

DFSee 10.x overview, demo - Q&A



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DFSee functionality overview
What is new in version 9 and 10x
Demos, Questions and Answers



FSYS - software **DFSee**

Presentation contents

- Who am I
- DFSee 10.x functional overview
- Version history, new in version 9 and 10
- Demo of several DFSee functions
 - DFSDISK procedure, for dfsee-support information
 - Binary editor, and disassembler
 - Create a bootable USB-stick with DFSee 10.2
 - Whatever you like (and is doable :-)

Who am I ?

Jan van Wijk

- Software Engineer, C, Rexx, Assembly, PHP
 - Founded FSYS Software in 2001, developing and supporting DFSee from version 4 to 9.xx
 - First OS/2 experience in 1987, developing parts of OS/2 1.0 EE (Query Manager, later DB2)
 - Used to be a systems-integration architect at a large bank, 500 servers and 7500 workstations
 - Embedded systems development since 2007
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- Home page: <http://www.dfsee.com>

What is DFSee, functional view

- DFSee is an OS neutral utility like FDISK, LVM, PQ-Partition Magic, PQ-Drive-Image Norton-Ghost, Undelete and more ...
- Main areas of functionality:
 - Backup and restore of partitioning information
 - Search missing partitions and recreate them
 - FDISK/LVM create and maintain partitions
 - Imaging, disk-areas to/from (compressed) files
 - Cloning, disk-areas to/from other disk-areas
 - FS-specific: Check, Display, Undelete and Fix
 - Disk data analysis and update (binary edit, disasm)

Managing partition info

- Backup/Restore commands Psave/Prestore and the corresponding items in the FDISK menu
- BSFIND command to search lost partitions
- Both are integrated in the DFSDISK procedure, preparing you for a partition recovery ...
(Can be done 'post-disaster' as well :-)
- Recovery script can often be made (and tested!) based on the (7) DFSDISK result files

Create and maintain partitions

- Use the CR/DELETE commands or menu items to manage the partition tables
- Use the LVM command/menu to create and update the OS/2 or eCS LVM information
- Use the Partition Table Editor (PTE) to directly manipulate table entries
- Use the various SETxx and FIXxx commands to change partition properties and fix errors
 - (see the DFSxxx.TXT documentation for details)

Imaging to/from files

- Imaging is a process where DFSee objects like disks or partitions are copied into a regular (often compressed) image-FILE
- You NEED regular file-level access in the OS you are running to read/write this imagefile!
- Can use 'smart' technology to skip unused areas
- Images can be restored to the same or to a different object, but keep the SAME size!
- Imaging is used for backup and restore, including data transfer between systems

Cloning between objects

- Cloning is a process where sectors from any DFSee object like disks and partitions are directly copied to another DFSee object
 - Disk-to-disk clone, as backup or recovery clone includes all partitioning and LVM info
 - Partition-to-partition clone, mainly for backup
- Special handling possible for bad sector areas
- Like imaging, can use 'smart' technology to skip any unused (freespace) areas in the object

File recovery and undelete

- File recovery is the copying of file-data as a new file on another filesystem, retaining as much of the name, path and file properties as possible
- When targeting files that have been DELETED it is usually called 'UNDELETE'
- For 'normal' files it is often used to recover files from damaged or inaccessible filesystems
- Uses a SEARCH, DISPLAY, RECOVER scenario
- One file search/recover menu item for HPFS/NTFS/JFS

DFSee versions and user interface

- DFSee is available in an OS/2 (eCS), DOS, Windows-NT/W2K/XP/Vista, Linux, and an experimental MAC OS-X version.
- It is a non-graphical text based program, can run from bootdiskette, bootable CD or USB stick
- Most functions can be run from a MENU interface with additional dialogs
- Much more through a command-line
- Output can go to the screen AND a logfile
- Command scripting capability (recovery)
 - Improved in 9.xx with many C/Perl-like features

Major versions

- 1.xx 1994 HPFS browsing/fixing OS/2 16/32-bit
- 2.xx 1997 NTFS, FAT, FDISK, Imaging, setboot
- 3.xx 1999 Windowed UI, NT-version DFSDISK
- 4.xx 2001 Cloning, Scripting, freespace-wipe
- 5.xx 2002 Menu-system, dialogs, FS-resize
- 6.xx 2003 Linux version, Smart imaging
- 7.xx 2005 Installer, Mouse, new dialogs
- 8.xx 2006 JFS support, sector edit FAT format
- 9.xx 2007 Geo sniffing, more linux FS support
- 9.xx 2008 Enhanced (C/Perl) scripting support
- 10.x 2010 Bootable USB stick, better scripting

What is new in DFSee 9.xx

- Contents based disk geometry (sniffing)
 - Using partition-tables and LVM information
 - Can be disabled using a '-geocalc-' switch
- EXT2/3 and ReiserFS basic support
 - allows disk-allocation map, 'smart' imaging/cloning but no file level displays and recovery yet
- GRUB detailed reporting and analysis
- Generate HTML menu-documentation
 - See DFSHIST.TXT and history web-page

New in version 9, continued

- Greatly enhanced native scripting capabilities
 - Uses 'C' and 'Perl' like expressions, variables and control statements like if-then-else and while, and with direct access to many DFSee internal variables ...

Also see separate 'TxScript' presentation'
 - Used for recovery scripts, and USB-stick creation
- Disassembler modus (F2) for x86 processors added to the binary sector editor
 - Great for analysis of bootcode, or any other piece of x86 code you may encounter while browsing your disk ...

What is new in DFSee 10.x

- Bootable USB stick/disk creation
 - Using PenDriveLinux ISO boot selection menu
 - Boots the standard DFSee 10.x ISO
 - Boots into the PartedMagic Linux ISO
 - User adaptable.
- Enhancements to scripting
 - Verbose mode with variable value expansion
 - Single-step mode for debugging a script
- Updated FreeDOS, including most drivers
 - Start menu includes special 'boot from USB' option
- Many other fixes and enhancements

Interactive binary editing

- Large window with HEX and ASCII sections
- Variable of lines and columns, user selectable
- Integrated SEARCH facility, highlighted result
- Variable item size, sectors, clusters ...
(in any DFSee object, disk, partition etc)
- Editing of files of any size, byte size granularity,
including insert and delete at the EOF position
- X86 disassembler modus for x86 machine code

Enhanced native scripting

- Backwards compatible with existing .DFS scripts
- Much better error checking possible
- Direct access to much DFSee specific info, including disk sectors from a script
- Powerful expressions, variables and functions
 - Can be used directly from the DFSee commandline too:
example, show current sector: `say {i2hex($_this)}`
- Conditional and looping control allows more intelligent and powerful scripts

Bootable USB stick, Create

- Original: PenDriveLinux tool, Windows only
- Captured in DFSee image DFSUSB32.IMZ
- Automated in script DFSUSB32.DFS
 - Actions >> Create bootable (USB) disk >> select disk
 - Creates 1Gb bootable FAT32 for ISO's and DFSee
 - Rest of stick as a FAT32 data partition
 - More information in DFSUSB32.txt

Bootable USB stick, Boot

GRUB4DOS 0.4.4 2009-06-20, Memory: 636K / 2045M, MenuEnd: 0x48C4C 0

Boot FreeDOS and run DFSee, select option '0' for file access to the stick
Boot Parted Magic Linux, find a DFSee icon on the stick in "My Documents"



Use the ↑ and ↓ keys to highlight an entry. Press ENTER or 'b' to boot.
Press 'e' to edit the commands before booting, or 'c' for a command-line.

The highlighted entry will be booted automatically in 6 seconds.

Bootable USB stick, Usage

- Boot the FreeDOS based ISO, select option '0' in its menu to access the stick itself too.
(Can be made the default in the ISO file)
 - Logs to ramdisk Z: by default (gone when not copied!)
 - May want to open a log on the stick D:\logs instead
(get actual driveletter from the DFSee 'part' display)
- Boot the PartedMagic Linux ISO
 - On Linux desktop, click “My Documents”
 - Find the stick, click it to mount and open root folder
 - Click the DFSee icon to start DFSee
 - Working directory is the sticks /logs directory

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Questions ?

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DFSee 10.x DEMO topics

- Sector editor, sizing, undo, fill, search
- Binary file edit
- Create bootable USB stick, including format of a FAT32 partition
- JFS filefind, with SLT
- JFS recovery names
- Smart imaging (JFS)
- DFSDISK dialog
- Virtual disks, DFS -d-, add/remove media
- Recovery example, load .Pdx files
- Run a recovery script
- Using script variables and expressions