



avmprovidermanager

Version 1.8

2020-03-18

User Documentation

What is it?

Avmprovidermanager is a tool, which enables the user to flash provider profiles into the FRITZ!Box. We provide it to our provider customers in company with a for their purpose suited provider profile. This profile can be flashed into FRITZ!Box before the provider sends it to the customer. The aim is to get as much configuration done as possible, so that the customer which connects the FRITZ!Box to the internet can use all of the provider's services (i.e. internet, VoIP, IPTV) at ease (zero touch provisioning).

Who should use this?

We provide this tool for internet providers and refurbishers to use it before sending new FRITZ!Boxes to their end customers or to refurbish FRITZ!Boxes, which came back from their end customers. It is not intended that providers send this tool to their end customers. Avmprovidermanager is confidential. **Any form of propagation to end customers or other third parties is prohibited.**

Prerequisites

To use avmprovidermanager, you have to assure the following prerequisites are met:

- host system: avmprovidermanager can be executed under **Windows** (32 or 64) or **Linux** (32 or 64)
- because this tool will connect to FRITZ!Box while it is booting up, avmprovidermanager needs quick access to the network interface. When executing it in a virtual machine this may lead to connection failures due to timeouts. Therefore we recommend to use it on a **dedicated machine** and **not in a virtual environment**.
- as avmprovidermanager will be looking for a certain IP address (192.168.178.1), it can be useful to set a static IP configuration, where the host system has an IP in subnet 192.168.178.0/24 and the default gateway is set to 192.168.178.1 (default IP of FRITZ!Box). For an example of the IP configuration under Windows see Figure 1.

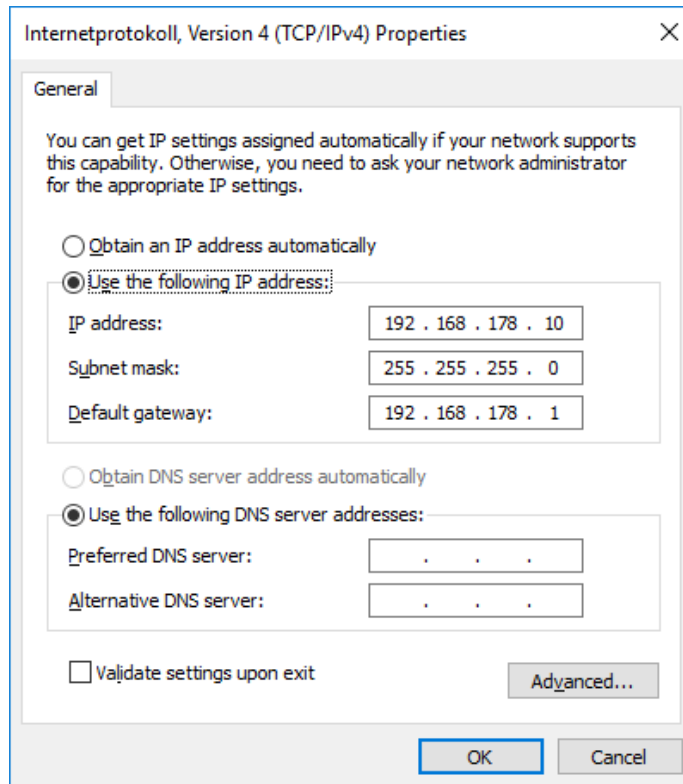


Figure 1: example for IP-config in Windows

Usage instructions

Avmprovidermanager is a command line tool, which can be controlled by passing command-line parameters. The following functions are supported:

- **Show version:** `avmprovidermanager.exe -v`
- **Show help:** `avmprovidermanager.exe -h`
- **Flash Profile:** `avmprovidermanager.exe -t <profile> <signature> [-toXX]`
 - Any provider profile will come with a signature file, so its integrity can be checked against AVM's public key. If the integrity check fails, avmprovidermanager will abort flashing the profile. With an optional timeout parameter you can control for how long the providermanager will search for a connected FRITZ!Box. XX is the number of seconds. If the timeout is omitted, the default timeout is 10 seconds (equals `-to10`). The flashing will wipe any user data on the FRITZ!Box and write the provider profile. If there is already a profile on the FRITZ!Box it will be overwritten.
- **Restart FRITZ!Box:** `avmprovidermanager.exe -j [-toXX]`
 - After flashing a profile FRITZ!Box will stay in flash mode. If you want to test the profile after flashing, you can restart the FRITZ!Box. Default timeout is 10 seconds.

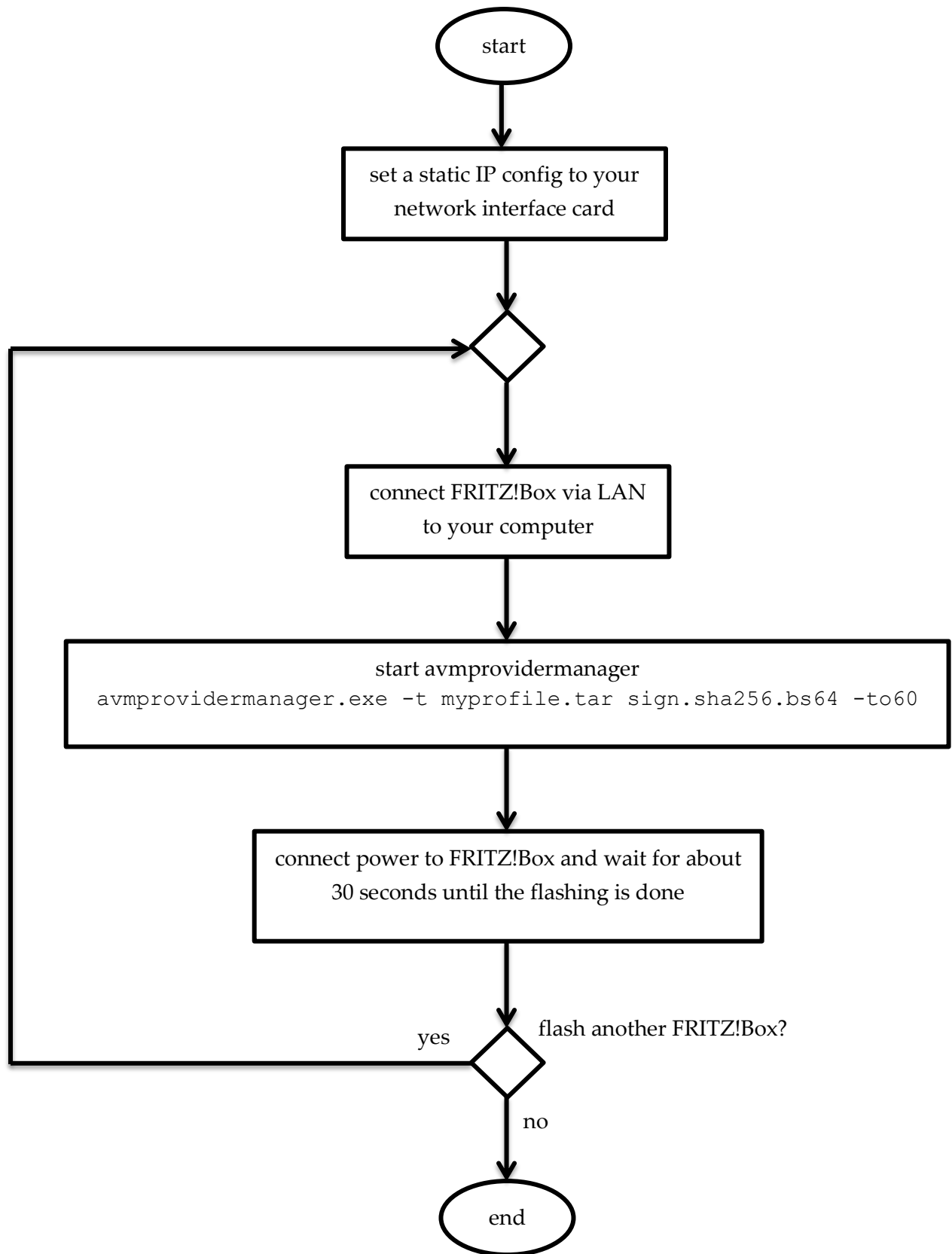
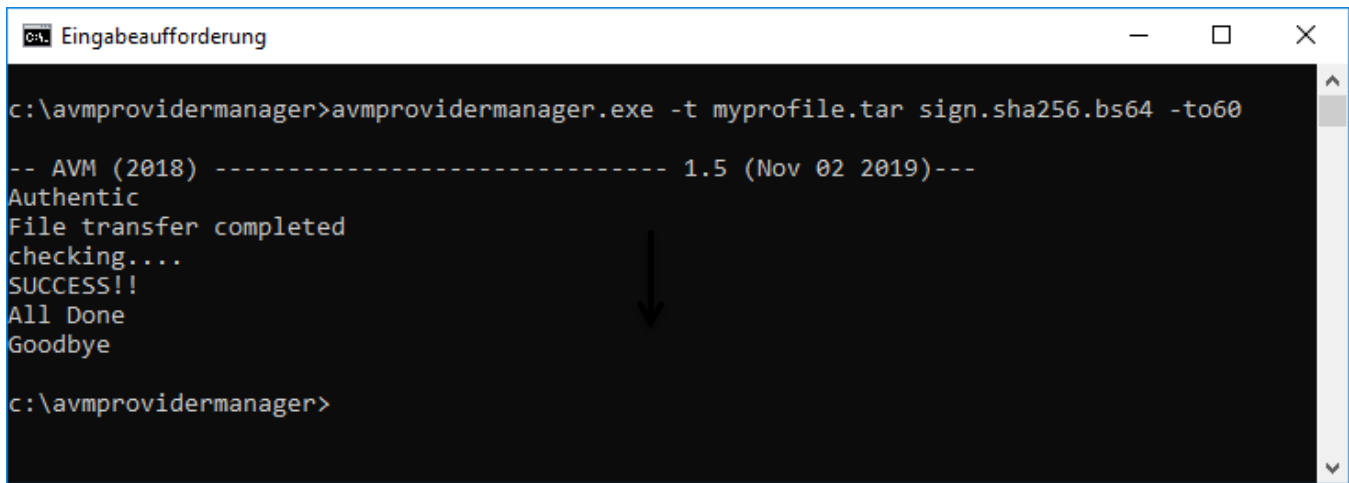


Figure 2: flash process

Output of avmprovidermanager



```
c:\avmprovidermanager>avmprovidermanager.exe -t myprofile.tar sign.sha256.bs64 -to60

-- AVM (2018) ----- 1.5 (Nov 02 2019)---
Authentic
File transfer completed
checking...
SUCCESS!!
All Done
Goodbye

c:\avmprovidermanager>
```

Figure 3: Successful flash process

At first avmprovidermanager will verify the integrity of the provider profile (in this example myprofile.tar). If the profile can be verified by its signature (file sign.sha256.bs64) against AVM's public key (file avmpub.key), the manager will print `Authentic`. Then you have to connect the power supply to the FRITZ!Box. After the manager discovers the FRITZ!Box, it will flash the profile und check if the data was transferred correctly. If this check succeeds, you get the message `SUCCESS!!` and the manager terminates. After termination you get a new file `out.txt`, which contains information about this specific FRITZ!Box. An example of such a file is shown in Figure 4. After a successful flash the field `provider` should contain the name of the profile you just flashed. `SerialNumber` can be useful to identify a specific box, especially when you plan to flash several boxes at once. With every flash process the `out.txt` will be overwritten, so we recommend to rename it, before starting a new flash process (for example using current timestamp as filename).

HWRevision	226
HWSubRevision	4
ProductID	Fritz_Box_HW226
SerialNumber	J31464500003033
annex	A
autoload	yes
bootloaderVersion	1.3258
firstfreeaddress	0x852852B0
firmware_info	154.06.98,recovered=1
firmware_version	avme
flashsize	nor_size=0MB sflash_size=0KB nand_size=512MB
maca	E0:28:6D:73:4F:9F
macb	E0:28:6D:73:4F:A0
macwlan	E0:28:6D:73:4F:A1
macwlan2	E0:28:6D:73:4F:A2
macdsl	E0:28:6D:73:4F:9C
memsize	0x08000000
mtd0	0x0,0x2C00000
mtd1	0x500000,0xD00000
mtd2	0x0,0x100000
mtd3	0x100000,0x500000
mtd4	0xD00000,0x1500000
mtd5	0x1500000,0x20000000
my_ipaddress	192.168.178.1
prompt	Eva_AVM
provider	myprofile
tr069_passphrase	
tr069_serial	
usb_board_mac	E0:28:6D:73:4F:9D
usb_device_id	0x0000
usb_device_name	USB DSL Device
usb_manufacturer_name	AVM
usb_revision_id	0x0000
usb_rndis_mac	E0:28:6D:73:4F:9E
webgui_pass	
wlan_key	
wlan_ssid	FRITZ!Box#7590#UN

Figure 4: example of an out.txt

Simple Flash Script for Windows

```
@echo off
Setlocal EnableDelayedExpansion
set TARFILE=myprofile.tar
set LOGFOLDER=flashlogs
set WORKDIR=%~dp0
cd %WORKDIR%
mkdir %LOGFOLDER% >nul 2>&1

:loop
cls
color 0F
echo Please connect FRITZ!Box via LAN and press ENTER
pause >nul

echo.
echo Please connect the power plug of FRITZ!Box now...
echo.
avmprovidermanager.exe -t %TARFILE% sign.sha256.bs64 -to60

for /f %%I in ('wmic os get localdatetime ^|find "20"') do set DATETIME=%%I
set DATETIME=!DATETIME:~0,8!_!DATETIME:~8,6!
set "line="
for /f "delims=" %%a in ('more/e +3 ^< out.txt') do (
    if not defined line set "line=%%a"
)
set SERIALNUMBER=%line:~22,15%

if %ERRORLEVEL%==0 (
    color 0A
    move out.txt %LOGFOLDER%\%DATETIME%_%SERIALNUMBER%_OK.txt >nul 2>&1
) else (
    color 0E
    move out.txt %LOGFOLDER%\%DATETIME%_%SERIALNUMBER%_ERROR.txt >nul 2>&1
)
del out.codec >nul 2>&1
echo.
echo To flash another FRITZ!Box press any key.
pause >nul
goto loop
```

Figure 5: flash.bat

Figure 5 gives a simple example for a flash script. You can copy and paste the script into a Windows batch file (file extension `.bat`) and place it in the same directory as `avmprovidermanager` and your provider profile. It renames every `out.txt` with a timestamp. So if you flash i.e. 10 FRITZ!Boxes you will get 10 logfiles in the folder `flashlogs`. The suffix of every file (`_OK` or `_ERROR`) indicates if the flash process was successful or not. In the example shown in Figure 6 there has been trouble with one of the flash processes (indicated by filename suffix). So you might look at the `SerialNumber` of this specific FRITZ!Box and flash it again.

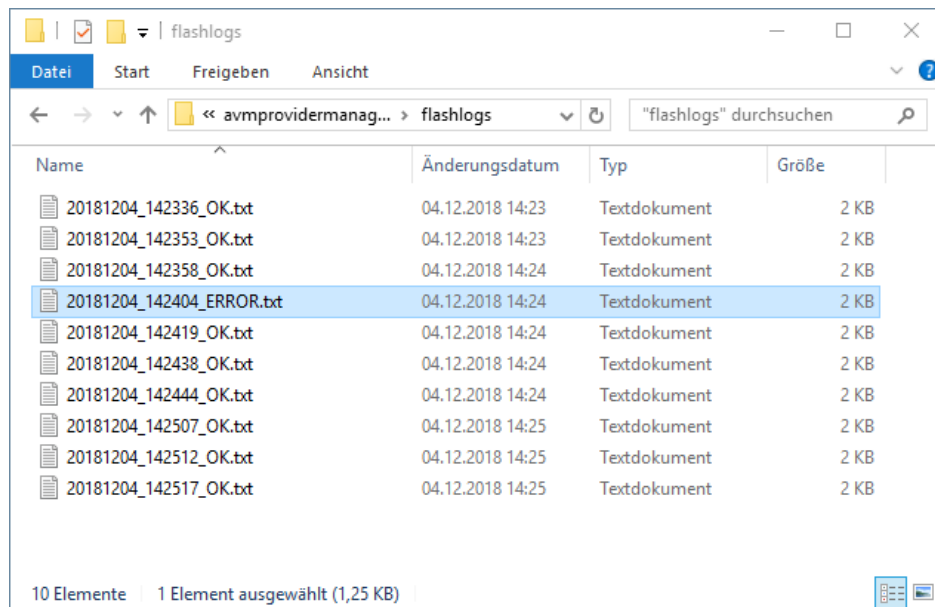
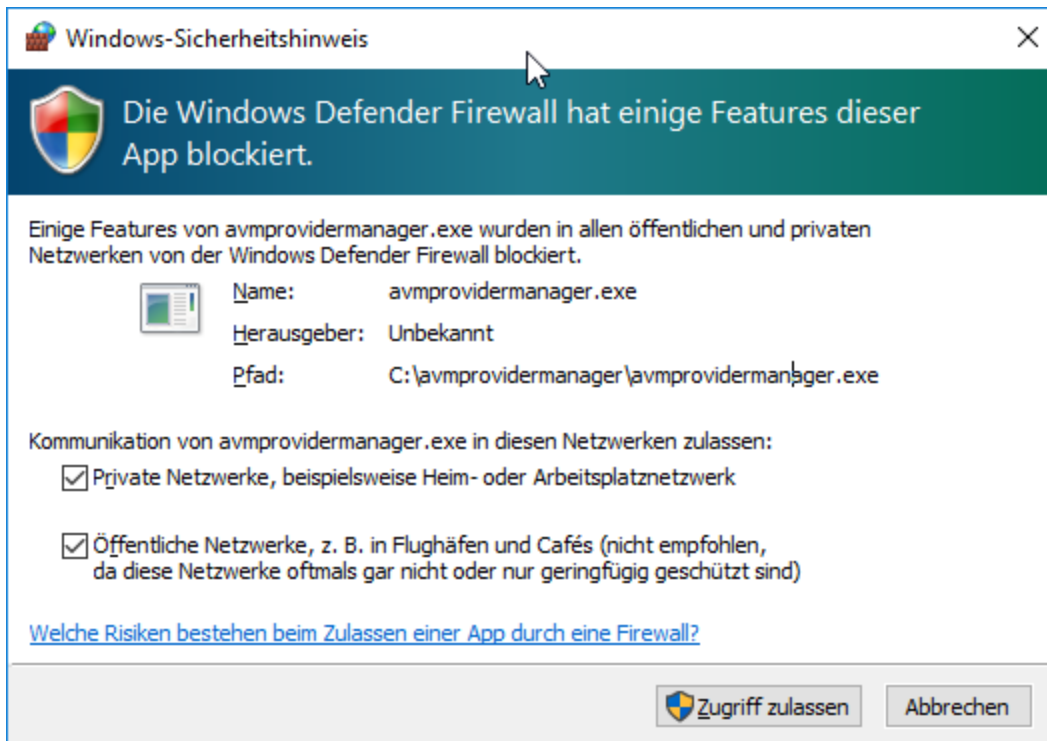


Figure 6: content of logs folder after 10 flash processes

Troubleshooting

If flashing the profile does not work, assure the following points:

- Firewall might be blocking the connection. Especially under a Windows environment this might be a problem. If a firewall notification pops up, make sure to allow access for private and public networks. In favor of ease of use it can also be useful to deactivate the firewall.



- Make sure the static IP configuration is correct (see Figure 1).
- Depending on your system environment it can be necessary avmprovidermanager is executed with admin privileges.
- If avmprovidermanager outputs an error code 13 during execution, this might have been caused by illegal characters in the filename of the provider profile. Only small letters and the symbols '-' and '_' are allowed.

Optional Firmware Update

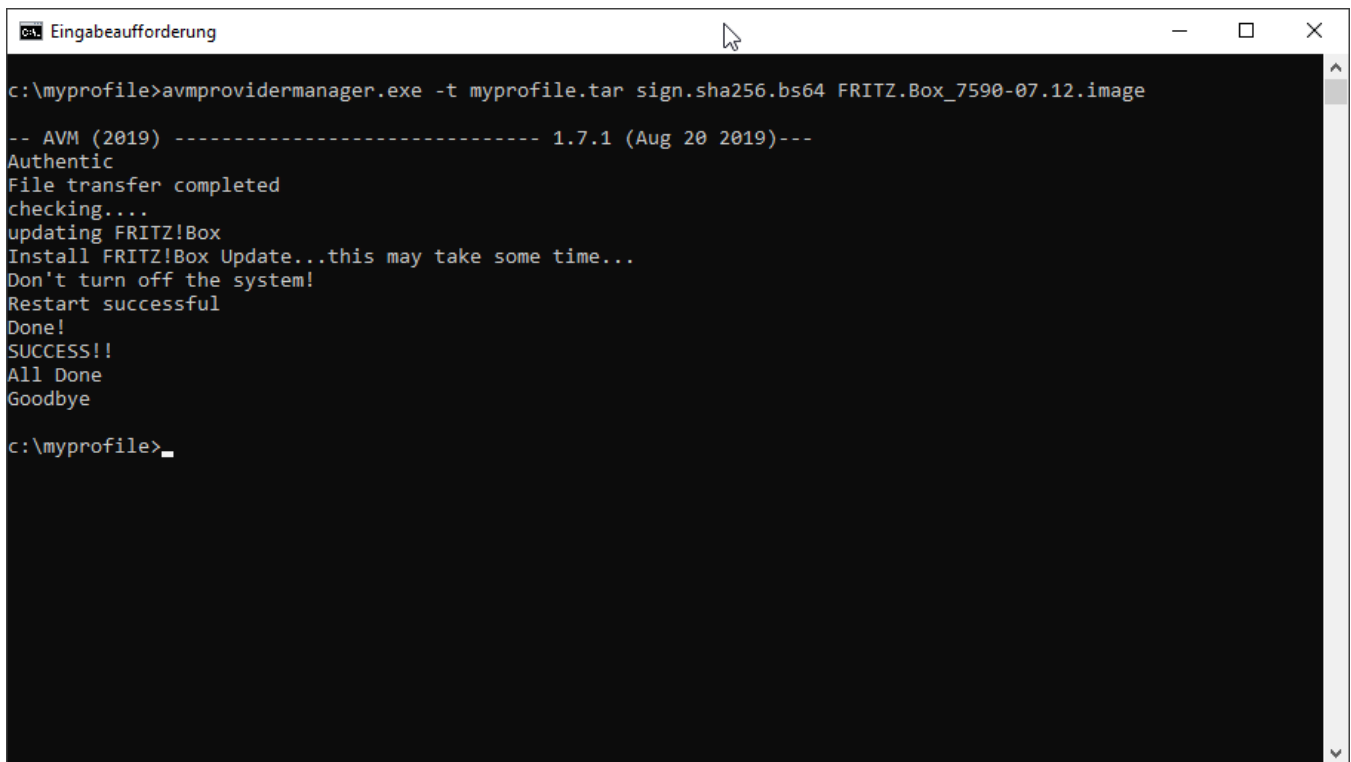
When flashing a provider profile, you also do a FW update with an extra command line parameter:

```
avmprovidermanager.exe -t <profile> <signature> [fw-image] [-toXX]
```

Suitables FW images can be found on here:

<https://ftp.avm.de/fritzbox/>

If you try to flash a FW image, which is not suitable for the device, the process will stop with an error message. Flashing a provider profile plus a FW image takes about 2 minutes.



```
c:\myprofile>avmprovidermanager.exe -t myprofile.tar sign.sha256.bs64 FRITZ.Box_7590-07.12.image

-- AVM (2019) ----- 1.7.1 (Aug 20 2019)---
Authentic
File transfer completed
checking...
updating FRITZ!Box
Install FRITZ!Box Update...this may take some time...
Don't turn off the system!
Restart successful
Done!
SUCCESS!!
All Done
Goodbye

c:\myprofile>_
```

Figure 7: Flashing a provider profile + FW on a FRITZ!Box 7590