

# Paragon Hard Disk Manager 12

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# Paragon Hard Disk Manager 12

## The most dependable disk management software for physical and virtual storage devices

Paragon Hard Disk Manager (HDM) 12 is the best software option available in the market for IT administrators to quickly and easily make changes to the configuration of storage devices without data loss and downtime. HDM 12 also comes with attractive licensing options (including technician licenses). With just a single software solution, you receive all of the features you need to effectively migrate, virtualize, partition, back up, and restore servers or workstations and permanently wipe drives in case of re- or de-commissioning. HDM 12 is compatible with all commercially available file systems and converts storage devices from one file system to another without any data loss.

HDM 12 also connects directly to virtual disks, allowing an administrator to manage any virtual disk on the network with the same ease as a direct-attached physical disk.

### **Backup and Disaster Recovery**

Data should be backed up before any changes to critical systems are made. HDM 12 makes it easy to create an image of entire partitions or a file-based backup before reconfiguring a drive. The backup will not interrupt any existing backup policies. Paragon's HDM 12 can be used as the primary solution for a backup and disaster recovery strategy via scheduled backups.

### **Incremental imaging**

HDM 12 supports incremental backups for sector-based images, in addition to differential backups. The software is implemented to continuously back up servers or workstations and, in case of a disaster, cut costly downtime to minutes, by incorporating virtual fallback strategies (i.e., instant disaster recovery through virtualization).

### **Partitioning**

Optimally configured server systems with high availability are an increasingly important factor for any company's success. HDM 12 is easy to use and offers the fastest partitioning engine available on the market. Proper partition structure and alignment maximize server performance.

### **Migration**

Retaining copies of system images is an accepted means of safeguarding against failures, especially for servers. Being able to run these images on different hardware or in a virtual environment provides independence and the highest possible degree of flexibility.

Paragon's Migrate OS to SSD and Adaptive Restore™ technologies can be used to migrate Windows™ operating systems to new or modified hardware securely and conveniently. This is especially true of the new solid state drives (SSDs) and advanced format hard disks over 2TB (AFDs). Paragon's HDM 12 software ensures the quick and easy transfer of entire operating systems without any data loss.

### **Support for the latest storage devices in Windows XP**

Paragon's GPT Loader, included in HDM 12, enables trouble-free work with very large hard disks in Windows XP—since the special system driver expands the OS by adding support for hard disks with GPT (GUID partition tables).

### **Paragon Retention Wizard**

(only available in Professional and Premium Edition)

The Paragon Retention Wizard is a step-by-step wizard to setup effective backup methods for full, differential and incremental backup strategies, in physical and virtual environments.

### **Disk Wiping**

Permanently erasing all information on a hard drive (or any evidence of previously deleted files and indices) is an essential measure to protect company data when retiring or re-commissioning hard drives. HDM 12 provides its own wiping methods for this, as well as advanced algorithms in accordance with national and international standards. Newly implemented reporting features help document the results and make large wiping projects easier to manage.

## Virtual environment administration

(Only available in Professional and Premium Edition)

Maintaining a virtual environment can be the ideal solution for small and medium-sized companies looking to combine advanced tasks around backup and disaster recovery, virtualization and migration, and storage management and optimization. Paragon HDM 12 Professional and Premium Editions offer all these features in one comprehensive and future-proof product. Further, HDM 12 Professional and Premium are great tools for administrators who want to manage heterogeneous storage structures in a physical or virtual environment with a single software product. HDM 12 Professional and Premium Editions break down the barriers between virtual, dynamic and physical storage devices to effectively unify their administration. The ConnectVD technology included in HDM 12 allows an administrator to partition and manage virtual disks in a “cold” state and without an active hypervisor. In addition, files and operating systems on the virtual disk can be backed up and migrated to other hardware environments. Once the virtual disk has been connected via ConnectVD, administration is carried out the same way as it is with physical disks.

## Available editions

### Professional

A tool to administrate, protect and migrate data and data storages. The Professional Edition gathers the most important Paragon technologies in one surface. This edition is specially designed for the deployment of workstations.

### Business

Made for small companies, which are not working with virtualization solutions. With the Business Edition they have the perfect solution for all hard disk and data storages related tasks. The Business Edition supports server OS and is given away with an attractive price.

### Premium

As the Professional Edition for workstations, offers the Premium Edition of HDM the complete Portfolio of features and Paragon technologies. The Premium Edition is exclusively set up for the deployment of physical and virtual servers. The software offers comprehensive backup, migration and partitioning functions.

Learn more about our new Technician Licenses (please see page 4)

## Licensing models for HDM

Single-Seat License  
Volume License  
Technician License

## Target groups

HDM 12 is for any companies looking to combine advanced tasks around backup and disaster recovery, virtualization and migration, and storage management and optimization in one comprehensive and future-proof product, instead of having to use an individual tool for each task.

- Administrators who want to manage heterogeneous storage structures in a physical or virtual environment with a single software product.

For Value-added resellers (VARs), system integrators (SIs), IT consultants and system builders, the Paragon Hard Disk Manager Technician License will be a powerful all-in-one solution for imaging/disaster recovery, virtualization/migration, and storage management and optimization.

## System requirements

- Windows Server 2008 R2 (64 Bit)
- Windows Server 2008 (32 and 64 Bit)
- Windows Server 2003 (32 and 64Bit)
- Windows Server 2012 (32 and 64Bit)
- Windows 2011 Small Business Server
- Windows 8 (32 and 64 Bit)
- Windows 7 (32 and 64 Bit)
- Windows Vista (32 and 64 Bit)
- Windows XP (32 and 64 Bit)
- CPU: Intel Pentium or compatible, 300 MHz processor or higher
- RAM: At least 128 MB (256 MB or higher recommended)
- Free storage space: 250 MB, 1GB recommended during installation
- Internet Explorer 5.0 or higher
- SVGA graphic card

### NEW FEATURES:

- Incremental imaging
- Application-level exclusions
- 3rd generation of Adaptive Restore™ technology included
- Improved network support for WinPE
- vSphere support
- Partition alignment during imaging
- Support of GPT/uEFI configurations
- New and faster partitioning engine

## Technician Licenses

License	HDM Basic Technician License	HDM Standard Technician License	HDM Premium Technician License
Product as basis	HDM Business	HDM Premium	HDM Premium
Max. allowed servers	up to 10 physical servers	up to 20 physical and/or virtual servers	up to 50 physical and/or virtual servers
Max. allowed workstations	up to 100 workstations	up to 200	up to 500
Allowed number of locations	1 location	1 location	multiple locations
Number of technicians using the license	1 technician	1 technician	1 technician
Virtual environment administration	No	Yes	Yes

## Technical Support and Upgrade Assurance

Optional Maintenance and Support, which includes technical support and product upgrades, is available for 20% of the license cost.

## Professional Services

Paragon Software offers professional services to assist the resellers and/or their customers directly with any project.

## Collaterals and Reference Documents

### Manuals/ References:

Paragon Hard Disk Manager 12 Professional

[http://download.paragon-software.com/doc/manual\\_HDM12Pro\\_en.pdf](http://download.paragon-software.com/doc/manual_HDM12Pro_en.pdf)

Paragon Hard Disk Manager 12 Business

[http://download.paragon-software.com/doc/HDM12Business\\_en130113m.pdf](http://download.paragon-software.com/doc/HDM12Business_en130113m.pdf)

Paragon Hard Disk Manager 12 Premium

[http://download.paragon-software.com/doc/HDM12Premium\\_en130113m.pdf](http://download.paragon-software.com/doc/HDM12Premium_en130113m.pdf)

Paragon Scripting Language Manual:

[http://download.paragon-software.com/doc/script\\_man.pdf](http://download.paragon-software.com/doc/script_man.pdf)

## Copy Blocks

### **L (300 words):**

Paragon Hard Disk Manager (HDM) 12 is the best software option available in the market for IT administrators to quickly and easily make changes to the configuration of storage devices without data loss and downtime. HDM 12 also comes with attractive licensing options (including technician licenses). With a single software solution, you receive all the features you need to effectively migrate, virtualize, partition, back up and restore servers or workstations and permanently wipe drives in case of re- or de-commissioning. HDM 12 is compatible with all commercially available file systems and converts storage devices from one file system to another without any data loss. HDM 12 also connects directly to virtual disks, allowing an administrator to manage any virtual disk on the network with the same ease as a direct-attached physical disk.

Data should be backed up before any changes to critical systems are made. HDM 12 makes it easy to create an image of entire partitions or a file-based backup before reconfiguring a drive. The backup will not interrupt any existing backup policies. Paragon's HDM 12 can be used as the primary solution for a backup and disaster recovery strategy via scheduled backups.

HDM 12 supports incremental backups for sector-based images, in addition to differential backups. The software is implemented to continuously back up servers or workstations and, in case of a disaster, cut costly downtime to minutes, by incorporating virtual fallback strategies (i.e., instant disaster recovery virtualization).

HDM 12 is easy to use and offers the fastest partitioning engine available on the market. Proper partition structure and alignment maximize server performance.

Paragon's GPT Loader, included in HDM 12, enables trouble-free work with very large hard disks in Windows XP—since the special system driver expands the OS by adding support for hard disks with GPT (GUID partition tables).

### **M (98 words):**

Paragon Hard Disk Manager (HDM) 12 is the best software to quickly and easily make changes to the configuration of storage devices without data loss and downtime. It comes with attractive licensing options. With one package, you receive all of the features you need to effectively migrate, virtualize, partition, back up, and restore servers or workstations and permanently wipe drives. HDM 12 is compatible with all com-

mercially available file systems and converts storage devices from one file system to another without any data loss. It also connects directly to virtual disks and supports incremental backups for sector-based images.

### **S (51 words):**

Paragon Hard Disk Manager (HDM) 12 is the best software to quickly and easily make changes to the configuration of storage devices without data loss and downtime. With one package, it offers migration, virtualization, partitioning, advanced disk wiping, and backup and restore, for servers and workstations in physical and virtual environments.

### **XS (one sentence):**

HDM 12 enables migration, virtualization, partitioning, backup and restore, and advanced disk wiping for servers and workstations in physical and virtual environments.

# Appendix

## I. System Requirements

### Supported Operating Systems

- Windows Server 2008 R2
- Windows Server 2008 Family (32/64 Bit)
- Windows Server 2003 Family
- Windows Server 2003 x64 Edition
- Windows Server 2012
- Windows Small Business Server 2003 Family
- Windows 2011 Small Business Server
- Windows Storage Server 2003
- Windows 8 (32/64-bit)
- Windows 7 (32/64-bit)
- Windows Vista (32/64-bit)
- Windows XP Professional (32/64-bit)
- Windows XP Home

### Supported Computer Bus Interfaces

- Parallel ATA (Parallel Advanced Technology Attachment)
- SATA (Serial Advanced Technology Attachment)
- External SATA (eSATA)
- SCSI (Small Computer System Interface)
- USB (Universal Serial Bus) 1.x/2.0/ 3.0
- IEEE 1394 (FireWire)
- All types of RAIDs (hardware and software)
- PC or PCMCIA Card (Personal Computer Memory Card International Association)

### Supported Storage Media

- 2.2TB+ hard disk drives
- AFD (Advanced Format Drive)
- Non-512B sector size drives
- SSD (Solid State Drive)
- HDD (Hard Disk Drive)
- CD-R/RW
- DVD-R/RW
- DVD+R/RW
- DVD+/-R (DL)
- BD-R
- BD-RE

### Supported File Systems

- NTFS (v1.2, v3.0, v3.1)
- FAT16
- FAT32
- Linux Ext2FS
- Linux Ext3FS
- Linux Ext4FS

- Linux Swap
- Apple HFS+
- Other file systems (in the sector-by-sector mode)

### Supported Partitioning Schemes

- MBR (Master Boot Record)
- GPT (GUID Partition Table)
- Microsoft Dynamic Disk (simple, spanned, striped, mirrored, RAID-5)

### For Windows installation

- CPU: Intel Pentium or compatible, 300 MHz or higher processor
- RAM: At least 128 MB (256 MB or greater recommended)
- Disk space: 250 MB (recommended up to 1 GB additional free space during the installation)
- Internet Explorer 5.0 or higher

### For WinPE environment

- Intel Pentium III CPU or its equivalent, with 1000 MHz processor clock speed
- At least 512 MB of RAM
- SVGA video adapter

### For Linux/DOS environment

- CPU: Intel Pentium or compatible, 300 MHz or higher processor
- 256 MB of RAM
- SVGA video adapter

### Supported Virtual Machines (only available in the Professional and Premium Edition)

- Microsoft Virtual PC
- Microsoft Virtual Server
- Microsoft Hyper-V R1/R2
- VMware Workstation
- VMware Fusion
- VMware ESX Server
- Oracle VirtualBox 3.0-3.12

### Additionally for Connect VD and P2V Adjust OS only

- MS Windows backups (.vhd images)

### Additionally for Connect VD only

- Parallels Workstation
- XenServer (.vhd only)

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## II. Comparison of functions and editions

Functions	Professional	Business	Premium
<b>Partitioning</b>	✓	✓	✓
Create partition	✓	✓	✓
Create partition (express mode)	✓	✓	✓
Format partition	✓	✓	✓
Delete partition	✓	✓	✓
Restore partition	✓	✓	✓
Move/shrink/enlarge partition	✓	✓	✓
Change partition size (express mode)	✓	✓	✓
Redistribute free memory storage space	✓	✓	✓
Divide partition	✓	✓	✓
Combine partitions	✓	✓	✓
Convert file system	✓	✓	✓
Allocate/remove hard drive letters	✓	✓	✓
Hide/show partition	✓	✓	✓
Activate/deactivate partition	✓	✓	✓
Change cluster size	✓	✓	✓
Change hard drive name	✓	✓	✓
Change serial number	✓	✓	✓
Change partition ID	✓	✓	✓
Downgrade NTFS version	✓	✓	✓
Convert dynamic to basic disks	✓	✓	✓
Convert GPT to basic MBR disks	✓	✓	✓
Convert basic MBR disks to basic GPT disks	✓	✓	✓
Make partition logical/primary	✓	✓	✓
Show sectors	✓	✓	✓
Process sectors	✓	✓	✓
Change primary slots	✓	✓	✓
<b>Backup and Disaster Recovery</b>			
Sector and data backup with smart backup	✓	✓	✓
Differential backup	✓	✓	✓
Incremental sector backup	✓	✓	✓
Incremental file backup	✓	✓	✓

Functions	Professional	Business	Premium
File-based added backup	✓	✓	✓
Synthetic backup	✓	✓	✓
Cyclical backup	✓	✓	✓
Set up lockout filter for supported company applications (MS Exchange, SQL, SharePoint, Hyper-V, VMware Server)	–	–	✓
Backup on SFTP/FTP server	✓	✓	✓
Backup containers	✓	✓	✓
Backup on CD/DVD/Blu-ray	✓	✓	✓
Incorporate backup images	✓	✓	✓
Restore individual files	✓	✓	✓
Archive database	✓	✓	✓
Check archive integrity	✓	✓	✓
Check rescue disk	✓	✓	✓
Asynchronous data transmission for backups	✓	✓	✓
Password allocation for file backups	✓	✓	✓
Automatic backup/restoration of access control lists (ACL) for data backups	✓	✓	✓
<b>Boot management</b>			
Boot Manager	✓	✓	✓
Install new operating system	✓	✓	✓
Update MBR	✓	✓	✓
Retention Wizard	✓	–	✓
<b>Data consistency</b>			
Check file system integrity and establish strategies against data loss	✓	✓	✓
Interface test	✓	✓	✓
<b>File system optimization</b>			
Automatic partition orientation during partitioning/copying	✓	✓	✓
Defragment MFT	✓	✓	✓
Compress MFT	✓	✓	✓
<b>Copy and migrate</b>			
GPT loader	✓	✓	✓
Migrate OS to SSD	✓	✓	✓
Copy hard disk	✓	✓	✓
Copy partition	✓	✓	✓



Functions	Professional	Business	Premium
Copy with size change (enlarge)	✓	✓	✓
File transfer assistant	✓	✓	✓
Volume Explorer	✓	✓	✓
<b>Virtualization and migration</b>			
ConnectVD (connect virtual hard drives with the program and partition them as if they were physical)	✓	–	✓
CreateVD (create blank virtual hard drive)	✓	–	✓
P2V copy	✓	–	✓
P2V restore	✓	–	✓
P2V adjust	✓	–	✓
P2P adjust	✓ via Boot Media Builder only	✓ via Boot Media Builder only	✓ via Boot Media Builder only
<b>Supported virtual machines</b>			
MS Virtual PC	✓	–	✓
MS Virtual Server	–	–	✓
MS Hyper-V	–	–	✓
VMware Workstation	✓	–	✓
VMware Fusion	✓	–	✓
VMware ESX Server	–	–	✓
Oracle VirtualBox 4.0	✓	–	✓
<b>Automation</b>			
Virtual operations	✓	✓	✓
Create scripts	✓	–	✓
Add to planned operations	✓	✓	✓
Installation without restarting	✓	✓	✓
Shut down after completion	✓	✓	✓
<b>Erase data</b>			
Permanently erase data on hard disk/partition	✓	✓	✓
Clean free memory storage space	✓	✓	✓
<b>Supported erasure algorithms</b>			
US DoD 5220.22-M	✓	✓	✓
US Navy standard NAVSO P-5239-26	✓	✓	✓
British HMG Infosec standard No. 5	✓	✓	✓
German VSItR standard	✓	✓	✓

Functions	Professional	Business	Premium
Russian GOST	✓	✓	✓
Peter Gutmann algorithm	✓	✓	✓
Bruce Schneier's algorithm	✓	✓	✓
Paragon algorithm	✓	✓	✓
User-defined algorithm	✓	✓	✓
<b>User interface</b>			
Predefined GUI layouts	✓	✓	✓
Supports barrier-free software	✓	✓	✓
<b>Supported technologies</b>			
Paragon Hot Processing	✓	✓	✓
Microsoft Volume Shadow Copy Service (MS VSS)	✓	✓	✓
Synchronized backups of multiple drives (via MS VSS)	✓	✓	✓
<b>Supported partitioning schemes</b>			
Display dynamic disk	✓	✓	✓
Convert dynamic disk (MBR)	✓	✓	✓
Convert dynamic disk (GPT)	✓	✓	✓
Back up dynamic disk	✓	✓	✓
Restore dynamic disk	✓	✓	✓
Hot Processing for dynamic disks	✓	✓	✓
Restore dynamic disk using auto-resize	✓	✓	✓
Format dynamic disk	✓	✓	✓
Erase dynamic disk	✓	✓	✓
Interface test for dynamic desks	✓	✓	✓
Check file system integrity of dynamic drives	✓	✓	✓
Display/edit sectors in dynamic disks	✓	✓	✓
Display GPT hard disk	✓	✓	✓
Convert to basic MBR disks	✓	✓	✓
Create GPT partition	✓	✓	✓
Format GPT partition	✓	✓	✓
Erase GPT partition	✓	✓	✓
Move/enlarge/shrink GPT partition	✓	✓	✓

Functions	Professional	Business	Premium
Copy GPT partition	✓	✓	✓
Copy GPT hard disk	✓	✓	✓
Back up HPT partition/hard disk	✓	✓	✓
Restore GPT partition/hard disk	✓	✓	✓
Hot processing for GPT partitions/hard disks	✓	✓	✓
Permanently erase GPT partition	✓	✓	✓
Interface test for GPT partitions	✓	✓	✓
Check file system of a GPT partition	✓	✓	✓
Display/edit sectors in a GPT partition	✓	✓	✓
Display drives of an APM (Apple Partition Map)	✓	✓	✓
<b>Supported operating systems</b>			
Windows 2000	✓	✓	✓
Windows XP Home Edition	✓	✓	✓
Windows XP Professional	✓	✓	✓
Windows XP Professional x64	✓	✓	✓
Windows Vista	✓	✓	✓
Windows Vista x64	✓	✓	✓
Windows 7	✓	✓	✓
Windows 7 x64	✓	✓	✓
Windows 8	✓	✓	✓
Windows Server 2003 / 2008 /2012	–	✓	✓
Windows Small Business Server 2011 / 2008 /2003	–	✓	✓
<b>Supported file systems</b>			
NTFS (v1.2, v3.0, v3.1)	✓	✓	✓
FAT16	✓	✓	✓
FAT32	✓	✓	✓
Ext2FS	✓	✓	✓
Ext3FS	✓	✓	✓
Ext4FS	✓	✓	✓
ReiserFS	–	–	–
Linux Swap	✓	✓	✓
HPFS	✓	✓	✓
Apple HFS+	✓	✓	✓

Functions	Professional	Business	Premium
<b>Supported storage media</b>			
Paralleles ATA (IDE)	✓	✓	✓
Serial ATA (SATA)	✓	✓	✓
SCSI	✓	✓	✓
SSD (Solid State Drives)	✓	✓	✓
AFD (Advanced Format Drive)	✓	✓	✓
Hard drives without 512-byte sector size	✓	✓	✓
Hard drives over 2TB	✓	✓	✓
iSCSI	✓	✓	✓
All RAID levels for SCSI, SATA and IDE controllers	✓	✓	✓
IEEE 1394 (FireWire)	✓	✓	✓
USB 1.0/2.0/3.0	✓	✓	✓
PC memory cards	✓	✓	✓
<b>Additional functions for the rescue environment</b>			
Rescue disk configurator with CD/DVD copy function	✓	✓	✓
WinPE recovery environment	✓ (via Boot Media Builder only)	✓ (via Boot Media Builder only)	✓ (via Boot Media Builder only)
Linux recovery environment	✓	✓	✓
WinPE Trace Route/Ping Utility	✓	✓	✓
Boot Corrector	✓	✓	✓
Network configurator	✓	✓	✓
Save log files	✓	✓	✓