  Browse... (No file selected)

Device application (\*app.img):  Browse... (No file selected)

uImage (\*uImage\*):  Browse... (No file selected)

Boot image (\*u-boot\*):  Browse... (No file selected)

RootFS image (\*rootfs\*.img):  Browse... (No file selected)

Configuration (\*cfg.img):  Browse... (No file selected)

**Backup / Restore**

Backup device(s) configuration before update

Destination folder for backup file(s):  Browse...

Restore configuration after update. (Only available if \*cfg.img is set.)

**Information**

The file transfer service (SFTP / FTP) will be enabled automatically for all devices.  
The devices will be restarted after the update!

OK Cancel



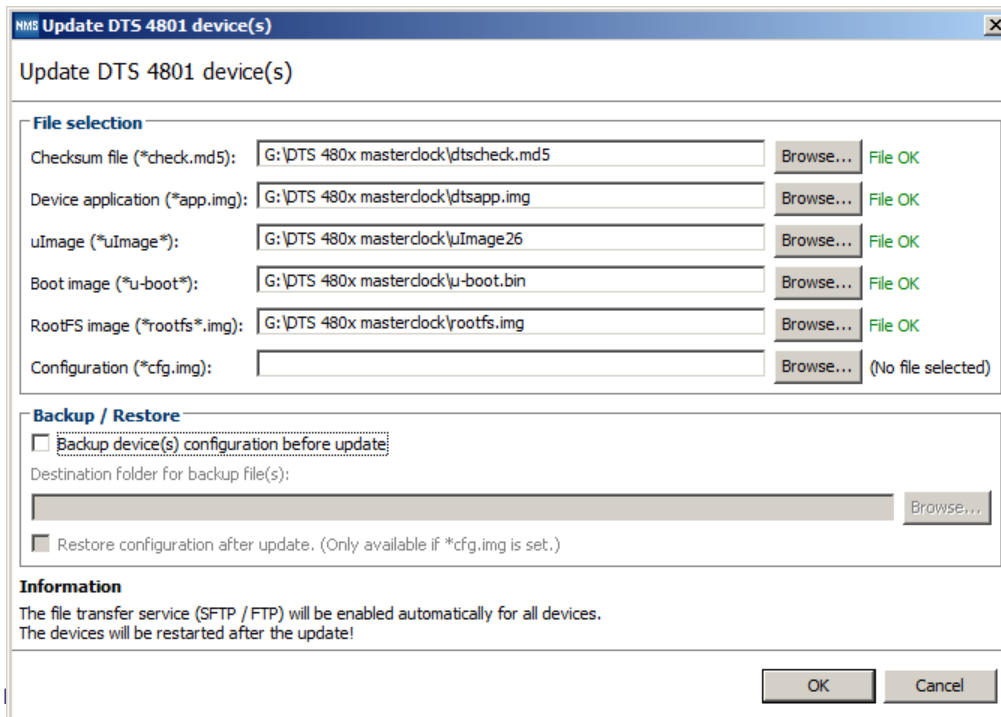
- Check in the Release Note form (SR-80xxxx.xx ) which files changed:  
In this example the following images changed:

- dtsapp.img
- rootfs.img
- u-boot.bin

- ➔ Be carefully: if you update the **dtscfg.img** in older devices, it might be you will loose some of the settings in the DTS device.

- We recommend to update all images.  
Therefore, also backup is always recommended.

- Press OK to start the update



**MMS Update DTS 4801 device(s)**

Update DTS 4801 device(s)

**File selection**

Checksum file (\*check.md5): G:\DTS 480x masterdock\dtscheck.md5  File OK

Device application (\*app.img): G:\DTS 480x masterdock\dtsapp.img  File OK

uImage (\*uImage\*): G:\DTS 480x masterdock\uImage26  File OK

Boot image (\*u-boot\*): G:\DTS 480x masterdock\u-boot.bin  File OK

RootFS image (\*rootfs\*.img): G:\DTS 480x masterdock\rootfs.img  File OK

Configuration (\*cfg.img):  (No file selected)

**Backup / Restore**

Backup device(s) configuration before update:

Destination folder for backup file(s):

Restore configuration after update. (Only available if \*cfg.img is set.)

**Information**

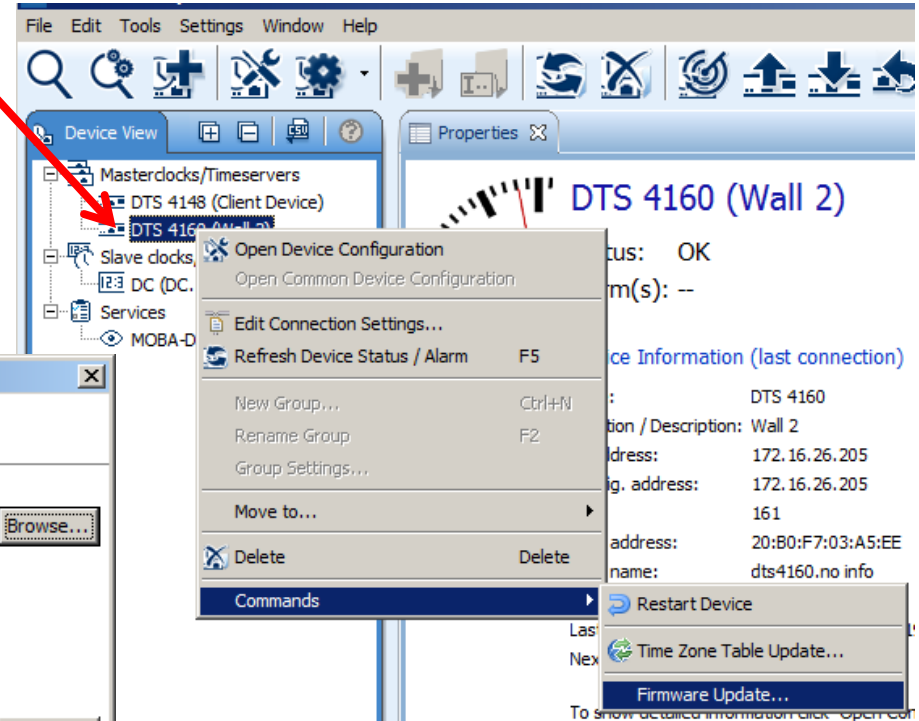
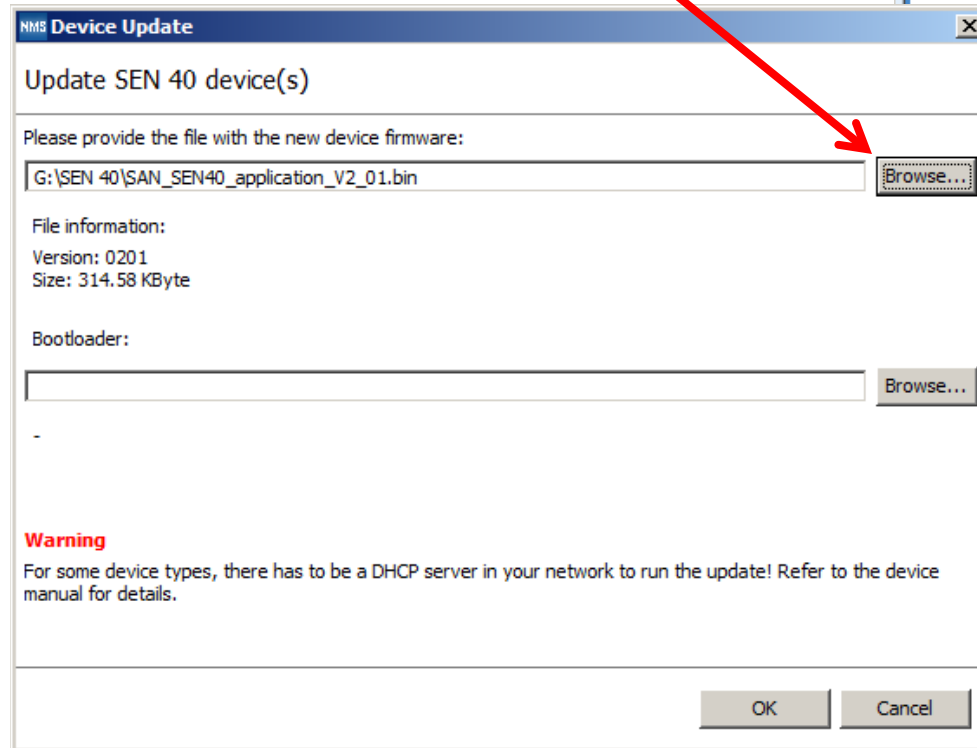
The file transfer service (SFTP / FTP) will be enabled automatically for all devices.  
The devices will be restarted after the update!

No.: SR-800674.11	
Affected File(s):	
<b>ProductVersion:</b>	
- 02170214.05.01030219	
<b>dtsapp.img</b>	
- dtsapp 203386	V1.11.0000
- timedriver 203387	V1.04.0000
- ntp 203388	V4.2.4p5.0002
- dtscommon agent 203393	V1.00.0001
- dts4801 agent 203394	V1.02.0003
- Language0.res	V1.09
- Language1.res	V1.08
- DTS-COMMON.MIB	200908180800Z
- DTS480X.MIB	201409190547Z
<b>dtscfg.img</b>	
- timezone table: moba	0010
user	0001
<b>rootfs.img (203392)</b>	
- Built 170214.101433	
- Busybox 203391	V1.13.2.0002
- snmpd 203390	V5.4.21.0001
<b>u-boot.bin</b>	
- bootloader 203396	V1.1.4.0004
<b>ulmage26</b>	
- kernel 203389	V2.6.18.0002

- ➔ Important:

- Never break the update procedure
- Check in the release note forms, if there are any requirements for the update, e.g. **do the update in two steps**,....

- Click with mouse button on the device you want to upgrade
- Menu: Commands – Firmware-Update...
- The Update view opens, where you can select the file for the update.



### → Very Important:

- Never break the update procedure
- For slave devices you need a **DHCP server** in the network for the update !  
→ see next page
- Check new firmware version after the update procedure!

**Download link:** <http://www.dhcpserver.de/cms/download/>

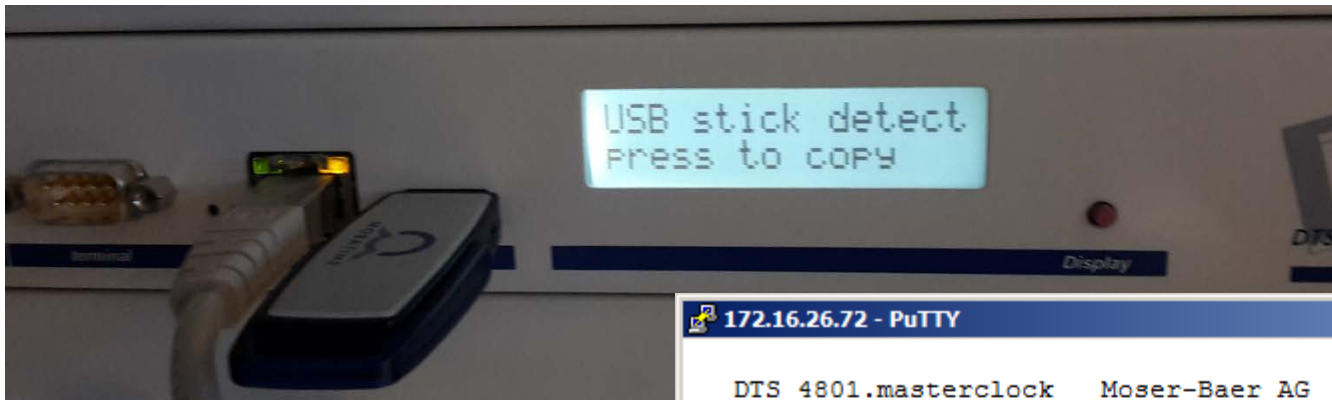
**Remark:** only use it in a network where no DHCP server is available!

**Tool:** dhcpsrv.exe

**Advantages:**

- Very small and simple tool
- No permanent installation required
- Most important settings for DHCP can be done

- Enter USB memory stick with the new files in the root directory (please ensure, you have no other files on the USB stick)
  - Start "Putty" and open config menu via Telnet, SSH or serial connection
  - Go to menu: 3 Maintenance – 2 Update software (USB)
- ➔ Please wait, until the update is finished and the device is restarted again.



172.16.26.72 - PuTTY

DTS 4801.masterclock Moser-Baer AG

## MAINTENANCE

- 1 Update software (FTP)
- 2 Update software (USB)
- 3 Backup configuration and log to USB
- 4 Backup configuration local
- 5 Restore configuration (backup)
- 6 Restore configuration (default MOBA)
- 7 Restart device
- 8 Copy telegram- and program-files

➔ **Very Important:**

- Never break the update procedure
- Check new firmware version after the update procedure!

**Example: DTS 4801.masterclock**

- Start Windows Explorer
- Enter: **ftp://dts@"IP address of the DTS 4801"** → e.g. **ftp://dts@10.242.8.7**
- Enter "User name": **dts** and "Password": **dts**
- ➔ Now you are in the file system of the DTS.
- Change to sub-directory **/ram**
- Copy all the files which shall be updated, from your PC into this directory: **/ram**
- Close FTP connection !
- Start "Putty" and open config menu via Telnet, SSH or serial connection
- Go to menu: **3 Maintenance – 1 Update software (FTP)**
- ➔ Please wait, until the update is finished and the device is restarted again.

**➔ Very Important:**

- Never break the update procedure
- You have to copy the files as Binary files, not Ascii.
- Check new firmware version after the update procedure!

```
DTS 4801.masterclock  Moser-Baer AG
=====
```

## MAINTENANCE

```
1 Update software (FTP)
2 Update software (USB)
3 Backup configuration and log to USB
4 Backup configuration local
5 Restore configuration (backup)
6 Restore configuration (default MOBA)
7 Restart device
8 Copy telegram- and program-files
```



**Thank you for your attention**