

Instructions for the EWF and UWF

Write protection for Windows

Generally

Windows® XP, Windows® 7 and Windows® 8 embedded operating systems are delivered by default with EWF protection. This so-called Enhanced Write Filter prevents write accesses to a protected drive (SSD/HDD) and therefore unintentional system changes (blue screens, viruses, user errors, etc.). In Windows® 10 IoT the name has changed to UWF Unified Write Filter.

- The "C" system partition is EWF/UWF protected by default
- The "D" data partition is not EWF/UWF protected by default
- Advantage: clean, fast system without viruses and blue screens

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1 The EWF Filter

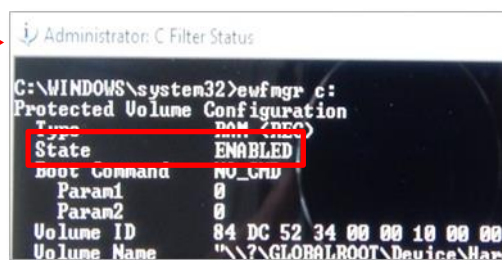
On the desktop of your touch panel you will find three icons for the Enhanced Write Filter control.



„C Filter Status“:

View information about the WEF drive

„double – click“ →



Delivery state: Enabled

„C Filter On“:

Write protection for partition C:
Turn on, effective only after restarting the touch panel

„Filter Off“:

Write protection for partition C:
Turn off, changes are immediately accepted


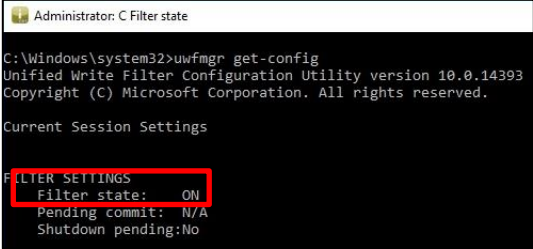



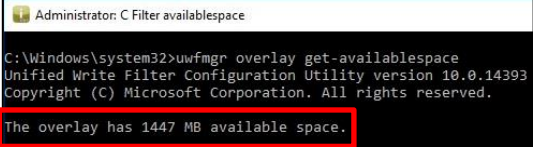
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2 The UEF Filter

2.1 Overview

On the desktop of your touch panel with Windows® 10 IoT you will find four icons for the Unified Write Filter control.

 <p>„C Filter state“: View information about the UWF drive</p>	<p>„double – click“ →</p>	 <p>Administrator: C Filter state C:\Windows\system32\ufwmgr get-config Unified Write Filter Configuration Utility version 10.0.14393 Copyright (C) Microsoft Corporation. All rights reserved. Current Session Settings FILTER SETTINGS Filter state: ON Pending commit: N/A Shutdown pending: No</p> <p style="text-align: right;">Delivery state: On</p>
 <p>„C Filter on“: Write protection for partition C: Turn on, effective only after restarting the touch panel</p>		
 <p>„Filter off“: Write protection for partition C: Turn off, effective only after restarting the touch panel</p>		
 <p>„Filter availablespace“: Show how much space is available for writes to partition C:</p>	<p>„double – click“ →</p>	 <p>Administrator: C Filter availablespace C:\Windows\system32\ufwmgr overlay get-availablespace Unified Write Filter Configuration Utility version 10.0.14393 Copyright (C) Microsoft Corporation. All rights reserved. The overlay has 1447 MB available space.</p>

2.2 Settings

UWF interrupts all write attempts to a protected volume and redirects it to a virtual overlay. After a reboot of the system all changes made to the protected partition are lost. The overlay is actually stored in RAM. But it can be also configure to store the overlay on disc.

The size of the overlay and type is shown when you double click on „C Filter state“.

```
OVERLAY SETTINGS
Type: RAM
Maximum size: 1536 MB
Warning Threshold: 1400 MB
Critical Threshold: 1500 MB
```

When the warning threshold or critical threshold is reached an event log is written in the Windows logo.

If you want to exclude files, folders or registry keys from being filtered, it can be added to an exclusion list. With following commands:

```
ufwmgr file add-exclusion file path
ufwmgr registry add-exclusion registry key
```

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Actually the winevt folder to save Windows logs and the timezone registry keys to allow daylight saving time changes are in the exclusion list.

It is displayed when you double click on **C Filter state**.

```
File Exclusions:
Current Session Exclusions for Volume ad50ba1f-3846-4ae9-9eb6-c75c7fac9038 [C:]
C:\Windows\System32\winevt

REGISTRY EXCLUSIONS
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Time Zones
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformation
```

Attention! Writes to the excluded files and folders will also decrease the available overlay space.

Links

Useful UWF Links:

Unified Write Filter (UWF) feature

[https://msdn.microsoft.com/de-de/library/windows/hardware/mt572001\(v=vs.85\).aspx](https://msdn.microsoft.com/de-de/library/windows/hardware/mt572001(v=vs.85).aspx)

Overlay for Unified Write Filter (UWF)

[https://msdn.microsoft.com/de-de/library/windows/hardware/mt571992\(v=vs.85\).aspx](https://msdn.microsoft.com/de-de/library/windows/hardware/mt571992(v=vs.85).aspx)

Overview and Explanation over all UWF commands

[https://msdn.microsoft.com/de-de/library/windows/hardware/mt572002\(v=vs.85\).aspx](https://msdn.microsoft.com/de-de/library/windows/hardware/mt572002(v=vs.85).aspx)

To allow Windows Defender Updates you can follow these instructions:

[https://msdn.microsoft.com/de-de/library/windows/hardware/mt571986\(v=vs.85\).aspx](https://msdn.microsoft.com/de-de/library/windows/hardware/mt571986(v=vs.85).aspx)

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