

## 1 Quick Reference for VirScan Plus

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### 1.1 Quick Reference

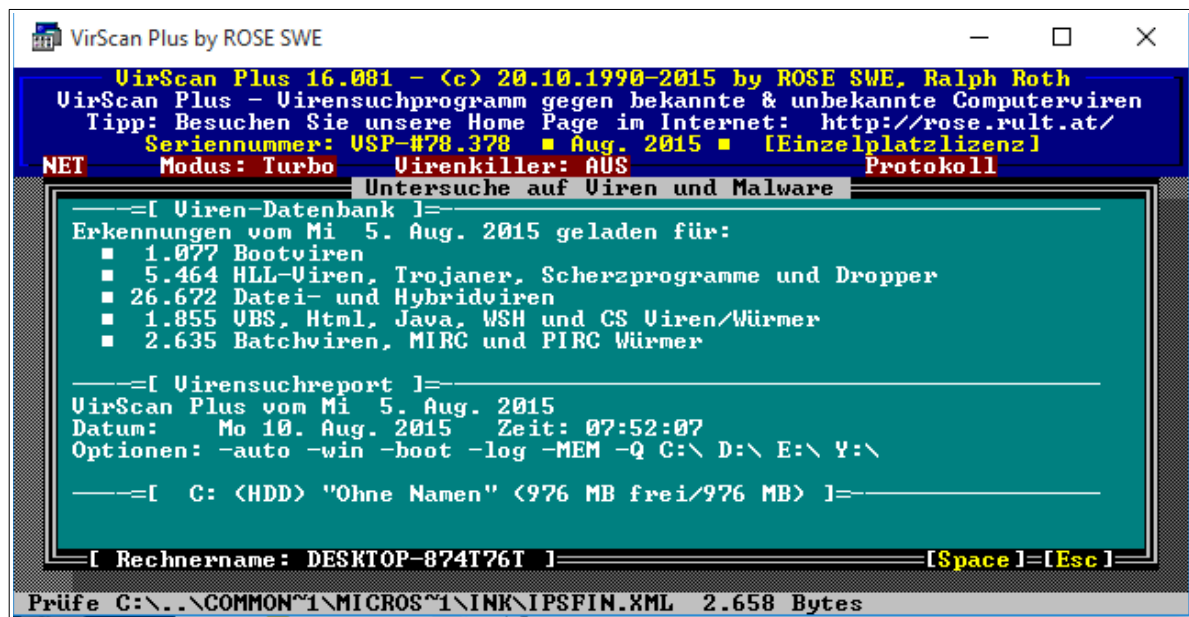
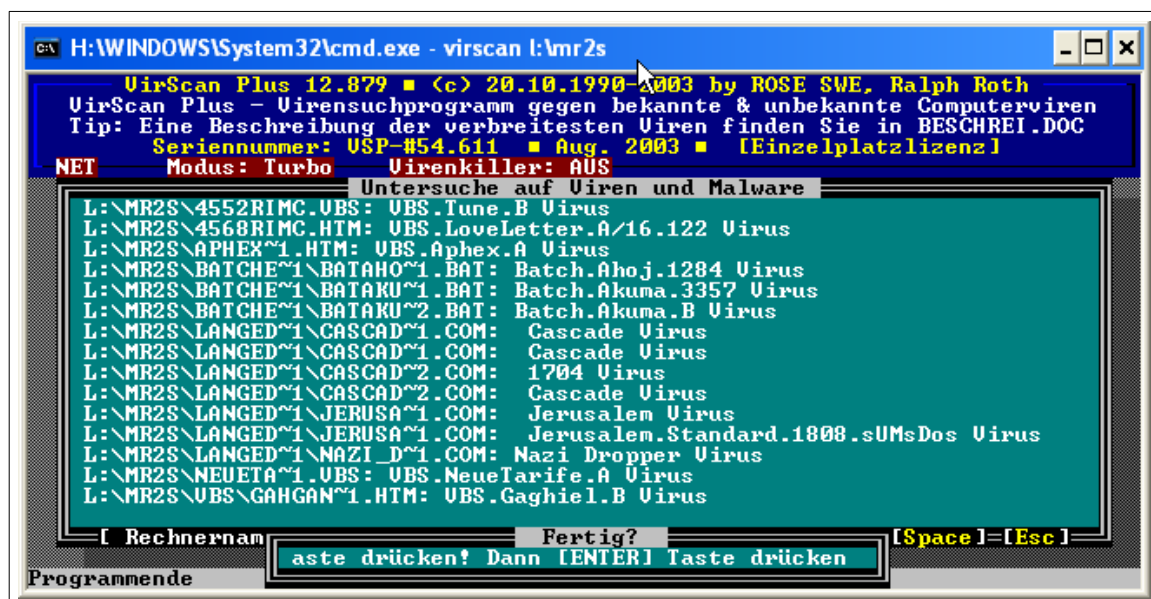


This is a short "**Quick Reference**" for English users that wish to evaluate the **VirScan Plus (VSP)** package for DOS and Win32.

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VirScan Plus running inside the NTVDM<sup>1</sup> of Windows 10 “as an app”

Screen shoot of VSP under Windows 7 scanning an infected directory

### 1.3 What is a Computer Virus?

A computer virus is a program that requires a host in order to make copies of it. Viruses may infect (copy to, and spread from) program files, programs in disk sectors (MBR and boot sectors), text files (scripts), and files that use macros. The ability to self-replicate distinguishes viruses from programs that do not, and this parasitic nature is neither an accident, nor a computer glitch. All viruses are created by people who know how to write computer programs.

<sup>1</sup> See [https://en.wikipedia.org/wiki/Virtual\\_DOS\\_machine#NTVDM](https://en.wikipedia.org/wiki/Virtual_DOS_machine#NTVDM)

## 1.4 What is a Worm?

As Intranets and the Internet have grown in popularity, e-mail has evolved from a convenience to a necessity. Virus vandals know that, and they've invented new ways to use e-mail to spread viruses, and especially, worms. A worm program is similar to a virus. It is considered by some to be a subset of a virus in that it makes copies of itself but does so without needing to modify a host. Like viruses, worms may (or may not) do things other than replicate.

## 1.5 What is a Trojan horse?

Even though a Trojan horse is sometimes also called Trojan, it's more a Greek. The Greeks build the so-called 'Trojan horse' in the fight about Troy to get into the town, so they are the real snoopers. Trojan horse programs are named for the giant wooden horse that concealed Greek soldiers who used it to invade the ancient city of Troy. Like that famous trick, a Trojan horse program conceals hidden programming. The hidden function may just be a joke, or something annoying, but vandals often use Trojan horse programs to destroy other people's data, knowing that some people will run any program that has an interesting file name, or promises to perform a useful function.

A Trojan is a program that has gotten onto your machine without your knowledge and contains malicious code that would for example allow persons using another computer to connect to yours over a network. Typical Trojans are open to anyone trying to connect (any person on your local network or even the Internet). Special Trojans are designed to make your machine accessible just to the person who infected your computer with the Trojan.

# 2 VirScan Plus (VSP)

## 2.1 Synopsis



VirScan Plus is a program to detect computer viruses, worms and Trojan Horses. VirScan Plus is both a very fast signature scanner and a so-called heuristic scanner.

Beside its blazing speed it has many configuration options. It can detect mutants of viruses; it can by-pass stealth type viruses as well as it will scan for Trojans, jokes, scripts viruses (VBS, HTML etc.), IRC worms, malware and dropper programs. VirScan Plus is able to disassemble and decrypt files using many advanced approaches and a software emulator. This generic detection, named heuristic analysis, is a technique that makes it possible to detect unknown viruses by searching for suspicious instruction sequences rather than relying on any signature. VirScan Plus is therefore able to detect suspicious instruction sequences and to detect yet unknown viruses!

## 2.2 Requirements



An Intel AT (80486 CPU or better), 540 KB of free memory and MS-DOS 6.0+ is enough (or Free DOS 1.0, Caldera DOS 7.x)! VirScan Plus works under Windows 32bit fine (for details on how to get it under Windows working, see below).

## 2.3 Command line Options

### VIRSCAN

```
DRIVE:\ [DRIVE:\]] [DIRECTORY] [/?] [/ALL] [/AUTO] [/BOOT]
[/BATCH] [/CDROM] [/COLLECT] [/CONT] [/DEL] [/Directory]
[/EXTR] [/Ffile.ext] [/HEUR] [/HILFE] [/IVT] [/JN]
[/KILL] [/LAPTOP] [/LESEN] [/LOG[=]] [/MEMHI] [/MORE]
[/MULTI] [/MEHR] [/MEM] [/MUTANT] [/NOMEM] [/NOPART]
[/NOSIG] [/NOSCRIPT] [/NOTROJ] [/PRT] [/PROZ]
[/Q] [/REG] [/REP]
[/SHOWLOG] [/SICHER] [/SPEICHER] [/TURBOAUS] [/ULTRA]
[/UNB] [/VL] [/WIN] [/ZEIT] [Search Mask]
```

Customers familiar with the American or UNIX parameter syntax (minus sign) instead of the slash (' / ') can also use the minus sign (' - ') to start an option..

Example: -Ivt is equivalent to /Ivt



Note: There must be at least one blank between the individual arguments! The arguments are not case sensitive. Options can be set using the environment variable VIRSCAN (set VIRSCAN=...). To unset an option set by setting VIRSCAN=... you can use the "-" at the end of the option (for example: set VIRSCAN=/auto -> VirScan a: -auto-).

## 2.4 Short Description of the Options

Option	Short Description
-----	-----
/?	Shows a short German help.
/ALL	Scan recursively ALL files (*.*) . This option must be used with caution, it will trigger false positives!
/ANALYZE	Tries to determine the type of virus (COM/EXE/TSR)
/AUTO	Autopilot. Scans all drives, except disc drives and CD-ROM.
/BATCH	Batch mode, do not wait for a key press.
/BOOT	Scan files for boot viruses too. (Droppers)
/CDROM	The autopilot feature shall scan CD-ROM too!
/COLL	Creates a report format suitable to generate a virus collection (see also vspzoo.bat etc.).
/CONT	Continues scanning of specified drives. Ideal for permanent background scans under Win or OS/2
/D.	Scan current directory. /D.. the parent directory
/Dxx	Scan directory xx.
/DEL	Delete infected files. Unrecoverable!
/EXTR	Generates a virus search string (only in registered version)
/H /HILFE	Load a quick reference in German language.
/HEUR	Use second level of the heuristic code analyzer. Only recommended for virus experts (only in registered version available)! Key files for AV people doing testing are available.
/KILL	Kill virus if possible (see VIRSCAN.TXT for a list of removable viruses).
/LAPTOP	Use B/W color.
/LESEN	Shows the file VIRSCAN.DOC.
/LOG	Log infected files to VIRSCAN.LOG
/LOG=path\file	Save report into specified file. /LOG:file is also correct.
/MULTI /MORE /MEHR	Scan multiple disc drives.
/MEM	Scan main memory (0-640 KB).
/MEMHI	Scan high memory too (640 - 1024 KB + A20).
/MUTANT	Relaxed scanning for mutated virus strains. Warning: Many false positive alarms will occur!
/NOMEM	Skip 'Quick Memory Scan' features.
/NOPART	Skip checking of Partition and MBR
/NOSCRIP	Skip checking for script viruses and IRC/VBS worms.
/NOSIG	Do not use signatures. Use only AVR modules and the code analyzer.
/NOTROJ /NOTRJ	Skip scanning for Trojans and droppers (VBS).
/PR /PRT /PRN	Print report.
/PROZ	Show processor/co-processor type and CPU speed
/Q /QUIET	Quiet mode (no sound).
/REP /REPORT	Log EVERY scanned file to VIRSCAN.LOG
/ULTRA	Faster scanning (approx. 70% detection).
/SHOWLOG	Shows the file VIRSCAN.LOG.
/SHOWKEY	Shows the registration information of your key file ROSE.KEY.
/UNB	Scan for unknown generic viruses. Better use option /HEUR
/VL	Make a virus list.
/VTC	Special predefined switch for anti virus testing.
/WIN	If you have problems using VSP under windows...
/ZEIT	don't report suspicious time/date (62 sec, year 2095, month: 15 or day: 0/32)
C:	Scan drive C:\ (recursively)
D:\XX	Scan directory D:\XX (recursively)
. (dot)	Scan all files in the CURRENT directory.

c:\dos\command.com scans a single file.



If some of the signature files (VIRSCAN.TRJ, VIRSCAN.ICR or VIRSCAN.WSM) are missing, then the options /NOTRJ, /NOVBS and /NOSCRIPT are set by the program automatically!

## 2.5 Environment Variable

```
e.g.:      set VIRSCAN=/auto /MEMHI /IVT -unb
or:      SET VIRSCAN=/Option /Option /Option ...
```

## 2.6 Examples

Maximum security:

```
VirScan -auto -IVT -unb /boot
```

Scan multiple discs in drive A: and print the results:

```
VirScan a: /MEHR /PRN
```

## 3 Cleaning of Viruses



VirScan cleaning abilities are limited. VSP can remove most of the viruses found in Germany as well as almost all Boot/MBR viruses. If you have encountered a virus VSP can not remove please send me this virus for programming a cleaner. With the VSP package you will find in the TOOLS sub-directory the following generic cleaners:

- RVK – ROSE VIRUS KILLER, generic cleaner for, even poly-morph encrypted viruses infecting COM files (meanwhile an obsolete DOS file format).
- MBR-Kill, generic cleaner and immunisier for boot viruses infecting your MBR.
- BootKill, generic cleaner for boot viruses infecting your discs. For system discs use the program SYS supplied with DOS! Please read the “.DOC” files first, before using the cleaners! Special cleaners are available, see the archive “DECOM”

## 4 Testing the VSP Scanner?

Testing a virus scanner is not an easy task and should be only done by experts on a large virus collection!



VirScan Plus doesn't scan for boot viruses in files nor does it use its boot virus heuristic on files. If you want to test VirScan Plus against boot viruses you must use the option /BOOT to scan boot viruses too. Use also the option /ALL if your boot virus images have no standard extension (.BIN, .IMG, .BOO). Please remember that this option slows down the scanning speed. If you want to test the boot virus heuristic then you have to scan infected discs! You can use then the option /HEUR to enable extra heuristic on boot sector viruses, which will catch all un-encrypted boot viruses I have encountered!

Files with the extension .DOS, .IMG, .BIN and .BOO, as well as all scripts (e.g. .HTML or .VBS etc.) and IRC scripts (.INI etc) are scanned too.

Use the option /HEUR to test the heuristic abilities on file and boot viruses.

## 4.1 Suggested Options for Testing

### 4.1.1 File viruses

```
VirScan <directory> /log=c:\tmp\vtc.log /batch /boot /all /q /zeit /nomem /unb /mutant
```

You can also use the option /VTC that sets all the major switches for a test environment (sets /BATCH, /BOOT, /ALL /Q, /ZEIT, /MUTANT & /NOMEM). If you want you can also add the option /heur to maximize the hitting rate!

```
VirScan <directory> /log=vtc.log /vtc
```

### 4.1.2 Boot viruses (on disks)

```
VirScan <drive:> /log=c:\tmp\vtc.log /q /nomem /unb /multi
```

or

```
VirScan <drive:> /log=vtc.log /vtc /multi
```

### 4.1.3 Limits



VirScan Plus is currently not able to scan inside archives (ARJ, ZIP, 7z, RAR and LHA etc.) as well as macros viruses!

## 4.2 Bugs?



This program can only handle file names with at least 79 (67+12) char length (including paths) - this is a limitation of the DOS box! If you have longer file names (Win 95/Win-NT supports 252 chars) you have to map your paths. Detection has been added for LAN-Manager, NetWare based networks and Microsoft compatible networks (e.g.: Gateway for Novell NetWare etc.) Under Novell NetWare this is an easy job, just take a look at MAP.EXE



VSP has problems with displaying the proper size of drives larger than 2 GB - this is a limitation from the old MS-DOS interrupts, that can only handle drives up to 2 GB (Int 21h, AH=36h –  $2^{32} * 512$  bytes). Scanning is NOT affected from this MS-DOS limitation!

## 5 The Shareware- and the registered version

The difference between the shareware version and the registered version of VSP is: VSP registered has the options /HEUR and /EXTR enabled. The registered version doesn't have the shareware beg screens!

When registering you will get the newest version on disk with additionally tools and documentations (approx 2 MB unpacked), as well as the newest version of VSP. Beside that you are entitled to support (FAX; Email, Voice) and obtaining new releases for the half price.

## 6 Integrated virus self checking

The program contains an integrated checksum tester to alert the user on a possible virus infection. The checksum for the program can be found in the file with the extension „.XXX“. The checksum in the file as well as the main program must not be changed nor modified in any case! Otherwise, the main program regards itself being possibly infected by a virus (a virus still unknown to the program)!

The following features of the EXE file are monitored and checked for modifications every time the program is executed:

- Checksum (CRC32) - If only one bit of the program is changed by a virus, the checksum will no longer match (own secure routine, according to ANSI X3.66 - CRC-Poly is: 0xDEBB20E3).
- File size - If a program becomes one or two KB longer, it is infected!
- Overlay size - If the program uses overlays („.OVR“).

We strongly recommend not making any changes to the EXE & XXX file since the program will not run any more! The file with the extension „.XXX“ also contains the creation date and the standard MD5 checksum that can be checked with other tools like md5dir from ROSE SWE. Verifying the CRC32 checksum takes less than 1 second (depending on computer type and hard disk drive). In to my opinion a passable effort! If the checksum is OK, the program is being executed. Otherwise a detailed error report with indications of possible error reasons will be displayed.

## 7 Questions?



Any suggestions, improvements, bugs or undetected viruses you found? Please write to the address found in the file ROSEBBS.TXT (contains full address, Email, PGP-key etc.) or visit our home page.

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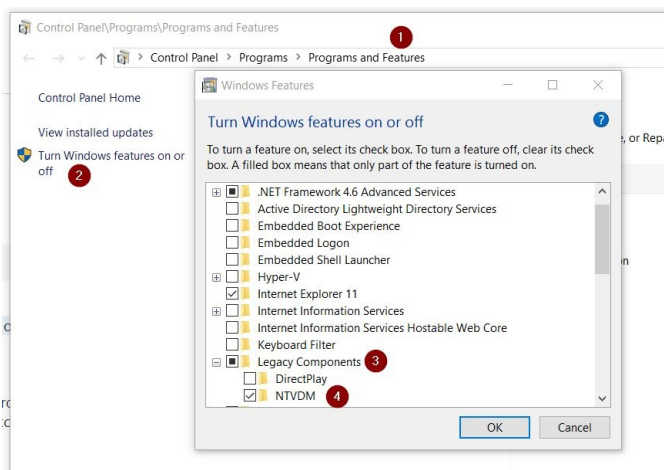
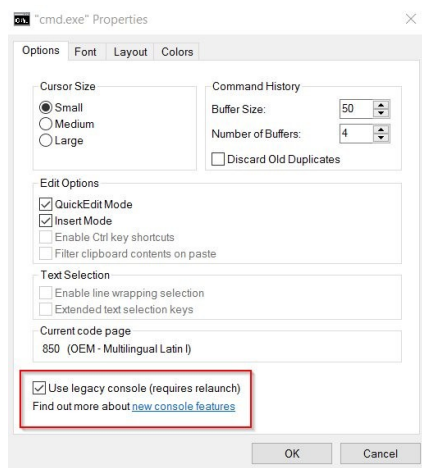
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## 9 Windows 10/11 and 16 bit programs

To run old DOS programs (like VirScan Plus and its tools) you must install first NTVDM on a Windows 10, 32 bit machine. Virtual DOS machine (VDM) is a technology that allows running 16-bit/32-bit DOS and 16-bit Windows programs on Intel 80386 or higher computers when there is already another operating system running and controlling the hardware. NTVDM is a system component of **all IA-32 editions** of the Windows NT family which allows execution of 16-bit Windows and 16-bit / 32-bit DOS applications. **It is not included with 64-bit versions!** The Windows NT 32-bit user-mode executable which forms the basis for a single DOS (or Windows 3.x) environment is called ntvdm.exe. **NTVDM is not supported in 64-bit versions of Windows**, which do not support 16-bit code of any kind, including MS-DOS programs. The only way to run them is to use Windows XP Mode or other virtualization software.

### 9.1 Enabling NTVDM Support

**First:** Go to Programs and Features  
-> Turn Windows Features on or off -> Legacy Components -> Enable NTVDM



**Second:**

- Open "Command prompt"
- Right click over title "Command prompt" and select "Properties"
- Select "Use legacy console (require relaunch)", then "Accept"
- Close and re-open "Command prompt" to test.

Details: <https://helgeklein.com/blog/2008/03/windows-x64-all-the-same-yet-very-different-part-5/>

/\* the end \*/