# **Active@ Partition Manager**

# Contents

Legal Statement	3
Partition Manager Overview	4
Initialize Disk (Physical Device)	5
Create New Partition	
Change Partition Attributes	8
Format Partition	9
Resize Partition	
Rollback Partition Changes	
Advanced Editing	
Edit Boot Sectors	
Edit Partition Table	
Hardware Diagnostic File	14
Application Log	

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### **Partition Manager Overview**

Partition Manager is advanced disk utility that allows you to perform disk partitioning tasks, such as creating partitions and volumes, formatting them, and assigning drive letters. Initialize raw disk, edit partition tables and more.

Most of these changes to disk partitioning are recorded in dedicated backup files thus at any time these changes could be rollback at certain point. See *Rollback Partition Changes* on page 11 for more information.

Create New Partition	Create Virtua	al Partition	Open in Hex Edit	or 🏹	Partition Table	Rollback Pa	rtition Changes	KII	l Disk			
View 🗸												
Name	Type	Status	File System	Segment	Offset in Sectors	First Sector	Total Sectors	Total Size	·	\\.\PhysicalDrive0 - Prope	rties	x
▲	Fixed Disk	Ready, Initialized	,			0	1953525168	932 GB		Name	Value	•
TREMMENS (F:)	Primary		FAT32	0	) 2048	2048	221206528	105 GB	-	Unsaved	No	
Local Disk (M:)	Primary		Unknown	0	) 221208576	221208576	333938688	159 GB				
🥟 Local Disk (O:)	Primary		Unknown	0	555147264	555147264	218122240	104 GB		Name	\\.\PhysicalDrive0	=
Onallocated Space			Unallocated	0	773269504	773269504	1180255631	563 GB		Device Key	ST1000DM003-9YN162	
🔺 🍘 Logical Disk Manager (	0 Virtual LDM					0	488921491	233 GB		Platform Name	\\.\PhysicalDrive0	_
TREMOW (E:)	Primary		FAT32	0	) 0	0	374018048	178 GB		Product Name	ST1000DM003-9YN162	
🥪 New Volume (L:)	Primary		NTFS	0	374018048	374018048	1949696	952 MB		Product Revision	CC4D	
🥟 PORTO (Q:)	Primary		FAT32	0	375967744	375967744	112953747	53.9 GB		Serial Number	S1D0RZ9W	
▲	Fixed Disk	Ready, Initialized				0	1953525168	932 GB		Status	Ready, Initialized	
a 🥪 LDM data partition	Data LDM		LDM data	0	) 63	63	1953523057	932 GB		lype	Fixed Disk	
FREMOW (E:)	Dynamic		FAT32	63	3 1985	2048	374018048	178 GB		Device Size		-
Rew Volume (L:)	Dynamic		NTFS	63	374020033	374020096	1949696	952 MB	· · · · · · · · · · · · · · · · · · ·		E F	
Physical Data Storage Devices												x
ST 1000DM003-9YN		- In: 1 /		-1	p: 1 (a)	-11						
GPT (Basic) 105 C	3B Primary FAT32	159 GB Prin	ary Unknown	104 G	B Primary Unknown	563 GB 1	Inallocated					-
932 GB												
		1										
ST31000524AS	10W (F:)	New Volume (1	)	POF	RTO (0:)							
MBR (Dynamic) 178 (	GB Dynamic FAT3	2 952 MB Dynamic	N 9.77 GB Un	allocat 53.	9 GB Dynamic F 689	GB Unalloca	ted				1.00 MR Brimapy I DM may	
932 GB											1.00 MB Primary LDM me	
100												
Fixed Disk												=
MBR (Basic) Majo	r (D:)											
932 GB	38 Primary NTES										1./1 MB Unallocated	
<i>a</i>		1										
Fixed Disk												
MBP (Basic) Syste	em Reserved (1:	] Local Disk (C:)										
55.9 GB	MB Primary NTFS	55.8 GB Primary	NTFS								1.90 MB Unallocated	
Fixed Disk						_						
ST3500630AS MPD (Pagic)	alotof	files (I on_ex)	M2_	106	28. Uppllocated	lont (V	/:) backu	p (J:)				-
	<u> </u>	0.0. 1 200 MD		0.040	So Glianocated	110000		•••••				_

The main features of Partition Manager are:

- Initialize Disk (Physical Device) on page 5
- Create New Partition on page 6
- Change Partition Attributes on page 8
- *Format Partition* on page 9
- *Edit Boot Sectors* on page 12
- *Edit Partition Table* on page 12

Active@ Partition Manager is a separate module of Active @ UNDELETE - advanced data recovery toolbox. For more features, like:

- Recovery deleted files or files from deleted or damaged partitions.
- Restore deleted or damaged partitions.
- Work with Disk Images.
- Recover data from damaged RAID's.
- Low level disk editing and more please visit *Active@ UNDELETE* web site.

# **Initialize Disk (Physical Device)**

To make disk accessible for application it needs to be initialized first by one of the following partition style:

- Master Boot Record (MBR);
- GUID Partition Table

To initialize physical disk proceed as follows:

- 1. In Partition Manager select a Disk (Physical Device) node
- 2. To open the Initialize Disk dialog, do one of the following:
  - From the **Partition Manager** toolbar click **Initialize** button or use command **Actions** > **Initialize**... from main menu;
  - Right-click the selected item and click **Initialize...** command from the context menu.
- 3. Confirm disk selection and other options

Disk must be initialized to let Active@ UNDELETE use it.										
Name	Product Name	Sectors	Total Size							
\\.\PhysicalDrive0	ST1000DM003-9YN162	1953525168	932 GB							
Select partition style for this disk: O MBR (Master Boot Record) O GPT (GUID Partition Table)										
☑ Create typical Bootstrap code □ Clear Primary Partition table										
<b>WARNING:</b> The GPT partition style is not recognized by all previous versions of Windows. It is recommended fordisks larger then 2TB, or disks used onItanium-based computers.										
				ОК	<u>C</u> ancel					

### Figure 1: Initialize Disk dialog

#### Dialog options Partition style

Select either *MBR* (Master Boot Record) or *GPT* (GUID Partition Table) partition style.



**Note:** GPT partition style is not supported by older versions of Windows. It is recommended for disks larger then 2TB. For all other purposes we recommend to use MBR partition style

### Create typical bootstrap code

Default generic bootstrap code will be written if this option is on.

### **Clear Primary partition table**

Primary partition table records will be cleared.



**Warning:** It is highly recommended to not clear primary partition table in case of restoring deleted or damaged disk partitioning.

4. Click **OK** to complete disk initialization.

### **Create New Partition**

To create new partition (Logical Drive):

- 1. In Partition Manager select a Disk (*Physical Device*) or *Unallocated space* node.
- 2. To open the Create New Partition dialog:
  - From the toolbar click **Create New Partition** button or use command **Actions** > **Create New Partition...** from main menu.
  - Right-click the selected item and click Create New Partition command from the context menu.
- 3. Adjust dialog options and click Create button to create new partition.

932 GB Unallocated	
048 531475806	
orition Geometry     O Extended Partition	Partition Attributes Mark partition as Active Assign Drive Letter
laximum Partition size: 932 GB	Fromat New Partition
Sector offset: 2048 Size, MB: 259508	File System: FAT32  Allocation unit size: Default
Measure in	Sectors 📝 Perform a quick format
w Logical Drive will be created in Primary Partition, starting	g from 2048 sector with size 253 GB [531473758 sectors].

### Figure 2: Create Partition dialog

### Partition Geometry Primary or Extended

Partition can be created as Primary partition (of number of available Primary partitions are not exceeded) or as Extended partition.

### Sector Offset

First sector of created partition. It can be set exact by numerical value entered in text box or by moving left slider in **Device View** control;

### **Partition Size**

Partition size can be set in megabytes or in sectors, depending on state of **Measure in Sectors** check box;

### Partition Geometry Mark Partition as Active

Newly created partition will be set as *Active Partition*;

#### **Assign Drive letter**

For Primary Partition or Logical Drive on extended partition drive letter can be assigned from the list of available in the system drive letters;

### Format Partition [optional]

### Volume label

Text label of partition (disk). This field can be blank

### **File System**

Select file one of the supported file systems: FAT, FAT 32 or NTFS.

### **Unit Allocation Size**

Depending on selected file system and total partition (disk) size available allocated unit size may be different. Default value of unit size is recommended.

# **Change Partition Attributes**

To change Logical Drive (partition) attributes:

- **1.** In **Partition Manager**, select a *Logical Drive* (*Partition*) node.
- 2. To open the **Partition Attributes** dialog, do one of the following:

Chenge drive letter and volume label for selected drive.								
Assign the following drive letter:								
Volume Label DATA								
OK Cancel								

#### Figure 3: Create Partition dialog

- From the Partition Manager toolbar click Change Attributes button or use command Actions > Change Attributes from main menu;
- Right-click the selected item and click Change Attributes from the context menu.

### **Format Partition**

To format *Logical Drive* (*Partition*):

- 1. In Partition Manager select a Logical Drive (Partition) node.
- 2. To open the Format Partition dialog:
  - From the toolbar click Format button or use command Actions > Format... from main menu.
  - Right-click the selected item and click **Format...** command from the context menu.
- 3. Adjust dialog options and click Format button to format partition.

Format selected volume with selected File System and Allocation size unit. Volume label is optional.								
Volume label: Iont								
File System: FAT32  Allocation unit size: Default								
Perform a quick format								
Format Cancel								

### **Figure 4: Format Partition dialog**

#### Dialog Options Volume label

Text label of partition (disk). This field can be blank

### **File System**

Select file one of the supported file systems: FAT, FAT 32 or NTFS.

### **Unit Allocation Size**

Depending on selected file system and total partition (disk) size available allocated unit size may be different. **Default** value of unit size is recommended.

### **Resize Partition**

To resize *Logical Drive* (*Partition*):

- 1. In Partition Manager select a *Logical Drive* (volume) node.
- 2. To open the Resize Volume dialog:
  - From the toolbar click **Resize** button or use command **Actions** > **Resize...** from main menu.
  - Right-click the selected item and click **Resize...** command from the context menu.
- **3.** Adjust dialog options and click **Resize** button to format partition.

To resize vo size enter r	olume select re iew volume siz	size option below e in <b>Size</b> field.	v or drag	p-n-release right s	ide volume	e slider to choose desired	l volume size. F	or exact volume
15.6 GB Logica	INTES			<b>*</b> ->				
Used space	e 🗾 /	Actual space		Extended space		Unallocated space		
<ul> <li>Up-size (ext</li> <li>Down-size (signal</li> <li>Custom Part</li> <li>Size, MB: 14</li> </ul>	end) partition hrink) partition ition Resize 183	from 11328 MB to n from 11328 MB	o maxim to minin	um size [35583 Mt	)] using av [3077 MB	vailable 24255 MB of unal ] using 8251 MB of free s	located space pace on that pa	artition
Partition (volume)	will be extend	ed to 14183 MB						
						Resize	Cancel	Help

### Figure 5: Resize Partition dialog

#### **Dialog Options Resize options**

Use radio buttons to expand to use maximum space available or shrink to last used cluster. Use **custom** option to define exact new size of partition.



**Note:** Use device control drug'n'release feature to set approximate partition size.

4. Click **Resize** to resize selected partition (volume).

### **Rollback Partition Changes**

Some critical partition layout changes made to a physical device are backed up by default. Users can roll back these changes at any point by using the **Roll back Partition Changes** tool. These changes are:

- Initialize Disk
- Create Partition
- Format Partition
- Delete Partition

To open the Rollback Partition Changes dialog, do one of the following:

- From the Tools menu, choose the **Roll Back Partition Changes** command.
- For a selected physical device (disk) node use the context menu **Roll Back Partition Changes** command.

	<ul> <li>Action</li> </ul>	type	Date/Time	Status
E VI	🖉 👰 Pa	artition Created	18/05/12 15:38:49	Valid
	🛛 👰 Pa	artition Deleted	18/05/12 15:40:36	Valid
T1000DM00	🛛 👰 Pa	artition Deleted	18/05/12 15:42:00	Valid
ST 1000DM00	🛛 👰 Pa	artition Deleted	18/05/12 15:43:12	Valid
	🛛 👰 Pa	artition Deleted	18/05/12 15:43:22	Valid
2 M	🛛 👰 Pa	artition Deleted	18/05/12 15:43:28	Valid
	🛛 🖓 Pa	artition Created	18/05/12 15:51:16	Valid
T21000524AC	😑 🛛 🎑 Pa	artition Created	18/05/12 20:45:20	Valid
131000J24A3	💽 👰 Pa	artition Deleted	21/05/12 10:18:29	Valid
	Pa	artition Deleted	21/05/12 10:18:37	Valid
10 Y	Pa	artition Deleted	21/05/12 10:18:45	Valid
	Pa	artition Deleted	21/05/12 10:18:56	Valid
T31000524AS	Pa	artition Deleted	21/05/12 10:19:02	Valid
	Partiti Date: Partti File S	ion Deleted : <b>Monday, 21 M</b> ion deleted at sec System Code: <b>6</b> ;	lay, 2012 10:18:29 ttor: 745244675; 1	9; iotal Sectors: <b>218402816</b> ;
OCZ-VERTEX3		—		
	* Source	Backup File: d:\r	projects_Developme	nt\Active Undelete 8\!Binaries\backups\disk_ST1000DM003-9YN1
	to douico CT	1000DM003-9	YN162 will be rever	ted to modification 'Partition Deleted', made at 21/05/12

To roll back changes made to a physical device, select a restore point in the chronologically ordered list and click the **Roll Back** button to complete the changes.

## **Advanced Editing**

### **Edit Boot Sectors**

*Primary Boot Sector* and *Copy Boot Sector* (if applicable) can be edited and synchronized by individual fields. Active@ UNDELETE provide "suggested" boot sector with most appropriate values for reference.

To Edit (Synchronize) boot sectors:

- **1.** In **Partition Manager** or **Recovery Explorer** select a *Logical Drive* (*Partition*) node.
- 2. To open the Edit Boot Sectors dialog, do one of the following:
  - From the toolbar click Edit Boot Records button or use command Actions > Edit Boot Records... from main menu;
  - Right-click the selected item and click **Edit Boot Records...** command from the context menu.
- 3. Use radio buttons near the value fields to select and click **OK** button to confirm changes.

<b>Y</b>	Select valid fields from	n eit	her F	Primary Boot Sector, Primary Boot Primary Boot Sector [Offset, bytes: 0]	t Sector o	r from Suggested Boot Sector. Copy Boot Sector [Offset, bytes: 536707072]		Suggested Boot Sector	
00	JMP instruction	0		EB5B90	⊚ 🛆	000000	۲	EB5290	
03	File System ID	۲	$\checkmark$	4E54465320202020	A	000000000000000000000000000000000000000	j	4E54465320202020	
0B	Bytes per sector	0	$\checkmark$	0200		0000		0200	
0D	Sectors per cluster	۲	$\checkmark$	01		00		01	
0E	Always 00		$\checkmark$	0000 Invalid field indica	ator	0000		0000	
10	Always 00		$\checkmark$	000000	$\checkmark$	000000		000000	
13	Always 00		$\checkmark$	0000	$\checkmark$	0000	]	0000	
15	Media descriptor	0	$\checkmark$	F8	Δ	00	Ac	cepted Value	
16	Always 00	٢	Vali	id field	$\checkmark$	0000			
18	Sectors per track	L	v		Δ	0000		53F	
1A	Heads	$\bigcirc$		0020	0 🛆	0000	۲	00FF	
1C	Hidden Sectors	0	$\checkmark$	000003F	Δ	0000000		000003F	
20	Always 00		$\checkmark$	0000000	- 🗸	0000000		0000000	
24	Always 00 80 00 80	۲	$\checkmark$	80008000		0000000	]	80008000	
Resto	Show offset in hexadecimal mode       Show values in hexadecimal mode       Save on Disk         Restore Defaults       OK       Cancel       Help								

Figure 6: Synchronize Boot sectors dialog box

### **Edit Partition Table**

You can edit *Disk System Records* (MFT, Boot sector etc.) by using specially designed forms.

To edit *Partition Table*:

- **1.** In **Partition Manager** select a *Physical Device*.
- 2. To open the Edit Partition Table dialog:
  - Use command Actions > Partition Table... from main menu;

- Right-click the selected item and click **Partition Table** command from the context menu.
- 3. Change desired fields to appropriate values

View and edit master boot record											
00 Master bootstrap [first 32]: EB06000000000033C0FA8ED0BC007CFB8ED88BF48EC0BF267E0657BF007EB9											
1B8 Disk Index: BF0418E6											
1BC Reserved: 0000											
1FE Signature (55AA): 55AA											
Partition Table Entry #1		Parti	tion Table Entry #2								
1BE Active Partition (80):	00	1CE	Active Partition (80):	00							
1BF Start Head:	180	1CF	Start Head:	254							
1C0 Start Sector:	1	1D0	Start Sector:	63							
1C0 Start Cylinder:	877	1D0	Start Cylinder:	1023							
1C2 File System [hex]:	07	1D2	File System [hex]:	OF							
1C3 End Head:	254	1D3	End Head:	254							
1C4 End Sector:	63	1D4	End Sector:	63							
1C4 End Cylinder:	1023	1D4	End Cylinder:	1023							
1C6 First Sector:	14100345	1D6	First Sector:	141002505							
1CA Partition size in sectors:	126902160	1DA P	artition size in sectors:	23117535							
Partition Table Entry #3		Parti	tion Table Entry #4								
1DE Active Partition (80):	80	1EE	Active Partition (80):	•							
				Show offset in hexadecimal mode							
Reset				OK Cancel							

### Figure 7: Edit Partition Table dialog

- To discard all changes and restore all values to fields in the dialog, click **Reset**.
- To save all changes made in the dialog, click **Save**.



### Warning:

Saving incorrect values might render the partition useless. You may not undo changes that you make in this dialog.

## **Hardware Diagnostic File**

If you want to contact our technical support staff for help with file recovery, a file that contains a summary of your local devices is helpful. Active@ UNDELETE allows you to create a summary listing file in XML format. This data format is "human-readable" and can help our technical support staff analyze your computer configuration or point out disk failures.

To create a hardware diagnostic file from the File menu, click Save Hardware Info As...



**Note:** To save time when contacting our technical support staff, we highly recommend that you provide us with a hardware diagnostic file

# **Application Log**

This log view monitors each action taken by the application and displays messages, notifications and other service information. Use the messages in this screen to observe and further understand the flow of the recovery process.

We recommend that you attach a copy of the log file to all requests made to our technical support group. The entries in this file will help us resolve certain issues.

To prepare a log file, turn on **Display Trace Events** and **Write Log on Disk** options in the **Preferences** dialog box.

It is best to save the log file to a physical disk that is different from the disk that holds the deleted data. By doing this, you reduce the risk of writing over the data that you are trying to recover.