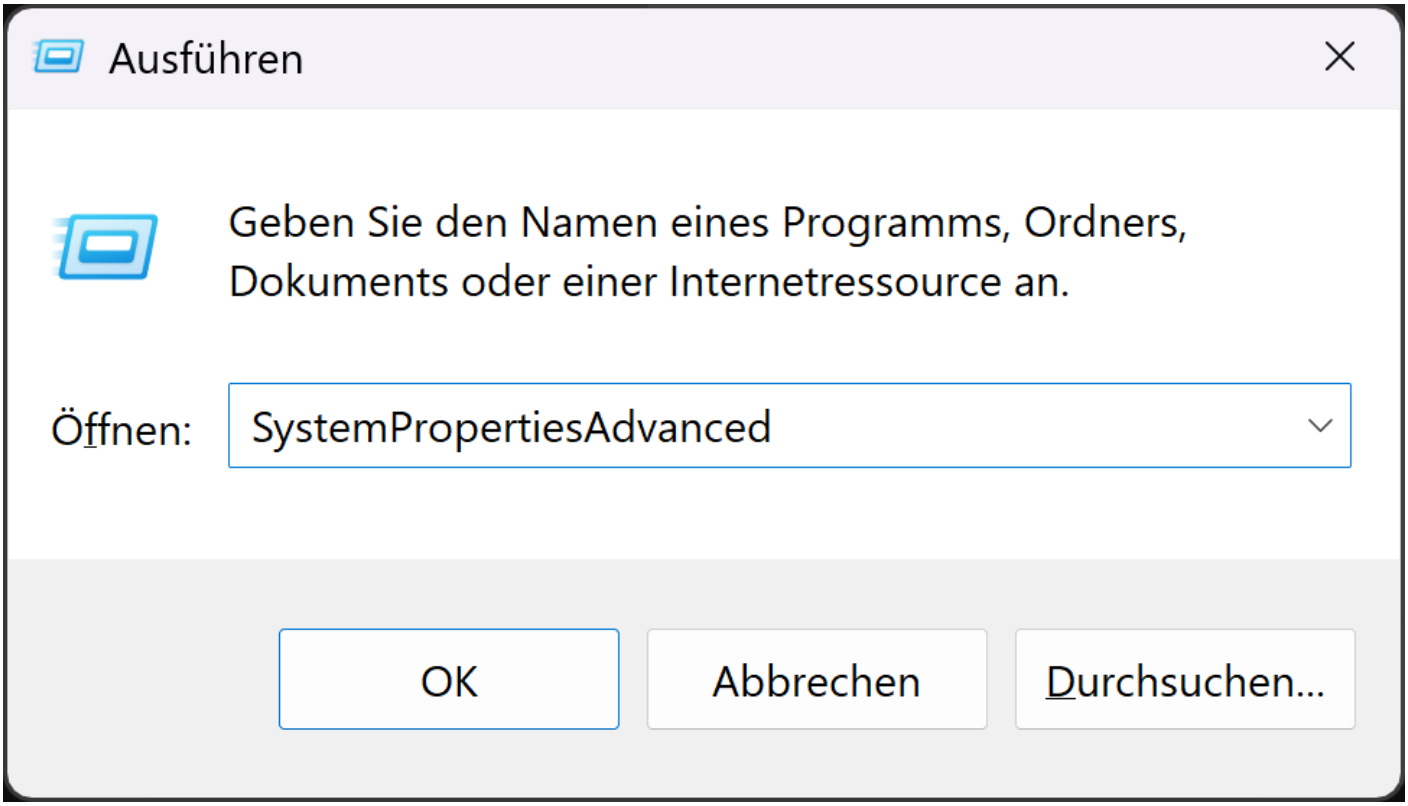
Error Diagnosis

- Enable and Locate Memory Dumps
- System File Integrity Check
- BSOD in Log Event Viewer

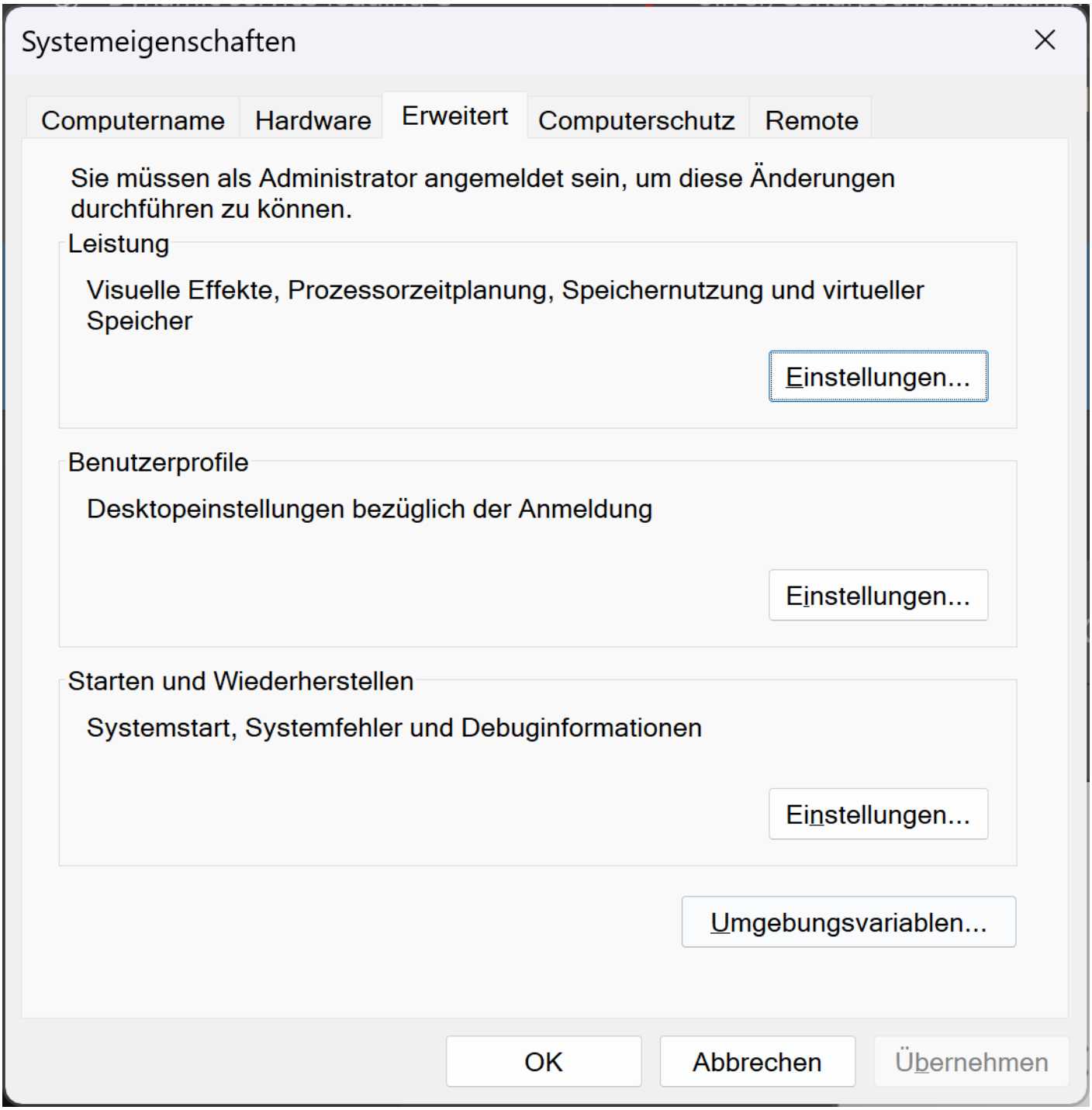
Enable and Locate Memory Dumps

Enable Memory Dumps

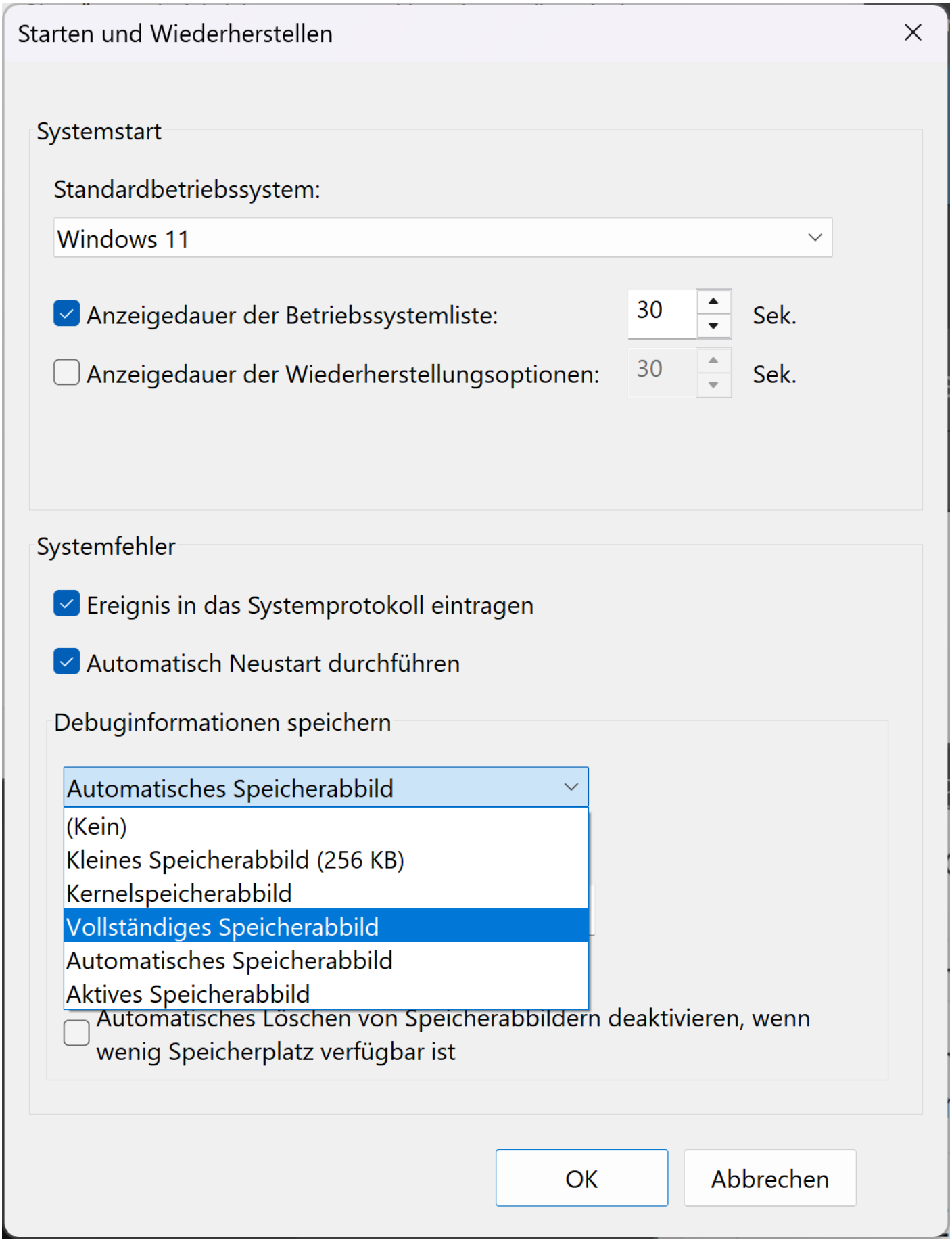
Press Windows-Key + R and enter `SystemPropertiesAdvanced`



go to Tab *Advanced* and click on *Settings* in the Section *Startup and Recovery*



1. At the Dropdown in System Errors, select *Complete Memory Dump*



Locate Memory Dumps

The Path is visible in the last Screenshot as Location on the Windows Disk.

As per Default, it is `%SystemRoot%\MEMORY.DMP` or `C:\Windows\MEMORY.DMP`

System File Integrity Check

The System File Integrity Check (SFC) in Windows is used to validate (and repair) System Files.

Usage

```
SFC [/SCANNOW] [/VERIFYONLY] [/SCANFILE=<Datei>] [/VERIFYFILE=<Datei>]
    [/OFFWINDIR=<Windows-Offlineverzeichnis> /OFFBOOTDIR=<Offlinestartverzeichnis>
[/OFFLOGFILE=<Protokolldateipfad>]]

/SCANNOW        Überprüft die Integrität aller geschützten Systemdateien und
                repariert ggf. problematische Dateien.
/VERIFYONLY     Überprüft die Integrität aller geschützten Systemdateien.
                Es erfolgt keine Reparatur.
/SCANFILE       Überprüft die Integrität der angegebenen Datei und repariert ggf. die Datei, wenn Probleme
gefunden werden.
                Geben Sie den vollständigen Pfad zur <Datei> an.
/VERIFYFILE     Überprüft die Integrität der Datei mit dem vollständigen Pfad zur <Datei>.  Es erfolgt
                keine Reparatur.
/OFFBOOTDIR     Gibt den Speicherort des Offlinestartverzeichnisses für Offlinereparaturen an.
/OFFWINDIR      Gibt den Speicherort des Windows-Offlineverzeichnisses für Offlinereparaturen an.
/OFFLOGFILE     Durch Angabe eines Protokolldateipfads kann bei Offlinereparaturen optional die Protokollierung
aktiviert werden.

Beispiel:

        sfc /SCANNOW
        sfc /VERIFYFILE=c:\windows\system32\kernel32.dll
        sfc /SCANFILE=d:\windows\system32\kernel32.dll /OFFBOOTDIR=d:\ /OFFWINDIR=d:\windows
        sfc /SCANFILE=d:\windows\system32\kernel32.dll /OFFBOOTDIR=d:\ /OFFWINDIR=d:\windows
/OFFLOGFILE=c:\log.txt
        sfc /VERIFYONLY
```

- Use `sfc /verifyonly` to only Verify Files and not attempt to repair them. This is generally preferred to be the first stop when suspecting damaged/corrupted system files as there is no possibility in harming the system.
- use `sfc /scannow` to both Verify and attempt Repair. This is a destructive Operation so it is suggested to run this only when knowing that this can very well brick the system. While i

had only a few occurences where this happened, but nevertheless.

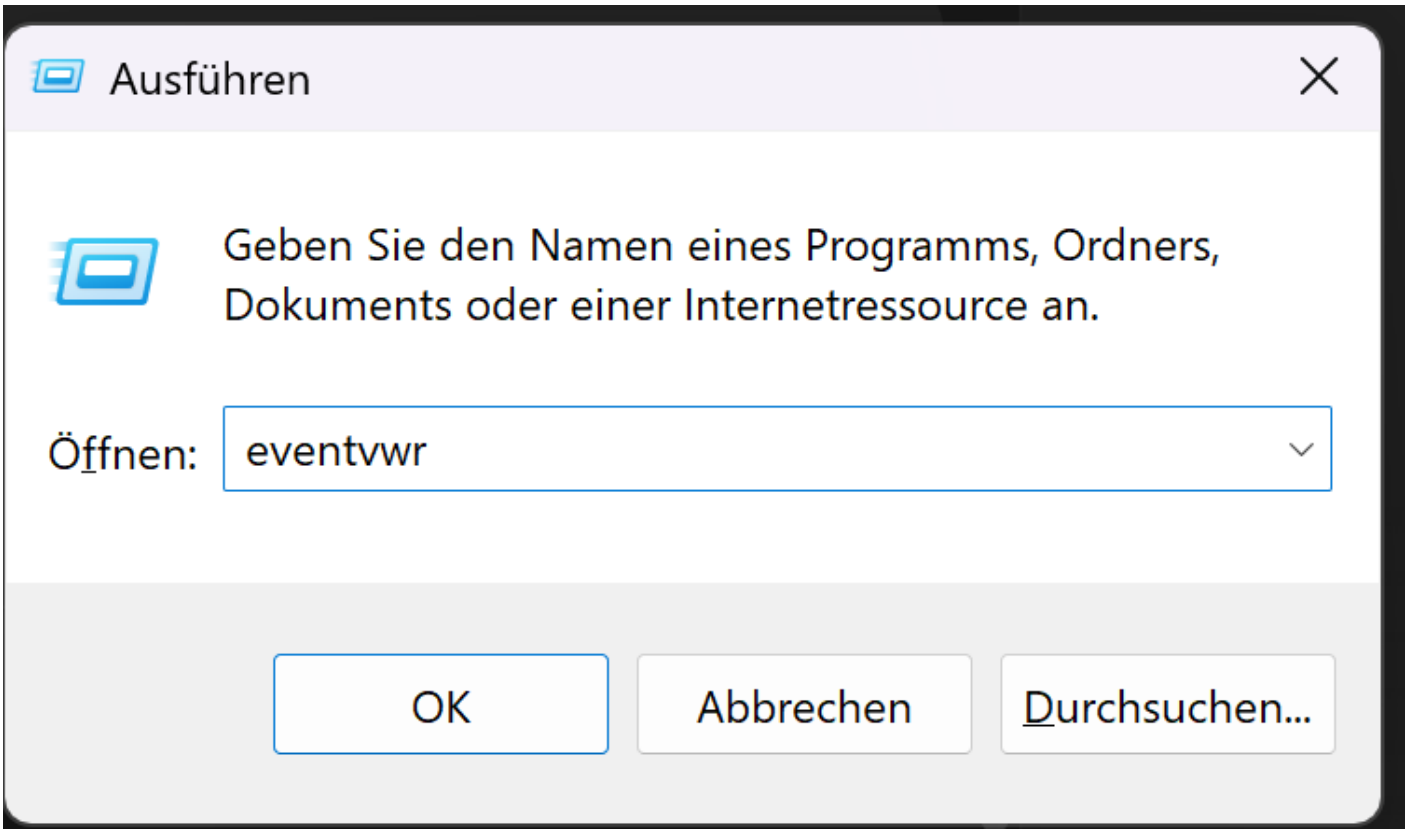
There are also the Options to write a log File using `/OFFLOGFILE`. The Options `/OFFBOOTDIR` and `/OFFWINDIR` are used when a System repair is wanted but Network is not available. These work as offline sources to repair the Files

BSOD in Log Event Viewer

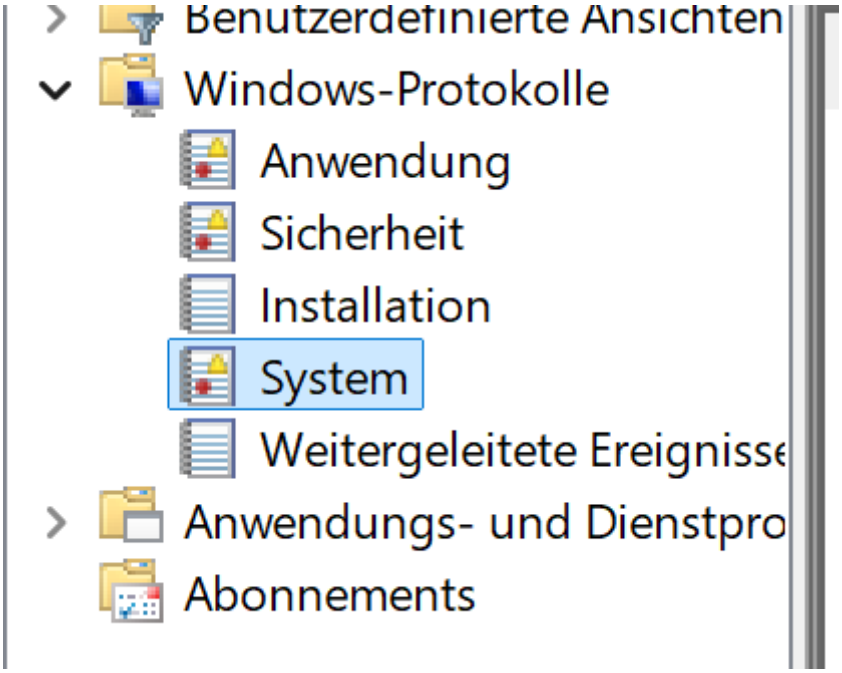
Windows Blue-Screen-of-Death' (BSOD), generally, produce System Log Events of Type *Kernel-Power* and Level *Critical*. Based on them, futher Diagnosis like Memory Dumps or Integrity Checks can be performed.

How to Filter System Event Logs

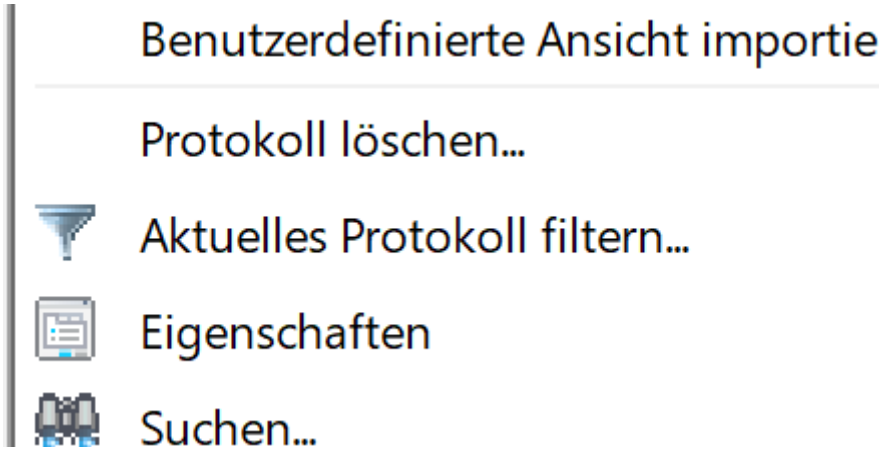
1. Press Windows-Key + R and enter `eventvwr`



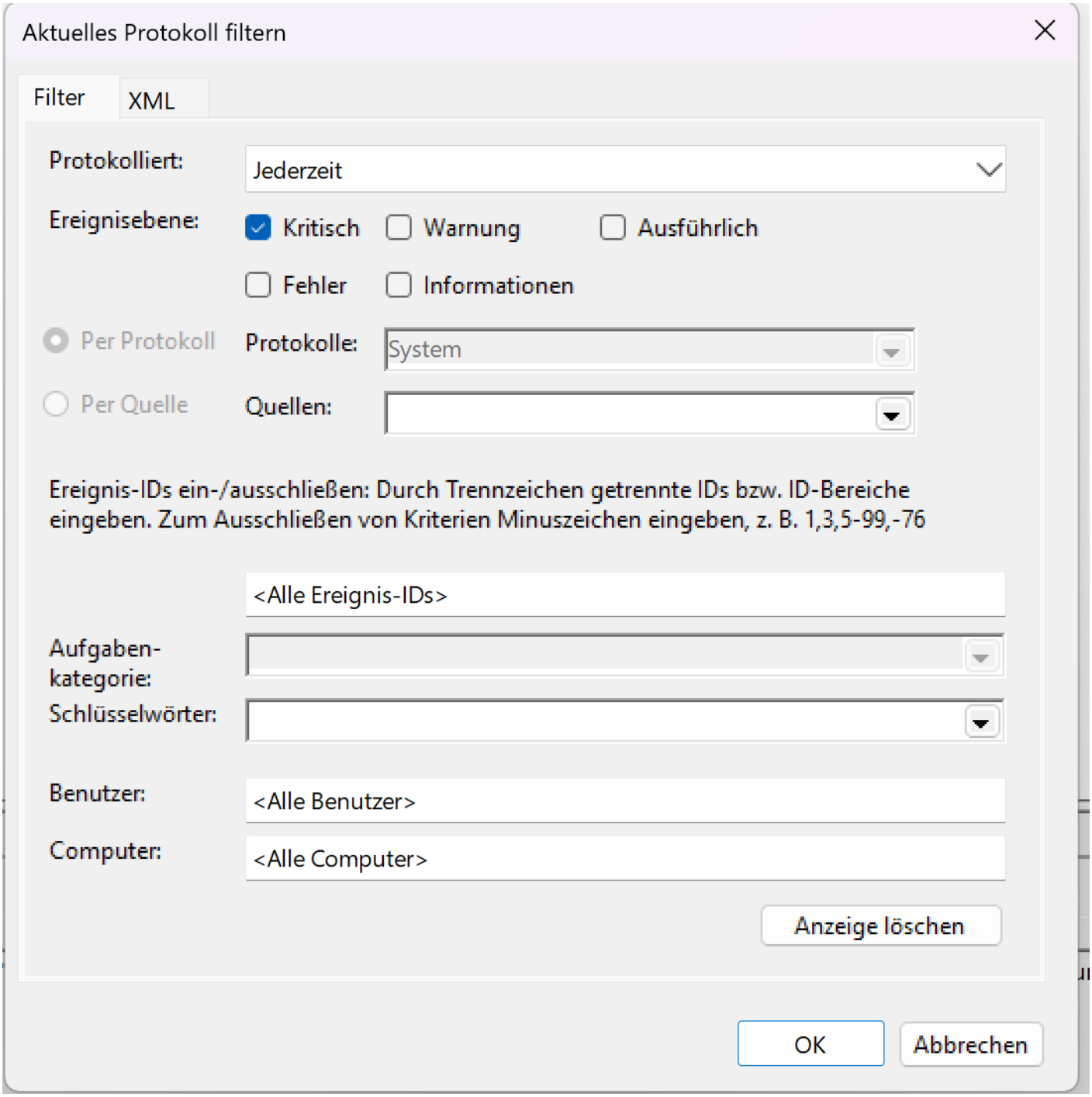
Go to *Windows-Protocols* and select *System*

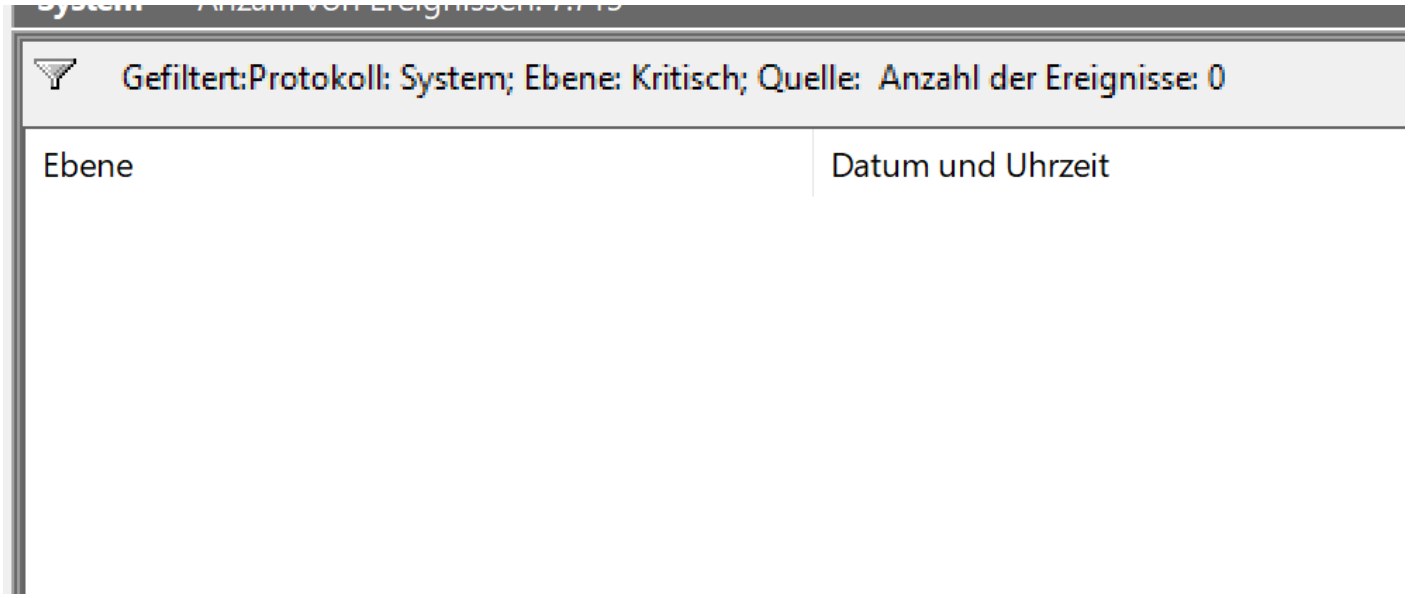


Click on *Filter current Protocol*



Select Event Level *Critical* and set a Timeframe


Aktuelles Protokoll filtern
Filter
XML
Protokolliert:
Jederzeit
Ereignisebene:
Kritisch
Warnung
Ausführlich
Fehler
Informationen
Per Protokoll
Protokolle:
System
Per Quelle
Quellen:
Ereignis-IDs ein-/ausschließen: Durch Trennzeichen getrennte IDs bzw. ID-Bereiche eingeben. Zum Ausschließen von Kriterien Minuszeichen eingeben, z. B. 1,3,5-99,-76
<Alle Ereignis-IDs>
Aufgaben-kategorie:
Schlüsselwörter:
Benutzer:
<Alle Benutzer>
Computer:
<Alle Computer>
Anzeige löschen
OK
Abbrechen



If any BSODs occured, they would be shown here.