

O&O Software

# O&O DiskImage

Scriptinterface



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# Introduction

The O&O DiskImage Command Interpreter makes it possible to manage disks, partitions, or volumes and images with the assistance of command files (XML documents). All scenarios displayed by O&O DiskImage directly or indirectly can in this way be re-enacted.

Note: The O&O DiskImage program prevents a large number of user activities that might unintentionally result in loss of data. It is strongly recommended to use the Command Interpreter with great caution, as it enables the user to directly control partitions, volumes, disks and images.

Drive letters will not be automatically assigned by using the Command Interpreter. To be certain that a particular partition or volume has a drive letter, you will have to assign it one directly. You can either assign the drive a letter yourself, or have the next available drive letter assigned for you. Otherwise, the created storage volume will not be accessible or visible to certain programs such as Microsoft Explorer.

Use the command "oodi /s Path\File.xml", to access and run a command file. In addition, you can introduce and run the command file in the program over the program's "Import" feature.

As a default setting, DiskImage can end the command process and send an error code if the command file is defective. To continue running a command file even under these conditions, set the parameter "stop\_at\_error" on the value "false" or "no". If there was no error, the value "0" will be sent as a confirmation of success.

Upper and lower case will not be considered when using labels and names i.e., there will be no difference between, for example, "command", "COMMAND" or "Command".

Single commands have to be enclosed in the element "DiskImage", "Job" or "DiskImageJob".

## Environment and template parameter

The command interpreter has been extended with an option for validating environment variables and conditions.

A value included in the string "\$ENV:()" is replaced at running time with the value of the environment variable. Similarly at running time, a set environment variable "image\_name" with the value "C:\Image20990226.omg" is replaced in the command file by using the string "\$ENV:( image\_name)" with the value "C:\Image20990226.omg."

The following additional template parameters are available wildcards for use as replacements during the command file procedure. These parameters will be enclosed in the string "\$TEMPL:()". The following fixed values are possible:

- ComputerName: the current name of the Computers
- UserName: the name of the current user, of the process
- DefaultPath: the standard path saved in/by the program
- Day: current date of the operating system
- Month: current month of the operating system
- Year: current year of the operating system
- Hour: current hour of the operating system
- Minute: current minute of the operating system
- Second: current second of the operating system
- Weekday: written day of the week
- WeekNumber: calendar week number

## Example

```
<command name="restore image">
<image_name>C:\Image$TEMPL:(Year)$TEMPL:(Month)$TEMPL:(Day).omg
</image_name>
<!-- dynamic formation of the image name -->
<target_drivenumber>0</target_drivenumber>
<!--target object is disk 0 -->
<image_driveletter>C</image_driveletter>
<!--source object is the Volume/Partition with the drive letter C -->
<chs_alignment>yes</chs_alignment>
<!--alignment of the new partition on cylinder/head/sector -->
<set_bootable_partition_bootable>yes
</set_bootable_partition_bootable>
<!--in case the source object was bootable,set again to bootable -->
<append_on_target_drive>yes</append_on_target_drive>
<!--the partition being restored will be appended in the existing layout,
other partitions will not be overwritten -->
</command>
```

The file name in the example will become the running time, if the current date would be 26.02.2099, it would be changed into "20990226". The image file called „image20990226.omg“ found in partition „C:\“ would be used for restoration.

## Conditions

In a command file, commands and/or parameters can be connected with conditions when needed to run or apply them. A condition is labelled with the string "CONDITION". The following operations can be used for getting a verification of validity:

- the values are equal- ("==")
- the values are unequal- („!=")
- the left value is greater than the right value (">")
- the left value is smaller than the right value ("<")

A dynamic command file processing can be attained by evaluating the environment variables in conditions.

## Example

```
<command name="create partition">
<CONDITION> $ENV:(ImageStep)==2</CONDITION>
<drivenumber>0</drivenumber>
```

## Introduction

```
<!--target object is disk 0 -->  
<remaining_range>>true</remaining_range>  
<!-- layout of a partition on the remaining range -->  
<driveletter_to_set>D</driveletter_to_set>  
<!--set drive letter D -->  
<chs_alignment>yes</chs_alignment>  
<!--alignment of the new partition on cylinder/head/sector -->  
<NTFS>>true</NTFS>  
<!--create NTFS partition (fix partition type, fix file system for formatting) -->  
<format>>true</format>  
<!--run formatting with fixed file system -->  
</command>
```

In the above example, the command to create a partition will only be run if the value of the environment variable "ImageStep" is equal to the value "2".

## Commands

A command refers to a functioning part or special feature of the program. With the help of the relevant command, an operation such as "Creating an Image" can be implemented. An operation is specialized through parameters. These parameters are divided in optional, non-optional, and dependent parameters. Optional parameters are not required to be used; however, they do expand the program's usefulness. Non-optional parameters must be set and filled with valid values. If the values of this parameter or the parameter itself are missing during the processing of the command, the command processing will be aborted. False or missing parameters will then be noted in the log file. Dependent parameters are parameters which are optional and used to particularize another parameter. Alone, they have no validity.

Examples of dependent parameters:

The parameter "begin" is, by itself, insignificant. Through the parameter "disk\_number", however, the offset will be recognized on a hard disk.

Using the qualifier „command“, you can apply and control the following commands during the processing of the command interpreter.

Footnote: Presentation and Text Formatting are explained under ["Formatting Legend"](#).

## Sector-based imaging functions

### clone device

With this function you can clone a device and all its saved data without creating image files. The device will be saved directly and without compression on another device. A device can be a partition, a volume or an entire disk.

#### Parameters

clone\_type

- { devicename | driveletter | drivenummer | | serialnumber | begin }
- { target\_devicename | target\_driveletter | target\_drivenummer | target\_serialnumber | target\_begin }
- [ignored\_file\_pattern | ignored\_file]
- [ driveletter\_to\_set ]
- [ force\_dismount | snapshot | vss ]
- [ ignored\_read\_errors ]
- [ set\_bootable\_partition\_bootable ]
- [ clear\_target\_drive | append\_on\_target\_drive ]
- [ chs\_alignment ]
- [ write\_data\_directly ]
- [ automatically\_checkdisk ]
- [ overwrite\_target\_data ]
- [ ignore\_snapshot\_cache\_overflow ]
- [automatically\_convert\_multi\_disk\_volumes]
- [automatically\_create\_target\_drive\_like\_source\_drive]
- [ fill\_empty\_blocks ]

#### Notes

**Important!** By using the parameter "clear\_target\_drive", all drives on the target drive will be deleted and overwritten with the data of the clone

When cloning a hard disk with an MBR (Master Boot Record), the "serial number" of the target hard disk will be converted to the serial number contained in the MBR. Under certain conditions, this can lead to encrypted systems being identified as defective.

When cloning, it's possible that the drive's properties will not be automatically applied. Under the "used sector" cloning method, encrypted drives able to be read and displayed by the current operating system will be created on the target hard disk unencrypted. The option "direct forensic sector" must be selected to apply the drive's properties.

#### Example

```
<command name="clone device">
<clone_type>used sector image</clone_type>
<ignored_read_errors>yes</ignored_read_errors>
<target_drivenummer>2</target_drivenummer>
<drivenummer>1</drivenummer>
</command>
```

## Commands

```
<command name="clone device">
<clone_type>forensic sector image</clone_type>
<target_drive_number>2</target_drive_number>
<driveletter>E</driveletter>
<driveletter_to_set>I</driveletter_to_set>
<driveletter>F</driveletter>
</command>
```

### convert image

Converts an existing image file in which the following settings are possible:

- Change the compression or encryption of an existing image
- Merge images of the same kind to form a new image, also incremental image
- Split the image
- Extract certain partitions of the image and image them separately

#### Parameters

- compression\_type
- encryption\_type
- new\_image\_name
- new\_device\_type
- device\_type
- image\_name
- [ new\_password ]
- [ password ]
- [ comments ]
- [ignore\_data\_modification ]
- [ max\_image\_size ]
- { image\_object\_id | image\_driveletter | image\_drivnumber | image\_serialnumber | image\_begin | all\_sources }
- [ uncompressed\_file ]
- [ automatically\_validate\_image ]
- [ automatically\_overwrite\_image ]
- [ ignore\_data\_modification ]
- [ target\_image\_type ]

#### Note

The original image file remains intact and will not be modified. A new image file will be created with the selected settings.

#### Example

```
<command name="convert image">
<encryption_type>AES 192</encryption_type>
<new_device_type>filesystem</new_device_type>
```

## Commands

```
<new_image_name>c:\oodi\convert.omg</new_image_name>
<device_type>filesystem</device_type>
<image_name>C:\OODI\image_1.omg</image_name>
<all_sources>yes</all_sources>
<new_password>password</new_password>
<max_image_size>750</max_image_size>
</command>

<command name="convert image">
<compression_type>LZNT1 standard</compression_type>
<new_device_type>filesystem</new_device_type>
<new_image_name>c:\oodi\convert2.omg</new_image_name>
<device_type>filesystem</device_type>
<image_name>C:\OODI\image_1.omg</image_name>
<image_object_id>6</image_object_id>
<comments>extract volume 1</comments>
<max_image_size>-1</max_image_size>
</command>
```

## create image

Creates an image of one or more drives of one or more hard disks.

### Parameters

- image\_type
- compression\_type
- encryption\_type
- checksum\_type
- device\_type
- image\_name
- [ password ]
- [ comments ]
- [ max\_image\_size ]
- [ force\_dismount | snapshot | vss ]
- { devicename | driveletter | drivenumber | serialnumber | begin | system\_volume | data\_volumes }
- [ ignored\_file\_pattern | ignored\_file ]
- [ uncompressed\_file ]
- [ ignored\_read\_errors ]
- [ ignore\_invalid\_free\_size\_appointment ]
- [ automatically\_validate\_image ]
- [ automatically\_overwrite\_image ]
- [ target\_image\_type ]
- [ ignore\_snapshot\_cache\_overflow ]
- [ automatically\_convert\_to\_vhd ]



**Note**

When the maximum file size of the target drive's file system is reached or the target drive is full, the image file will be automatically split unless there's a maximum size set for it.

**Example**

```
<command name="create image">
<image_type>used sector</image_type>
<compression_type>LZNT1 standard</compression_type>
<device_type>filesystem</device_type>
<image_name>c:\OOD\image20071127.omg</image_name>
<ignored_read_errors>yes</ignored_read_errors>
<driveletter>E</driveletter>
<driveletter>F</driveletter>
<max_image_size>-1</max_image_size>
<ignored_file>\pagefile.sys</ignored_file>
<ignored_file>\hiberfil.sys</ignored_file>
</command>
<command name="create image">
<image_type>forensic sector</image_type>
<compression_type>LZNT1 standard</compression_type>
<encryption_type>AES 128</encryption_type>
<checksum_type>none</checksum_type>
<device_type>filesystem</device_type>
<image_name>c:\OOD\image20071128.omg</image_name>
<ignored_read_errors>yes</ignored_read_errors>
<drivenumber>1</drivenumber>
<password>PASSWORT</password>
<comments>complete forensic image</comments>
<max_image_size>-1</max_image_size>
<ignored_file>\pagefile.sys</ignored_file>
<ignored_file>\hiberfil.sys</ignored_file>
</command>
```

**create incremental**

Creates an incremental image. An image will be created which contains only the changes made to a selected existing image.

**Parameters**

- device\_type
- image\_name
- compression\_type
- encryption\_type
- new\_image\_name
- new\_device\_type
- [ password ]
- [ new\_password ]
- [ comments ]
- [ max\_image\_size ]
- [ force\_dismount | snapshot | vss ]
- [ hash\_unchanged\_data ]
- [ ignored\_file\_pattern | ignored\_file ]
- [ ignore\_data\_modification ]
- [ ignored\_read\_errors ]
- [ ignore\_invalid\_free\_size\_appointment ]
- [ automatically\_validate\_image ]
- [ automatically\_overwrite\_image ]
- [ change\_initial\_condition ]
- [ target\_image\_type ]
- [ ignore\_snapshot\_cache\_overflow ]

**Note**

If the parameter „hash\_unchanged\_data“ with „true“ or „yes“ is applied during the imaging process of the incremental image, this incremental image can be used as the base image for successive incremental images. You will otherwise require all previous images to create a new incremental image. The parameter "ignored\_file" represents an extension to existing ignored files on the base image.

**Example**

```
<command name="create incremental">
<device_type>filesystem</device_type>
<image_name>C:\OODI\Image_1.omg</image_name>
<compression_type>LZNT1 standard</compression_type>
<new_device_type>filesystem</new_device_type>
<new_image_name>c:\oodi\Increment_Image_1.omg
</new_image_name>
<hash_unchanged_data>yes</hash_unchanged_data>
<ignored_read_errors>yes</ignored_read_errors>
```

## Commands

```
<max_image_size>-1</max_image_size>  
<ignored_file>\pagefile.sys</ignored_file>  
<ignored_file>\hiberfil.sys</ignored_file>  
</command>
```

### dismount image

Unmounts a mounted image file as a virtual drive.

#### Parameters

- { devicename | driveletter | drivenummer | all\_sources }

#### Example

```
<command name="dismount image">  
<drivenumber>3</drivenumber>  
</command>
```

### mount image

Mounts an image file as a virtual drive.

#### Parameters

- device\_type
- image\_name
- [ password ]
- { image\_object\_id | image\_driveletter | image\_drivenummer | image\_begin | all\_sources }
- [ driveletter\_to\_set ]

### Notes

Changes such as adding or deleting files are not possible on image files. When mounting the image of an entire drive, it's not possible to assign any drive letters.

When mounting an entire hard disk, the original layout will be displayed, i.e., it will be identified by operating system partitions not contained in the image file. These drives, partitions/volumes are not formatted and cannot be accessed using, for example, Windows Explorers.

#### Example

```
<command name="mount image">  
<device_type>filesystem</device_type>  
<image_name>C:\OODI\Image_1.omg</image_name>  
<image_object_id>1</image_object_id>  
</command>
```

## Commands

```
<command name="mount image">
<device_type>filesystem</device_type>
<image_name>C:\OOD\Image_1.omg</image_name>
<image_driveletter>F</image_driveletter>
<password>password</password>
<driveletter_to_set>I</driveletter_to_set>
</command>
```

### restore image

Restores data from an image file onto one or more drives.

#### Parameters

- device\_type
- image\_name
- [ password ]
- { target\_devicename | target\_driveletter | target\_drivenumber | target\_serialnumber | target\_begin }
- [ driveletter\_to\_set ]
- { image\_object\_id | image\_driveletter | image\_drivenumber | image\_begin }
- [ set\_bootable\_partition\_bootable ]
- [ clear\_target\_drive ]
- [ fill\_empty\_blocks ]
- [ append\_on\_target\_drive ]
- [ chs\_alignment ]
- [ ignored\_read\_errors ]
- [ ignore\_data\_modification ]
- [ write\_data\_directly ]
- [ overwrite\_target\_data ]
- [ automatically\_convert\_multi\_disk\_volumes ]
- [ automatically\_create\_target\_drive\_like\_source\_drive ]

#### Notes

**Important!** During the restoration process, the image will overwrite your target drive with the drive data saved on the image. All data saved on the target drive is thereby lost and replaced by that of the image. If the parameter "clear\_target\_drive" was set to true or yes, a confirmation dialogue about deleting the target volume system will not appear!

If the source hard disk is still contained in the current system and the image will not be restored on it, the serial number of the target hard disk will be converted into the serial number of a hard disk with an MBR. Under certain conditions, this can lead to encrypted systems being identified as defective.

#### Example

```
<command name="restore image">
<device_type>filesystem</device_type>
```

## Commands

```
<image_name>C:\OODI\Image_1.omg</image_name>
<target_drivenumber>2</target_drivenumber>
<image_drivenumber>1</image_drivenumber>
<clear_target_drive>yes</clear_target_drive>
</command>
<command name="restore image">
<device_type>filesystem</device_type>
<image_name>C:\OODI\Image_1.omg</image_name>
<target_driveletter>I</target_driveletter>
<image_object_id>8</image_object_id>
</command>
```

### validate image

This function checks the structural integrity of an image file. It will examine whether the required logical structure is intact or undamaged. In addition, encrypted and/or compressed images will be checked to determine if decryption or decompression is possible without error.

#### Parameters

- device\_type
- image\_name
- [all\_splits]
- [ password ]
- [image\_object\_id]
- [ignore\_data\_modification ]

#### Example

```
<command name="validate image">
<device_type>filesystem</device_type>
<image_name>c:\OODI\image20071127.omg</image_name>
<all_splits>yes</all_splits>
</command>
```

## File-based backup functions

### create backup

Creates a file-based backup using transferred criteria.

#### Parameters

- backup\_type
- compression\_type

## Commands

- encryption\_type
- checksum\_type
- device\_type
- backup\_name
- backupset\_id
- backupset\_criteria
- [ password ]
- [ comments ]
- [ max\_backup\_size ]
- [ force\_dismount | snapshot | vss ]
- [ ignored\_read\_errors ]
- [ ignore\_invalid\_free\_size\_appointment ]
- [ automatically\_validate\_backup ]
- [ automatically\_overwrite\_backup ]
- [ ignore\_snapshot\_cache\_overflow ]
- [ automatically\_convert\_to\_vhd ]
- [ backupset\_name ]
- [ backupset\_comments ]
- [ backupset\_exclude ]

**Note:** When the maximum file size of the target drive's file system is reached or the drive is full, the backup file will be automatically split unless there's a maximum size set for it.

### Example

```
<command name="create backup">
<backup_type>extended ZIP file backup</backup_type>
<compression_type>BZIP2 4K</compression_type>
<device_type>filesystem</device_type>
<backup_name>c:\OODI\backup20111005.obk</backup_name>
<ignored_read_errors>yes</ignored_read_errors>
<backupset_id>{00000000-0000-0000-0000-000000000000}</backupset_id>>
<backupset_criteria>!:\documents\</backupset_criteria>
</command>
```

### create incremental backup

Creates an incremental file-based backup. A backup will be created that contains only the changed files from a selected existing backup.

#### Parameters

- device\_type
- backup\_name
- compression\_type
- encryption\_type
- new\_backup\_name
- new\_device\_type

## Commands

- [ password ]
- [ new\_password ]
- [ new\_comments ]
- [ new\_max\_backup\_size ]
- [ force\_dismount | snapshot | vss ]
- [ ignore\_data\_modification ]
- [ ignored\_read\_errors ]
- [ ignore\_invalid\_free\_size\_appointment ]
- [ automatically\_validate\_backup ]
- [ automatically\_overwrite\_backup ]
- [ ignore\_snapshot\_cache\_overflow ]

### Example

```
<command name="create incremental backup">
<device_type>filesystem</device_type>
<backup_name> c:\OODI\Image20111005.obk </backup_name>
<compression_type> BZIP2 4K </compression_type>
<new_device_type>filesystem</new_device_type>
<new_backup_name> c:\OODI\Image20111005_INC.obk</new_backup_name>
<ignored_read_errors>yes</ignored_read_errors>
<max_backup_size>-1</max_backup_size>
</command>
```

### restore backup

Restores files/data from a file-based backup.

#### Parameters

- device\_type
- backup\_name
- [ password ]
- [ target\_path ]
- [ overwrite\_target\_data ]
- [ ignored\_read\_errors ]
- [ ignore\_data\_modification ]

**Note:** If no target parameter (target\_path) is indicated, the original data will be overwritten with data from the backup.

### Example

```
<command name="restore backup">  
<device_type>filesystem</device_type>  
<backup_name>c:\OODI\backup20111005.obk</backup_name>  
<overwrite_target_data>yes</overwrite_target_data>  
</command>
```

### validate backup

This function checks the structural integrity of the backup file. It will examine whether the required logical structure is intact or undamaged. In addition, encrypted and/or compressed backups will be checked to determine whether decryption or decompression is possible without error.

#### Parameters

- device\_type
- backup\_name
- [ all\_splits ]
- [ password ]
- [ ignore\_data\_modification ]

**Note:** If no target parameter (target\_path) is indicated, the original data will be overwritten with data from the backup.

### Example

```
<command name="validate backup">  
<device_type>filesystem</device_type>  
<backup_name>c:\OODI\Image20111005.obk</backup_name>  
</command>
```



## Disk management functions

### assign drive letter

Assigns a drive letter to the selected drive or changes it.

#### Parameters

- driveletter\_to\_set
- { devicename | driveletter | drivenummer | serialnumber | begin }

#### Notes

Drive letters of current system volumes and the startup volume cannot be changed.

A maximum of 26 letters are allowed for one computer. The drive letters A and B are reserved for floppy drives. These letters, however, may be assigned to removable media drives when the computer doesn't feature a floppy drive.

#### Example

```
<command name="assign drive letter">
<drivenumber>2</drivenumber>
<begin>32256</begin>
<driveletter_to_set>X</driveletter_to_set>
</command>
```

### checkdisk

Command that checks disks for problems. It also offers the option to correct recognized problems.

#### Parameters

- correct\_errors
- verbose
- check\_only\_if\_dirty
- locates\_bad\_sectors\_recover\_readable\_information
- { devicename | driveletter | drivenummer | serialnumber | begin | system\_volume | data\_volumes }

#### Notes

This command can possibly require a large amount of time to run. The amount of time needed will depend on the number of files and folders, the size of the disk, the disk's performance and the available system resources, such as processor and memory.

#### Example

```
<command name="checkdisk">
<driveletter>E</driveletter>
<correct_errors>no</correct_errors>
```

## Commands

```
<verbose>yes</verbose>  
<check_only_if_dirty>no</check_only_if_dirty>  
<locates_bad_sectors_recover_readable_information>no  
</locates_bad_sectors_recover_readable_information>  
</command>
```

### clear disk

Removes all formatting from partitions and volumes on the selected storage volume.

#### Parameters

- { devicename | drivenumber | serialnumber }
- [ is\_superfloppy ]

#### Notes

All drives will be deleted.

#### Example

```
<command name="clear drive">  
<drivenumber>1</drivenumber | serialnumber>  
<is_superfloppy>no</is_superfloppy>  
</command>
```

### create mirrored volume

Creates a mirrored volume.

#### Parameter

- size
- { devicename\_one | drivenumber\_one | serialnumber\_one }
- { devicename\_two | drivenumber\_two | serialnumber\_two }
- [ driveletter\_to\_set ]

#### Notes

The function for creating a mirrored volume is dependent on the operating systems that are currently installed and enabled.

Two dynamic volumes are needed for creating a mirrored volume.

It is possible to mirror a simple available volume.

Mirrored volumes are error-tolerant and use RAID-1. Redundancy is assured through the creation of two identical copies of a volume.

It is not possible to extend mirrored volumes or to convert them into stripe set volumes.

Both copies (mirrors) of the mirrored volumes use the same drive letters.

You can install an operating system on a simple or mirrored dynamic volume only. Entries in the partition table must exist for this volume (i.e., that this was a system or start volume).

### Example

```
<command name="create mirrored volume">  
<drivenumber_one>2</drivenumber_one>  
<drivenumber_two>3</drivenumber_two>  
<size>8589934592</size>  
<driveletter_to_set>M</driveletter_to_set>  
</command>
```

## create RAID5 volume

Creates a RAID-5 volume with at least three selected dynamic volumes.

### Parameter

- RAID5\_column\_size
- size
- { devicename | drivenumber | serialnumber } ...
- [ driveletter\_to\_set ]

### Notes

Depending on current and enabled operating systems, a mirrored volume can be created.

At least three dynamic volumes are required for creating a RAID-5 volume.

A RAID-5 volume helps you achieve error-tolerance. This will merely require an additional storage volume for the volume. If you're using, for example, three 10 GB storage volumes to create a RAID-5 volume, the volume will contain a total of 20 GB. The remaining storage space of 10 GB will be used for parity.

RAID-5 volumes can neither be extended nor mirrored.

### Example

```
<command name="create RAID5 volume">  
<drivenumber>2</drivenumber>  
<drivenumber>3</drivenumber>  
<drivenumber>4</drivenumber>
```

## Commands

```
<size>8589934592</size>  
<RAID5_column_size>8589934592</RAID5_column_size>  
<driveletter_to_set>R</driveletter_to_set>  
</command>
```

### create simple volume

Creates a simple volume.

#### Parameter

- { devicename | drivenumber | serialnumber }
- { size | complete\_region\_size | remaining\_range | part\_of\_disk\_size }
- [ driveletter\_to\_set ]

#### Notes

You can create simple volumes on dynamic volumes only.

Simple volumes are not error-tolerant.

You can install an operating system on a simple or mirrored dynamic volume only. Entries in the partition table must exist for this volume (i.e., that this was a system or start volume).

#### Example

```
<command name="create simple volume">  
<drivenumber>2</drivenumber>  
<size>5368709120</size>  
<driveletter_to_set>S</driveletter_to_set>  
</command>
```

### create spanned volume

Creates a spanned volume.

#### Parameter

- size
- { devicename | drivenumber | serialnumber }
- [ driveletter\_to\_set ]

#### Notes

You can create spanned volumes on dynamic volumes only.

At least two dynamic volumes are needed for creating an spanned volume.

A spanned volume can be expanded for as many as 32 dynamic volumes.

It is not possible to mirror spanned volumes or to convert them into stripe set volumes.

Spanned volumes are not fault-tolerant.

### Example

```
<command name="create spanned volume">  
<size>5368709120</size>  
<drivenumber>2</drivenumber>  
<size>2684354560</size>  
<drivenumber>3</drivenumber>  
<size>2684354560</size>  
<driveletter_to_set>S</driveletter_to_set>  
</command>
```

## create striped volume

Creates a stripe set volume with at least two selected dynamic volumes.

### Parameter

- size
- { devicename\_one | drivenumber\_one | serialnumber\_one }
- { devicename\_two | drivenumber\_two | serialnumber\_two }
- [ driveletter\_to\_set ]

### Notes

At least two dynamic volumes are needed for creating a stripe set volume. A stripe set volume can be created for as many as 32 storage volumes.

Stripe set volumes are not fault-tolerant, and can neither be extended nor mirrored.

### Example

```
<command name="create striped volume">  
<drivenumber_one>2</drivenumber_one>  
<drivenumber_two>3</drivenumber_two>  
<size>8589934592</size>  
<driveletter_to_set>S</driveletter_to_set>  
</command>
```

## create partition

Creates a partition on a basic disk.

### Parameters

- { devicename | drivenumber | serialnumber | begin }
- { size | complete\_region\_size | remaining\_range | part\_of\_disk\_size }
- [ format ]
- { NTFS | FAT16 | FAT32 | huge | extended }
- [ label ]
- [ no\_alignment | default\_windows\_alignment | chs\_alignment ]
- [ driveletter\_to\_set ]

### Notes

Primary partitions, extended partitions and logical drives can only be created on a basic disk.

On volumes with an MBR (Master Boot Record), you can optionally create up to four partitions, or three primary partitions and one extended partition.

On volumes with a GPT (GUID-Partition Table), you can create up to 128 primary partitions

### Example

```
<command name="create partition">
<drivenumber>1</drivenumber>
<begin>8595417600</begin>
<size>2147483648</size>
<huge>yes</huge>
<default_windows_alignment>yes
</default_windows_alignment>
</command>
```

## delete partition

Deletes the selected partitions on a basic disk.

### Parameter

- { devicename | driveletter | drivenumber | serialnumber | begin }

### Notes

**Important!** As a result of deleting a partition, all data on the deleted partition or logical drive will be lost

**Important!** Deleted partitions or logical drives cannot be restored.

You cannot delete the system volume, the start volume and any volumes upon which the active swap file or crash dump (memory dump) are found.

An extended partition can only be deleted when it is empty.

You must delete all logical drives in an extended partition before you can delete it

### Example

```
<command name="delete partition">  
<driveletter>G</driveletter>  
</command>
```

## delete volume

Deletes the entire volume.

### Parameter

- { devicename | driveletter | drivenummer | serialnumber | begin }

### Notes

**Important!** Be very careful when deleting volumes. All data on the volume, as well as the volume itself, will be deleted when you delete a simple, spanned, mirrored or RAID-5 volume.

**Important!** Deleted volumes cannot be restored.

You cannot delete the system volume, the start volume and any volumes upon which the active swap file or crash dump (memory dump) are found.

### Example

```
<command name="delete volume">  
<driveletter>S</driveletter>  
</command>
```

## disconnect network drive

Disconnects an existing connection between the computer and an available resource.

### Parameter

- localname

### Notes

This will attempt to break the connection to this resource with the highest priority; i.e., all links and uses of files and/or folders from this resource will become invalid.

### Example

```
<command name="disconnect network drive">  
<localname>Z</localname>  
</command>
```

## fill disk sectors

Overwrites sectors of a storage volume, a region area of a storage volume, a partition or a volume with a specific value.

### Parameters

- { devicename | driveletter | drivenummer | serialnumber | begin | data\_volumes }
- [ value\_to\_fill ]

### Notes

**Important!** All data in this region will be permanently destroyed. If a region was selected that was linked with a partition or a volume, the data on that partition or volume will be destroyed. When a complete hard disk is selected, all objects and partitions/volumes with related data will be deleted and cannot be restored.

### Example

```
<command name="fill disk sectors">  
<drivenumber>1</drivenumber>  
<value_to_fill>0</value_to_fill>  
</command>  
  
<command name="fill disk sectors">  
<driveletter>F</driveletter>  
<value_to_fill>0</value_to_fill>  
</command>
```

## format

Formats a disk for use under Windows.

### Parameter

- quickformat
- enable\_compression
- force\_dismount
- { devicename | driveletter | drivenummer | serialnumber | begin }
- { NTFS | FAT16 | FAT32 }
- [ allocation\_unit\_size ]
- [ label ]



### Notes

It is not possible to format current system or boot partitions.

Compression will only be supported by NTFS volumes.

Quick formatting will remove all files from the disk; the disk will not, however, be checked for bad sectors.

### Example

```
<command name="format">  
<driveletter>G</driveletter>  
<quickformat>yes</quickformat>  
<enable_compression>no</enable_compression>  
<force_dismount>yes</force_dismount>  
<NTFS>yes</NTFS>  
</command>
```

### grow partition

Extends the partition into the next, non-reserved storage space on the same disk. Beyond that, it must follow on the partition (i.e., feature a higher sector number).

#### Parameters

- { devicename | driveletter | drivenumber | serialnumber | begin }
- { size | remaining\_range | part\_of\_disk\_size }

### Notes

If the previous partition was formatted with the NTFS file system, the file system will be so extended that the larger partition will be occupied. A loss of data does not occur.

If the previous partition was formatted with a file system other than the NTFS, the command fails and no changes will be made to the partition.

It is not possible to extend the current system or boot partition.

### Example

```
<command name="grow partition">  
<driveletter>G</driveletter>  
<size>52428800</size>
```

</command>

## grow volume

With the help of this command you can extend newly created storage space onto an available volume. The selected volume will be thereby extended into the following non-reserved storage space. A dynamic simple or spanned volume can be extended onto any available storage space on any dynamic volume.

### Parameter

- size
- { devicename | driveletter | drivenummer | serialnumber | begin }

### Notes

A volume can only be extended when the respective volume features no file system or was formatted with using NTFS. Volumes formatted with FAT or FAT32 cannot be extended.

It is not possible to extend the current system or boot partition.

Simple or extended volumes that are not system or start volumes can be extended provided there is enough available storage space. Among these are volumes which were created as dynamic or basic, and then were converted into dynamic volumes.

It is not possible to extend stripe set or RAID-5 volumes.

It is possible to extend a simple volume onto multiple dynamic volumes. In this way they obtain a spanned volume. It is not possible to mirror spanned volumes or to convert them into stripe set volumes.

Should a spanned volume be extended, you cannot delete any part of it without deleting the entire spanned volume.

### Example

```
<command name="grow partition">
```

```
<driveletter>J</driveletter>
```

```
<size>-52428800</size>
```

```
</command>
```

## initialized storage devices

Definition for identifying and displaying existing storage volumes.

### Parameter

- { default\_devices | all\_devices | disk\_devices | cddvd\_devices | floppy\_devices }

### Notes

If a particular storage volume group was adjusted and enabled, drives from other disk groups will not be identified and accessible.

### Example

```
<command name="initialized storage devices">  
<disk_devices>yes</disk_devices>  
</command>
```

## initialize disk

Initializes a disk into a selected type of disk

Parameter

- { devicename | drivenumber | serialnumber }
- { basic\_disk | gpt\_disk | dynamic\_disk }

### Notes

Parameter "basic\_disk":

The disk must be blank in order for it to be converted into a dynamic volume. First secure the data, and then delete all partitions or volumes before converting it.

Parameter "dynamic\_disk":

All partitions existing on the disk will be converted into simple volumes.

### Example

```
<command name="initialize disk">  
<drive_number>1</drive_number>  
<basic_disk>yes</basic_disk>  
</command>
```

## map network drive

Connects a computer with an available resource.

Parameter

- remotename
- [ localname ]
- [ username ]
- [ password ]

### Example

```
<command name="map network drive">
```

## Commands

```
<remotename>\\server\share</remotename>
```

```
<localname>Z</localname>
```

```
</command>
```

### rescan disks

Renewed detecting of an initialized drive. Among other reasons, you need this command to search for new disks which could be possibly added to the computer.

#### Parameter

(no parameter)

#### Example

```
<command name="rescan disks"></command>
```

### restart

Restarts the computer.

#### Parameter

(No parameters)

#### Note

All data and documents not saved will be lost.

#### Example

```
<command name="restart"></command>
```

### set partition active

With this command, partitions on basic disks will be marked as active. In this way, the Basic Input/Output System (BIOS) or the EFI (Extensible Firmware Interface) will be informed that the partition or volume is a valid system partition or system.

#### Parameter

- set\_active
- { devicename | driveletter | drivenummer | serialnumber | begin }

#### Note

A logical drive cannot be marked as an active partition.

Only a partition on a MBR basic disk can be marked as active.

Only one active partition per storage volume is possible on a computer.

Changing or deleting an active partition may result in the computer no longer being able to start.

Partitions containing the boot and operating system files are labeled boot or system partitions by default.

The system partition must be a primary partition that is marked as active for starting. It must be located on the disk that the computer will access when it starts up. There is always only one active system partition on any one disk. Multiple basic disks with a corresponding active partition are possible. The computer will be booted, however, from only one disk. Should you wish to use another operating system, you will first have to label the corresponding system partition as active before restarting the computer.

The system partition can never be part of a stripe set volume, a spanned volume or a RAID-5 volume.

An existing dynamic volume cannot be marked as an active partition. You can, however, convert a basic disk containing the active partition into a dynamic volume. After a successful conversion of the volume, the partition will be a simple, active volume. If the active partition is not the current system or boot partition, it will become a simple volume and loses its entry in the partition table. Therefore, the partition cannot be enabled anymore.

### Example

```
<command name="set partition active">  
<drivenumber>1</drivenumber>  
<begin>32256</begin>  
<set_active>>false</set_active>  
</command>
```

## set volume label

Assign or transpose the drive name of a partition or volume.

### Parameter

- label
- { devicename | driveletter | drivenumber | serialnumber | begin }

### Example

```
<command name="set volumelabel">  
<devicename>\Device\HarddiskVolume3</devicename>  
<label>Datenpartition</label>  
</command>
```

## shutdown

Shutdown the computer.

### Parameter

(No parameters)

### Note

All data and documents not saved will be lost.

### Example

```
<command name="shutdown"></command>
```

## Functions for system properties

### activate setup

Enables the setup of the operating system after restart.

Parameter

- operating\_system\_path
- setup\_type
- { unattended }

#### Note:

In order for the operating system to consider changes to the computer name, a restart is required.

### Example

```
<command name="activate setup">  
  <operating_system_path>"E:\WINDOWS"</operating_system_path>  
  <setup_type>mini_setup</setup_type>  
  <unattended>>true</unattended>  
</command>
```

### assume devices

Device management drivers that are currently loaded should be applied.

#### Parameters

operating\_system\_path

#### Notes

In order for the operating system to consider the changes to the computer name, a restart is required.

### Example

```
<command name="assume devices">  
  <operating_system_path>"E:\WINDOWS"</operating_system_path >  
</command>
```

### change computer name

Change the computer name of the current operating system or the one forming the regular basis.

#### Parameter

- Computer\_name
- { registry\_information\_path }

#### Notes

In order for the operating system to consider changes to the computer name, a restart is required.

#### Example

```
<command name="change computer name"> <computer_name>MyComputer</computer_name> </command>
```

### change computer sid

Change the SID of the current or the underlying operating system.

#### Parameter

- { registry\_information\_path }

#### Notes

In order for the operating system to consider changes to the computer name, a restart is required.

#### Example

```
<command name="change computer sid"> <registry_information_path>"E:\WINDOWS\system32\config"</ registry_information_path > </command>
```

### replace hal

Replacement of the hardware abstraction layer.

#### Parameter

- { operating\_system\_path }

#### Note

In order for the operating system to consider changes to the computer name, a restart is required.

#### Example

```
<command name="replace hal">  
<operating_system_path>"E:\WINDOWS"</operating_system_path>  
</command>
```

## Formatting legend

Format	Description
Ellipsis (...)	Parameters which can be repeated several times in a command line
Between square brackets ([ ])	Optional Elements
Curly brackets ({}). Separate options from each other with a pipe sign ( ). Example: {even odd}	A group of selection possibilities from which the user must choose an option



## Parameter

### Global parameter, parameter without command shortcut

#### logfile

Creation of a log file to communicate the status of the processing.

#### Example

```
<logfile>C:\DiskImageLogfile.log</logfile>
```

#### interaction

During the command processing, denotes if a confirmation dialogue is possible or if the processing should take place in the background. No processing in the background is default.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<interaction>no</interaction>
```

#### stop\_at\_error

Denotes whether the processing of a command file should continue if an error occurs. No further processing is the default value, which means that the processing will be aborted when an error occurs.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<stop_at_error>no</stop_at_error>
```

## Command specific parameter

#### all\_devices

Initializes and displays all drive types of system.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<all_devices>yes</all_devices>
```

#### all\_sources

All (Source-) objects from an image should be included in the processing.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<all_sources>yes</all_sources>
```

### **all\_splits**

All parts of an image should be used for the processing.

It can be specified during the check, whether the current part of the image should be checked.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<all_splits>>false</all_splits>
```

### **allocation\_unit\_size**

The selected cluster size when creating a file system on a drive. Diese Größe wird in Bytes angegeben.

#### **Example**

```
<allocation_unit_size>4096</allocation_unit_size>
```

### **append\_on\_target\_drive**

Denotes that the selected object should be appended onto the storage volume. Existing partitions of the disk will not be affected by it.

Valid values: "yes" or "true"

#### **Example**

```
<append_on_target_drive>>true</append_on_target_drive>
```

### **automatically\_create\_target\_drive\_like\_source\_drive**

The target layout is automatically created equally to the source layout. A restoration/cloning will not take place with the interpretations of the file systems.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<automatically_create_target_drive_like_source_drive>>true
```

```
</automatically_create_target_drive_like_source_drive>
```

### **automatically\_checkdisk**

Mark if the default parameters should be run after processing the command chkdsk automatically.

## Parameter

Valid values: "yes", "no", "true" and "false"

### Example

```
<automatically_checkdisk>true</automatically_checkdisk>
```

## **automatically\_convert\_multi\_disk\_volumes**

Label that without prompting a volume, which was originally distributed on several hard disks, should be the target of a partition when allocating on an empty space of the basic disk. Valid values: "yes", "no", "true" and "false"

### Example

```
<automatically_convert_multi_disk_volumes>true </automatically_convert_multi_disk_volumes>
```

## **automatically\_convert\_to\_vhd**

Label indicating whether, the image should be converted into a "Virtual Hard disk Image" with the same name after the command has been processed. Valid values: "yes", "no", "true" and "false"

### Example

```
<automatically_convert_to_vhd>true</automatically_convert_to_vhd>
```

## **automatically\_overwrite\_backup**

Label indicating whether the existing imaging file should be deleted without asking beforehand.

Valid values: "yes", "no", "true" and "false"

### Example

```
<automatically_overwrite_backup>true</automatically_overwrite_backup>
```

## **automatically\_overwrite\_image**

Label indicating whether the existing imaging file should be deleted without asking beforehand.

Valid values: "yes", "no", "true" and "false"

### Example

```
<automatically_overwrite_image>true</automatically_overwrite_image>
```

## **automatically\_validate\_image**

Denotes whether the image file should be checked automatically after the processing of the command.

Valid values: "yes", "no", "true" and "false"

### Example

```
<automatically_validate_image>true</automatically_validate_image>
```

### **automatically\_validate\_backup**

Denotes whether the image file should be checked automatically after the processing of the command.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<automatically_validate_backup>>true</automatically_validate_backup>
```

### **backup\_name**

Defines the name of the image file including path.

#### **Example**

```
<backup_name>C:\Image20111006.obk</backup_name>
```

### **backup\_type**

Labels the type of backup, the desired backup method for data-based backup.

extended ZIP file backup: creation of backup file that displays a ZIP format extension.

#### **Example**

```
<backup_type>extended ZIP file backup</backup_type>
```

### **backupset\_comments**

A backupset is a resume of criteria used to describe the files/folders being backed up. This parameter will help you include comments within the backupset.

#### **Example**

```
<backupset_comments>backup personal files</backupset_comments>
```

### **backupset\_id**

This parameter displays an ID with which a backupset can be clearly identified. This parameter is currently not being used and should be filled with "0".

#### **Example**

```
<backupset_id>{00000000-0000-0000-0000-000000000000}</backupset_id>
```

### **backupset\_name**

The name of a backupset for easier classification and display.

#### **Example**

```
<backupset_name>my documents</backupset_name>
```

### **backupset\_exclude**

A backupset is a resume of criteria used to describe the files/folders being backed up. This parameter is for excluding a data volume determined by a criterion. It describes files or folders using path and/or filename details. The established wildcards "\*" and "?" are also permitted here.

#### **Example**

```
<backupset_exclude>*.tmp</backupset_exclude>
```

### **backupset\_criteria**

## Parameter

A backupset is a resume of criteria used to describe the files/folders being backed up. This parameter is a criterion for creating a file-based backup. This criterion describes files or folders using path and/or filename details. The established wildcards "\*" and "?" are also permitted here.

### Example

```
<backupset_criteria>C:\Documents and Settings\My Documents\</backupset_criteria>
```

## backupset\_criteria

Delete this text and substitute it by your own.

### basic\_disk

Initialization of a disk as a "basic disk".

Valid values: "yes", "no", "true" and "false"

#### Example

```
<basic_disk>yes</basic_disk>
```

### begin

Definition of a position at the beginning of a disk.

#### Example

```
<drivenumber>1</drivenumber>
```

```
<begin>32256</begin>
```

### cddvd\_devices

Only CD/DVDs should be initialized and prepared for display.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<cddvd_devices>yes</cddvd_devices>
```

### change\_initial\_condition

Label indicating that the original values should be adapted dynamically to a command in order to repeat that command. While creating an incremental image file it is possible to set an image file created with the help of template parameter as base image for the successive processing.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<change_initial_condition>yes</change_initial_condition>
```

### check\_only\_if\_dirty

Checks a drive only when it is labeled as defective or will check only its defective regions.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<check_only_if_dirty>no</check_only_if_dirty>
```

**checksum\_type**

Fixes the type of checksum procedure. Used for the checking and comparison of data and data regions.

Valid values:

none	No checksum procedure selected
MD5	checksum procedure using the MD5 algorithm
SHA1	checksum procedure using the SHA1 algorithm
SHA2 256	checksum procedure using the SHA2 256 algorithm
SHA2 512	checksum procedure using the SHA2 512 algorithm
CRC32	checksum procedure using the CRC32 algorithm

**Example**

```
<checksum_type>MD5</checksum_type>
```

**chs\_alignment**

Specifies the alignment on partitions. This parameter will force the alignment on cylinders (cylinder/head/sector).

Valid values: "yes", "no", "true" and "false"

**Example**

```
<chs_alignment>true</chs_alignment>
```

**clear\_target\_drive**

Automatic deletion of the target disk. All existing partitions/volumes will be deleted.

**Notes**

**Important!** This parameter disables the confirmation dialogue and automatically deletes all drives!

Valid values: "yes", "no", "true" and "false"

**Example**

```
<clear_target_drive>yes</clear_target_drive>
```

**clone\_type**

backupset\_criteria

Label indicating the clone type.

used sector	cloning of the used sectors
forensic sector	forensic cloning of all sections of a drive
direct forensic sector	direct forensic cloning of all sectors of a drive

### Example

```
<clone_type>used sector</clone_type>
```

### comments

You can use this parameter to add comments to the image.

### Example

```
<comments>This is a sample for creating incremental images... </comments>
```

### complete\_region\_size

The complete region should be used for processing. When creating a partition, the complete size of the region will be used as the basis for the partition.

Valid values: "yes", "no", "true" and "false"

### Example

```
<complete_region_size>>true</complete_region_size>
```

### compression\_type

Label indicating the compression type.

none	No compression selected
LZNT1 standard	LZNT 1 standard compression
LZNT1 maximum	LZNT 1 maximum, stronger compression - considerably more time required
BZIP2 1K	BZIP2 compression with block size of 100000 Bytes
BZIP2 4K	BZIP2 compression with block size of 400000 Bytes
BZIP2 9K	BZIP2 compression with block size of 900000 Bytes

### Example



backupset\_criteria

```
<compression_type>LZNT1 standard</compression_type>
```

### **correct\_errors**

Detected errors should be corrected.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<correct_errors>no</correct_errors>
```

### **data\_volumes**

Label indicating only non-system volumes or non-system partitions should be included for processing.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<data_volumes>yes</data_volumes>
```

### **default\_devices**

The standard disks should be initialized and be ready display. The initialized standard disks include hard disks, CDROMs and DVDROMs.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<default_devices>yes</default_devices>
```

### **default\_windows\_alignment**

Specifies how partitions will be aligned. This parameter draws on the type of alignment from the operating system or the hard disk to align the partition.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<default_windows_alignment>yes
```

```
</default_windows_alignment>
```

### **device\_name**

The name of the selected drive/disk.

#### **Example**

```
<device_name>\\Device\\HarddiskVolume2</device_name>
```

backupset\_criteria

### device\_name\_two

The name of a second device.

#### Example

```
<device_name_two>\Device\len\lenDeviceP1T0L0-e</device_name_two>
```

### device\_type

Indicates the type or description of the target or source drive.

filesystem	Standard - file system
------------	------------------------

#### Comment:

Reserved for future versions. A value other than "filesystem" is currently invalid and will lead to error.

#### Example

```
<device_type>filesystem</device_type>
```

### disk\_devices

Only hard disks should be initialized and prepared for display.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<disk_devices>yes</disk_devices>
```

### drivenumber

The number of the selected drive.

#### Example

```
<drivenumber>1</drivenumber>
```

### drive\_number\_one

The number of the first selected drive.

#### Example

```
<drive_number_one>2</drive_number_one>
```

### drive\_number\_two

The number of the second selected drive.

#### Example

```
<drive_number_two>2</drive_number_two>
```

### driveletter

The drive letter of the selected drive.

#### Example

```
<driveletter>C</driveletter>
```

### driveletter\_to\_set

The drive letter to be set.

#### Example

```
<driveletter_to_set>Y</driveletter_to_set>
```

### dynamic\_disk

Initializing a disk as a „dynamic disk“.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<dynamic_disk>>true</dynamic_disk>
```

### enable\_compression

Files created on a new volume or partition will be compressed by default.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<enable_compression>yes</enable_compression>
```

### encryption\_type

Label indicating the type of encryption.

none	No encryption type selected
AES 128	AES - encryption with 128 bit
AES 192	AES - encryption with 192 bit
AES 256	AES - encryption with 256 bit

#### Example

```
<encryption_type>AES 192</encryption_type>
```

### **extended**

Creates an extended partition, i.e., a drive upon which a logical drive can be created.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<extended>yes</extended>
```

### **FAT16**

Indicates the partition and/or file system that will be created when you want to create a FAT16 drive and/or file system.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<FAT16>>true</FAT16>
```

### **FAT32**

Indicates the partition and/or file system that will be created when you want to create a FAT 32 drive and/or file system.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<FAT32>yes</FAT32>
```

### **fill\_empty\_blocks**

Fills empty regions on the target drive with the value „0“.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<fill_empty_blocks>no</fill_empty_blocks>
```

### **floppy\_devices**

Use this parameter when you only want to initialize floppy drives and prepare them for display.

Valid values: "yes", "no", "true" and "false"

#### **Example**

```
<floppy_devices>>true</floppy_devices>
```

### **force\_dismount**

## backupset\_criteria

Forces the cancellation of the volume's deployment when necessary. All files/handles opened to the volume will be closed.

Valid values: "yes", "no", "true" and "false"

### Example

```
<force_dismount>yes</force_dismount>
```

## format

Indicates whether or not the drive should be formatted after creation, and if the file system should be created.

Valid values: "yes", "no", "true" and "false"

### Example

```
<format>yes</format>
```

## gpt\_disk

Initializes a disk as a „gpt disk“.

Valid values: "yes", "no", "true" and "false"

### Example

```
<gpt_disk>yes</gpt_disk>
```

## hash\_unchanged\_data

Indicates whether the unchanged data of an incremental image should be stored in the image as a hash-value (checksums). This increases the size of the incremental image but will accelerate data access for the next imaging procedure.

Valid values: "yes", "no", "true" and "false"

### Example

```
<hash_unchanged_data>no</hash_unchanged_data>
```

## huge

Indicates the drive that will be created, especially for labeling a large partition.

Valid values: "yes", "no", "true" and "false"

### Example

```
<huge>yes</huge>
```

## ignore\_data\_modification

Influences the behavior while restoring or validating images, if it was detected that data was changed within the image. If these parameters are not set with a negation, the handling will be cancelled. Otherwise, only the

backupset\_criteria

change will be recorded in the report and the process will continue.

Valid values: "yes", "no", "true" and "false"

#### Notes

If the data in the image is changed outside the program, they might contain errors and be rendered useless.

#### Example

```
<ignore_data_modification>yes</ignore_data_modification>
```

### ignore\_snapshot\_cache\_overflow

Label indicating whether a potential overflow of the cache should be considered as an error, and as a result, will be canceled.

Valid values: "yes", "no", "true" and "false"

#### Notes

Should you exceed the available cache space, the original data sectors will no longer be saved and included in the image. This makes the image inconsistent and may render it unusable.

#### Example

```
<ignore_snapshot_cache_overflow>yes</ignore_snapshot_cache_overflow>
```

### ignore\_invalid\_free\_size\_appointment

Indicates whether an error occurring during the detection for free storage space on a drive should be ignored and the process continued.

Valid values: "yes", "no", "true" and "false"

#### Notes

When creating the image file, this parameter could lead to its being made invalid when nothing more can be written onto the target drive. It should be used mainly for allowing access to NAS drives that do not report free regions and are not able to be imaged.

#### Example

```
<ignore_invalid_free_size_appointment>yes</ignore_invalid_free_size_appointment>
```

### ignored\_file

Indicates files that should be excluded. Data from these files will not be applied to the image.

#### Example

```
<ignored_file>*.temp</ignored_file>
```

```
<ignored_file_pattern>*.~</ignored_file_pattern>
```

### ignored\_read\_errors

Possible read errors that occur should be ignored without a confirmation dialogue. These sectors will be

backupset\_criteria

skipped during the read procedure and noted in the log file.

Valid values: "yes", "no", "true" and "false"

**Example**

```
<ignored_read_errors>yes</ignored_read_errors>
```

### **image\_begin**

Defines a position at the beginning of a disk and indicates a region of the image file.

**Example**

```
<image_drivenumber>2</image_drivenumber>
```

```
<image_begin>1048576</image_begin>
```

### **image\_drivenumber**

Defines the number of the selected disk from the image.

**Example**

```
<image_drivenumber>1</image_drivenumber>
```

### **image\_driveletter**

Defines the drive letters of the selected drive from the image.

**Example**

```
<image_driveletter>D</image_driveletter>
```

### **image\_name**

Defines the name of the image file including path.

**Example**

```
<image_name>C:\ImageFiles\Image20071127.omg</image_name>
```

### **image\_object\_id**

Defines the ID of the selected object from/in the image.

**Example**

```
<image_object_id>3</image_object_id>
```

### **image\_type**

Label indicating the type of imaging, i.e., the selected imaging method.

used sector	imaging of the used sectors
forensic sector	forensic imaging of all sectors of a drive
direct forensic sector	direct forensic imaging of all sectors of a drive

### Example

```
<image_type>used sector</image_type>
```

### is\_superfloppy

Labels a storage volume as "superfloppy". Such a disk consists of one drive only and contains no system regions, i.e., no partition structure will be written on it.

Valid values: "yes", "no", "true" and "false"

### Example

```
<is_superfloppy>yes</is_superfloppy>
```

### label

Label of the selected drive based on the drive's name.

### Example

```
<label>System</label>
```

### localname

The local name of the resource.

### Example

```
<localname>Z</localname>
```

### locates\_bad\_sectors\_recover\_readable\_information

An investigation of bad sectors and the restoration of the readable data are requested.

Valid values: "yes", "no", "true" and "false"

### Example

```
<locates_bad_sectors_recover_readable_information>yes
```

```
</locates_bad_sectors_recover_readable_information>
```

### max\_backup\_size



## backupset\_criteria

Fixes the maximal size of the image file in bytes. A division will be made when this level is almost reached.

**Note:** The minimum value of a backup file is 1 megabyte, or 1048576 bytes. If a value lower than this amount is entered, the maximum size of the backup file will be set to 1 MB.

### Example

```
<max_backup_size>786432000</max_backup_size>
```

## new\_comments

This parameter will let you add comments into the new image file.

### Example

```
<new_comments>incremental image wg. Windowsupdate </new_comments>
```

## max\_image\_size

Fixes the maximal size of the image file in bytes. A division will be made when this level is almost reached.

### Notes

The minimum value of an image file is 5 Megabyte, more exactly 5242880 bytes. If the value is smaller than this, the maximal size of the image file will set at 5 MB.

### Example

```
<max_image_size>786432000</max_image_size>
```

## new\_device\_type

Indicates the type or description of the new target drive.

filesystem	Standard - file system
------------	------------------------

### Comment:

Reserved for future versions. A value other than "filesystem" is currently invalid and will lead to error.

### Example

```
<new_device_type> filesystem </new_device_type>
```

## new\_backup\_name

Describes the name of the new backup file including path.

### Example

```
<new_backup_name>C:\backup20111006_new.obk</new_backup_name>
```

## new\_image\_name

Describes the name of the new image file including path.

backupset\_criteria

### Example

```
<new_image_name>C:\Temp\Image20071031.omg</new_image_name>
```

## new\_password

Define a password as a parameter for creation.

### Example

```
<new_password>my new password</new_password>
```

## no\_alignment

Specifies how partitions will be aligned. This parameter will use no type of alignment: the position will be considered as absolute.

Valid values: "yes", "no", "true" and "false"

### Example

```
<no_alignment>true</no_alignment>
```

## NTFS

Label indicating the partitions and/or the file system that will be created if you want to create an NTFS drive and/or data system.

Valid values: "yes", "no", "true" and "false"

### Example

```
<NTFS>true</NTFS>
```

## operating\_system\_path

Path to the folder where the installed operating system files can be found.

### Example

```
<operating_system_path>E:\Windows</operating_system_path>
```

## overwrite\_target\_data

Automatic deletion of the target drive. All existing data on partitions/volumes will be deleted.

**Notes:** These parameters deactivate the confirmations and data on the target drive will be automatically deleted!

Valid values: "yes", "no", "true" and "false"

## part\_of\_disk\_size

backupset\_criteria

Part of the selected size of the drive being created in relation to the size of the disk.

**Example**

```
<part_of_disk_size>1/3</part_of_disk_size>
```

### password

Marks a password as a parameter.

**Example**

```
<password>My_Passwort</password>
```

### quickformat

Runs a formatting with quick formatting.

Valid values: "yes", "no", "true" and "false"

**Example**

```
<quickformat>no</quickformat>
```

### RAID5\_column\_size

The size of the memory, in bytes, which the volume will occupy on every disk.

**Example**

```
<RAID5_column_size>5368709120</RAID5_column_size>
```

### random\_access

Non-sequential access to the image file is requested.

Valid values: "yes", "no", "true" and "false"

**Example**

```
<random_access>yes</random_access>
```

### remaining\_range

Legt eine Partition in dem ersten freien Bereich an. The size of the partition will be determined by the free region of the selected disk.

Valid values: "yes", "no", "true" and "false"

**Example**

```
<remaining_range>yes</remaining_range>
```

backupset\_criteria

### remotename

The name of the server and the shared resource.

#### Example

```
<remotename>\\WantedServer\SharedFolder </remotename>
```

### serialnumber

The serial number of the desired disk.

#### Example

```
<serialnumber>JK1101YAH6KWMZ</serialnumber>
```

### serialnumber\_one

The serial number of the first desired disk.

#### Example

```
<serialnumber_one>2</serialnumber_one>
```

### serialnumber\_two

The serial number of the second desired disk.

#### Example

```
<serialnumber_two>2</serialnumber_two>
```

### setup\_type

Label indicating the type of installation being activated.

mini\_setup: Minimum setup installation of the operating system

#### Example

```
<setup_type>mini_setup</setup_type>
```

### sequential\_access

Sequential access to the image file is requested. This will mean an advantage in performance over non-sequential access, given that larger data regions can be included here.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<sequential_access>>true</sequential_access>
```

### set\_active

Labels whether "enable" or "disable" should be set for the selected drive.

Valid values: "yes", "no", "true" and "false"

#### Example

backupset\_criteria

```
<set_active>>true</set_active>
```

### set\_bootable\_partition\_bootable

Automatic setting of the bootable source partition as bootable. The confirmation dialogue will be disabled with this parameter.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<set_bootable_partition_bootable>yes
```

```
</set_bootable_partition_bootable>
```

### size

The size of an object in bytes.

#### Example

```
<size>1073741824</size>
```

### snapshot

As an option to the parameter "force\_dismount", the installed filter drivers will help log changes in data so that unchanged data can be included in the backup.

See also parameter "vss".

#### Example

```
<snapshot>true</snapshot>
```

### system\_volume

Label indicating that only the system volume or system partition will be drawn into the processing.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<system_volume>yes</system_volume>
```

### target\_begin

Defines a position at the beginning of a target disk.

#### Example

```
<target_drivenumber>1</target_drivenumber>
```

```
<target_begin>32256</target_begin>
```

### **target\_devicename**

The name of the requested target drive/target disk.

#### **Example**

```
<target_device_name>\Device\HarddiskVolume6</target_device_name>
```

### **target\_drivenumber**

Number of the target drive.

#### **Example**

```
<target_drivenumber>2</target_drivenumber>
```

### **target\_driveletter**

Drive letter of the target drive.

#### **Example**

```
<target_driveletter>G</target_driveletter>
```

### **target\_image\_type**

Type of the image to be created.

o&o image - the goal is to create an image by O&O DiskImage.

vhd image - a virtual hard disk of the Microsoft Virtual PC should be the target.

#### **Example**

```
<target_image_type>o&o image</target_image_type>
```

### **target\_path**

A target parameter where files/data should be written.

#### **Example**

```
<target_path>C:\New Folder\  
</target_path>
```

### **target\_serialnumber**

Serial number of the target disk.

#### **Example**

```
<target_serialnumber>GTA0L2PBGJPSSF</target_serialnumber>
```

### **uncompressed\_file**

Label indicating the files that should not be compressed.

#### **Example**

```
<uncompressed_file>*.zip</uncompressed_file>
```

### unattended

Label indicating an unattended installation, i.e., standard components will be installed and prompting questions avoided. Valid values: "yes", "no", "true" and "false"

#### Example

```
<unattended>yes</unattended>
```

### username

User name for identification of the person doing the requested operation. Such a user name can be extended through the name of a domain.

#### Example

```
<username>domain\HMuster</username>
```

### value\_to\_fill

Label indicating the value which will be used to fill (overwrite) an object. Possible are values from 0 to 9.

#### Example

```
<value_to_fill>0</value_to_fill>
```

### verbose

Display of extended information.

Valid values: "yes", "no", "true" and "false"

#### Example

```
<verbose>>true</verbose>
```

### vss

As an alternative to the parameter "force\_dismount", the Microsoft VolumeShadowCopyService can log changes in data so that unchanged data is included in the backup.

See also parameter "snapshot".

Valid values: "yes", "no", "true" and "false"

#### Example

```
<vss>>true</vss>
```

### write\_data\_directly

Data should be written directly on the drive, meaning without use of the file system driver. This is needed by an image file or cloning process of the type "direct forensic" for restoring an encrypted drive back to its original condition, or for cloning.

Valid values: "yes", "no", "true" and "false"

#### Example

backupset\_criteria

<write\_data\_directly>true</write\_data\_directly>

## Preset values of selected parameter

Parameter name	Default value
<a href="#">append_on_target_drive</a>	false/no
<a href="#">automatically_convert_multi_disk_volumes</a>	false/no
<a href="#">automatically_convert_to_vhd</a>	false/no
<a href="#">automatically_checkdisk</a>	false/no
<a href="#">automatically_overwrite_image</a>	false/no
<a href="#">automatically_validate_image</a>	false/no
<a href="#">clear_target_drive</a>	false/no
<a href="#">fill_empty_blocks</a>	false/no
<a href="#">force_dismount</a>	false/no
<a href="#">hash_unchanged_data</a>	true/yes
<a href="#">ignore_data_modification</a>	false/no
<a href="#">ignore_snapshot_cache_overflow</a>	false/no
<a href="#">ignore_invalid_free_size_appointment</a>	false/no
<a href="#">ignored_read_errors</a>	false/no
<a href="#">overwrite_target_data</a>	true/yes
<a href="#">set_active</a>	false/no
<a href="#">set_bootable_partition_bootable</a>	false/no



## Examples of command files

### Create an image of the "C" drive

Example 1:

Create an image of the "C" drive. This image will be compressed and saved whereby sectors not being imaged (those sectors that have not changed since the base image was created) will be given a hash value to check for changes in the future. The image will be compressed and split into files that have a maximum size of 650 MByte each. Once it's successfully created, the image will be automatically validated.

```
<DiskImageJob version="6.0">  
  
<command name="initialized storage devices">  
  
<disk_devices>YES</disk_devices>  
  
</command>  
  
<command name="create image">  
  
<image_type>used sector</image_type>  
  
<compression_type>LZNT1 standard</compression_type>  
  
<device_type>filesystem</device_type>  
  
<image_name>E:\image_20100128.xml</image_name>  
  
<ignored_read_errors>YES</ignored_read_errors>  
  
<driveletter>C</driveletter>  
  
<comments>Image of the system drive</comments>  
  
<max_image_size>650</max_image_size>  
  
<automatically_validate_image>YES</automatically_validate_image>  
  
<ignored_file_pattern>C:\MSOCache\*.*</ignored_file_pattern>  
  
<ignored_file_pattern>\pagefile.sys</ignored_file_pattern>  
  
<ignored_file_pattern>\hiberfil.sys</ignored_file_pattern>  
  
<ignored_file_pattern>\System Volume Information\</ignored_file_pattern>  
  
</command>  
  
</DiskImageJob>
```

### Create an incremental image from the base image

Example 2:

## Examples of command files

Create an incremental image from the image "E:\image20100120.omg". This image will be compressed and saved whereby sectors not being imaged (those sectors that have not changed since the base image was created) will be given a hash value to check for changes in the future. The incremental image will be named according to the date when the image is created. The parameter "automatically\_overwrite\_image" is set to "NO" so that an image with the same name may not be overwritten.

```
<DiskImageJob version="6.0">
<command name="initialized storage devices">
<disk_devices>YES</disk_devices>
</command>
<command name="create incremental">
<device_type>filesystem</device_type>
<image_name>E:\image20100120.omg</image_name>
<compression_type>LZNT1 standard</compression_type>
<new_device_type>filesystem</new_device_type>
<new_image_name>E:\image_$TEMPL:(Year)$TEMPL:(Month)$TEMPL:(Day)_inc.omg</new_image_
name>
<hash_unchanged_data>YES</hash_unchanged_data>
<ignored_read_errors>YES</ignored_read_errors>
<automatically_overwrite_image>NO</automatically_overwrite_image>
<max_image_size>-1</max_image_size>
<force_dismount>YES</force_dismount>
<automatically_validate_image>YES</automatically_validate_image>
<change_initial_condition>YES</change_initial_condition>
<ignored_file_pattern>\hiberfil.sys</ignored_file_pattern>
<ignored_file_pattern>*.tmp</ignored_file_pattern>
<ignored_file_pattern>*.omg</ignored_file_pattern>
<ignored_file_pattern>*.~</ignored_file_pattern>
<ignored_file_pattern>\System Volume Information\</ignored_file_pattern>
<ignored_file>\pagefile.sys</ignored_file>
</command>
</DiskImageJob>
```

## Deleting a hard disk and creation of a partition

Example 3:

This example will supply a short illustration of the O&O DiskImage disk manager's functionality. Hard disk "0" will first be deleted and then initialized as a Basic - MBR disk. After that, a 2 GByte partition will be created after position 32256 on the hard disk, aligned according to standard Windows disk alignment.

```
<DiskImageJob version="6.0">
<command name="initialized storage devices">
<disk_devices>YES</disk_devices>
</command>
<command name="clear drive">
<drivenumber>0</drivenumber>
<is_superfloppy>NO</is_superfloppy>
</command>
<command name="initialize disk">
<drivenumber>0</drivenumber>
<basic_disk>YES</basic_disk>
</command>
<command name="create partition">
<drivenumber>0</drivenumber>
<begin>32256</begin>
<size>2147483648</size>
<huge>YES</huge>
<default_windows_alignment>YES</default_windows_alignment>
</command>
</DiskImageJob>
```

## Create a file-based backup

Example 4:

A file-based backup of the file "Documents" will be created and saved on drive "Z". The backup's name will be based on the current date at the time of creation.

```
<BackupJob version="6.0">
<interaction>NO</interaction>
<stop_at_error>YES</stop_at_error>
```

## Examples of command files

```
<command name="create backup">
<backup_type>extended ZIP file backup</backup_type>
<compression_type>BZIP2 4K</compression_type>
<device_type>filesystem</device_type>
<backup_name>Z:\backups\Image_${TEMPL: (Year)}${TEMPL: (Month)}${TEMPL: (Day)}.obk</backup_name>
<comments>automatisches backup via Skript</comments>
<backupset_id>{527FC970-C7BF-40C4-83BA-946CA5E62EBD}</backupset_id>
<backupset_name>BackupSet 20111006 Skript</backupset_name>
<backupset_criteria>C:\Users\Muster\Documents\</backupset_criteria>
</command>
</BackupJob>
```