

New installation onto an infected PC

Windows 10

Your PC has become infected with malware. You don't know how to correctly reinstall your system? The following step-by-step instructions will help you to reinstall your PC and at the same time reduce the risk of a new infection.

We have tried to draw up as generally applicable a set of instructions for private users as possible. Of course the steps required may differ in specific cases.

These instructions are based on a Windows 10 Pro 64 bit edition, but also apply to 32 bit versions.

To be able to properly reinstall your system in accordance with these instructions, you will need the Windows 10 installation CD plus an external storage medium to back up your data.

Step 1: Disconnect your PC from the network

- If your PC is connected to the network via a cable, simply pull out the network plug.
- In case you are using a wireless network (WLAN), you should activate the flight mode (click the *network symbol* at the bottom right of the taskbar, → click the flight mode button).

Step 2: Backing up personal data

- With the «Shift» key pressed and held down, connect an external storage medium, and back up your personal data. Do not use a «normal» back-up medium to do so, but a new, completely blank one if possible.

PLEASE NOTE: Malware on your PC can lead to your external storage medium and all data stored on it becoming infected too. Malware specifically uses the Autorun function to spread via external storage media (USB stick etc.). It is relatively simple to temporarily deactivate this Autorun function. To do so, press and hold the «Shift» key on your keyboard. Then connect the external storage medium to your computer and only let go of the «Shift» key a short time later. In this case, the «Shift» key prevents Windows from automatically executing programs and files on the external storage medium.

Step 3: Cleaning the Master Boot Record (MBR)

Certain computer viruses will infiltrate the so-called Master Boot Record (MBR) of your PC. For this reason, this should be rewritten and cleaned this way. Use the «bootrec.exe» utility in the Windows restore environment to do so.

- Insert your Windows 10 installation CD into your drive and restart your PC.
- If your PC does not boot from the CD inserted after this restart, set the CD drive as the first device in the PC BIOS (see mainboard manual). Alternatively, press the «F8» function key straight after starting the PC. This will take you to the boot manager where you can select the CD drive.
- Press a key when you are asked to do so.
- Select an installation language, time and currency format, keyboard or method of entry, and then click *Continue*.
- Click on *Computer repair options* at the bottom left.
- Click *Troubleshooting*.
- Click *Advanced Options*.

- In the Advanced Options dialogue box, click *Command prompt*.
- Enter «bootrec.exe /fixmbr» and then press the *Enter* key. This will restore the MBR (thus deactivating the MBR rootkit functionality of any malware).
- Close the Command prompt and use *Shut down* to close your PC down. Leave the Windows 10 installation CD in the drive.

Step 4: Reinstallation of Windows 10

- Restart your PC.
- If your PC does not boot from the CD inserted after this restart, set the CD drive as the first device in the PC BIOS (see mainboard manual). Alternatively, press the «F8» function key straight after starting the PC. This will take you to the boot manager where you can select the CD drive.
- Press a key when you are asked to do so.
- Select an installation language, a time and currency format, a keyboard or method of entry, and then click *Continue*.
- Now you need to click on *Install now*.
- In the course of installation, please select *Custom: Install Windows only (advanced)* as type of installation required.
- You can now delete, newly create and format partitions.

WARNING: When you delete or format a partition, all data on the partition will be lost!

PLEASE NOTE: To make sure there is no malware present on your PC any longer, you must delete the existing partitions and create them once again. Afterwards, the newly created partitions should be formatted. Please also note that there may be a recovery partition created by the manufacturer present. This should not be deleted or formatted.

- To continue with the Installation in the selected partition, click *Continue*.

WARNING: Once the system reboots, a screen entitled «Get going fast» appears. You should not click on *Use express settings* here!

- Click *Customize settings* at the bottom left.

PLEASE NOTE: As long as you choose your settings by selecting the above, you can prevent Windows transmitting too many data to Microsoft which you don't want transmitted to them. On the following three pages, you should therefore switch all settings to «off». With one exception: On the third page, you should use setting «User SmartScreen online service to help protect against malicious content and downloads in sites loaded by Windows browsers and Store apps.» to «On», since this SmartScreen filter serves to block websites and downloads containing malware. You can find our check-list with additional useful information on privacy under Windows 10 here: www.ebas.ch/checklistWin10Privacy_pdf_en.

- Finish installing Windows 10 with the recommended settings.
- Reconnect your PC to the Internet (insert network plug).
- Update your operating system by clicking the magnifying glass at the bottom left in the task bar and entering «Windows update» there. Now click *Look for updates* and do the same again in the next window. Updates will now be installed automatically.

Step 5: Installing antivirus software

- Install antivirus software from a trustworthy source and update this using the integrated update function.

PLEASE NOTE: A list of recommended antivirus software can be found under www.ebas.ch/5steps_step2.

Step 6: Installing and updating programs

- Install the required programs. Update all programs, and activate the auto-update function wherever possible.

PLEASE NOTE: Please make sure to only install programs from trustworthy sources (e. g. manufacturer download sites or software archives such as PCTipp, Heise etc.).

Step 7: Scanning data

- Hold down the «shift» key and connect the external storage medium with the data backed up previously to your PC.

PLEASE NOTE: In case malware was copied to the external storage medium when backing up your data, your PC can become reinfected! To prevent this, if possible, it is mandatory to hold down the «Shift» key when connecting the external storage medium (see note under step 2).

- Scan the whole system and the external storage medium using the antivirus software installed previously. In case any infected files are found, you should ask to clean or delete them!

PLEASE NOTE: A better, yet more elaborate alternative to scanning via the newly installed system would be to check your external storage medium via a bootable live CD or from another operating system (e. g. Linux, macOS).

Step 8: Restoring data

- Restore your backed-up data from the external storage medium to the PC.

Step 9: Other vital things to do!

- As malware very frequently captures user names and passwords nowadays, you should make sure to change all passwords on your system itself, but also all passwords to log into any websites (e. g. e-banking, e-mail access, Facebook etc.).
- In addition you should closely check your e-banking and credit card statements.

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Hochschule Luzern – Informatik
Campus Zug-Rotkreuz, Suurstoffi 41b
CH-6343 Rotkreuz