User's Manual



R-Drive Image



(c) R-Tools Technology Inc 2025. All rights reserved. www.r-tt.com © R-Tools Technology Inc. 2025 All rights reserved.

No part of this User's Manual may be copied, altered, or transferred to, any other media without written, explicit consent from R-Tools Technology Inc..

R-Tools Technology Inc. has developed this User's Manual to the best of its knowledge, but does not guarantee that the program will fulfill all the desires of the user.

No warranty is made in regard to specifications or features.

R-Tools Technology Inc. retains the right to make alterations to the content of this Manual without the obligation to inform third parties.

R-Drive Image is a registered trademark of R-Tools Technology, Inc. Windows 9x/ME/NT4.0/Windows 2000, XP, Vista, 7,8/8.1, 10, Windows Server 2003, 2008, 2012, 2016 are registered trademarks of Microsoft Corporation. Mac OS X, OS X, and macOS are registered trademarks of Apple Inc. All other trademarks are the property of their respective owners.

Table of Contents

	R-Drive Image 1
1	R-Drive Image Features
2	System Requirements
3	Contact Information and Technical Support
4	R-Drive Image Registration
5	License Transfer
II	Disk Actions 11
1	Create an Image 13
2	Create an Image from Files
3	Copy Files to a Folder
4	Restore Data from an Image
5	Copy a Disk to a Disk
6	Partition Manager
7	Mount an Image as a Virtual Logical Disk 58
8	Unmount Virtual Logical Disks 60
9	Check an Image File
	Advanced File Filtering 64
1	Filters
2	Batch Mode
_	
_	RAIDs, and Various Disk and Volume
_	RAIDs, and Various Disk and Volume
IV	RAIDs, and Various Disk and Volume Managers Hardware RAIDs
IV 1	RAIDs, and Various Disk and VolumeManagersHardware RAIDs71BitLocker Drive Encryption72
1 1 2 3	RAIDs, and Various Disk and VolumeManagersHardware RAIDsFitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75
1 2 3 4	RAIDs, and Various Disk and VolumeManagersHardware RAIDs71BitLocker Drive Encryption72
1 2 3 4 5	RAIDs, and Various Disk and Volume Managers69Hardware RAIDs71BitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75Windows Storage Spaces80
1 2 3 4 5	RAIDs, and Various Disk and Volume Managers69Hardware RAIDs71BitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75Windows Storage Spaces80Apple RAIDs82
1 2 3 4 5	RAIDs, and Various Disk and Volume Managers69Hardware RAIDs71BitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75Windows Storage Spaces80Apple RAIDs82Apple CoreStorage/File Vault/Fusion Drive Volumes83
IV 1 2 3 4 5 6 7	RAIDs, and Various Disk and Volume 69 Managers 71 Hardware RAIDs 71 BitLocker Drive Encryption 72 Windows Software RAIDs, Mirrors, and Spanned Volumes 75 Windows Storage Spaces 80 Apple RAIDs 82 Apple CoreStorage/File Vault/Fusion Drive Volumes 83 Linux mdadm RAIDs 88 Linux Logical Volume Manager Volumes 89
IV 1 2 3 4 5 6 7 8	RAIDs, and Various Disk and Volume Managers69Hardware RAIDs71BitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75Windows Storage Spaces80Apple RAIDs82Apple CoreStorage/File Vault/Fusion Drive Volumes83Linux mdadm RAIDs88Linux Logical Volume Manager Volumes89
IV 1 2 3 4 5 6 7 8 V	RAIDs, and Various Disk and Volume Managers69Hardware RAIDs71BitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75Windows Storage Spaces80Apple RAIDs82Apple CoreStorage/File Vault/Fusion Drive Volumes83Linux mdadm RAIDs88Linux Logical Volume Manager Volumes89Startup Version91
IV 1 2 3 4 5 6 7 8 V 1 2	RAIDs, and Various Disk and Volume Managers69Hardware RAIDs71BitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75Windows Storage Spaces80Apple RAIDs82Apple CoreStorage/File Vault/Fusion Drive Volumes83Linux mdadm RAIDs83Linux Logical Volume Manager Volumes89Startup Version91Create Startup Disks92
IV 1 2 3 4 5 6 7 8 V 1 2 3	RAIDs, and Various Disk and Volume Managers69Hardware RAIDs71BitLocker Drive Encryption72Windows Software RAIDs, Mirrors, and Spanned Volumes75Windows Storage Spaces80Apple RAIDs82Apple CoreStorage/File Vault/Fusion Drive Volumes83Linux mdadm RAIDs88Linux Logical Volume Manager Volumes89Startup Version91Create Startup Disks92Load Computer into Startup Mode97

П

5	Disk to Disk Copy	110
6	Create an Image from Files	114
7	′ Partition Manager	114
8	Check an Image File	114
9	Network Drives	115
V	Schoduled Actions, Command Line	
VI	Scheduled Actions, Command Line	116
	Operations, and Scripting	
1	Scheduler and Unattended Actions	118
	Create a Task	118
	Edit a Task	
	Delete a Task Run a Task Manually	
2	Rotation Schemes (Backup Sets)	
	Simple Rotation Schemes	
	Custom Rotation Schemes	
	An example of a rotation scheme	
3	Scripting and Command Line Operations	133
	Create a Script from R-Drive Image	
	Create a Script Manually	135
VII	Technical Information	152
1	Updates	153
2	Cloud Services	154
3	FTP/FTPS Servers	162
4	Network Drives	164
	Image Replications	
	Cogging	
	Creating Consistent Point-in-Time Backups	
	Support for Various Disk Partitioning Schemes and File Systems	
	Supported Virtual Disk and Disk Image Formats	
	Disk Wiping Algorithms	
11	Supported CD and DVD Recorders	177
12	List of Hardware Devices Supported in the Startup Mode	177
VIII	R-Drive Image OEM kit	183
1	Create a Master Image	185
	Create Startup Media	
	Index	190

I R-Drive Image

R-Drive Image is unique and powerful drive image software. It creates <u>drive image</u> files on-the-fly, that is, without stopping Windows. Such images may be stored anywhere including various removable media. It compresses image data with variable <u>compression</u> level to save <u>free space</u>. It also restores such images on the disks on-the-fly, except system partitions. **R-Drive Image** creates special startup disk (a startup CD/DVD disc, or USB removable storage device) to restore system partitions. It mounts images as virtual disks to copy only certain files from the images. It also directly copies an entire disk to another - no time spent for file structure scanning.

System integrators and computer assemblers can use <u>**R-Drive Image OEM kit</u>** to create system recovery disks to include them with their fully assembled computer systems.</u>

Note: The current version has a limited support for dynamic disks or other non-MBR/GPT partitioning scheme. See **Support for Various Disk Partition Schemes and File Systems** for details.

The **<u>R-Drive Image Features</u>** topic tells more about **R-Drive Image**.

The System Requirements topic tells more about R-Drive Image system requirements.

The **<u>R-Drive Image Registration</u>** topic explains how to register your copy of **R-Drive Image**.

The License Transfer topic explains how to transfer the Standalone and Corporate licenses.

The **Disk Actions** chapter explains disk actions such as:

- Create an Image of a partition, logical disk, or entire hard drive
- <u>Create an Image from Files</u>
- Copy Files to a Folder
- <u>Restore Data from an Image</u>
- Copy Disk to Disk to make an exact copy of one disk on another
- Manage partition and logical disks
- Mount an Image as a Virtual Logical Disk (read-only)
- <u>Unmount Virtual Logical Disks</u>
- Check an Image File to check an existing image file

The **RAIDs**, and Various Disk and Volume Managers chapter explains how to perform disk actions with various compound volumes such as:

- Hardware RAIDs
- <u>BitLocker Drive Encryption</u>
- Windows Software RAIDs, Spanned, and Other Volumes
- <u>Windows Storage Spaces</u>
- Apple RAIDs
- <u>Apple CoreStorage/File Vault/Fusion Drive Volumes</u>
- Linux mdadm RAIDs
- Linux Logical Volume Manager Volumes

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup Version** such as:

- <u>Create Startup Disk</u>
- <u>Restoring Data to a System or Other Locked Disk</u>
- <u>Create an Image Using the Startup Disks</u>
- Disk to Disk Copy Using the Startup Disks

The <u>Scheduled Actions</u>, <u>Command Line Operations</u>, <u>and Scripting</u> chapter explains how to start disk actions automatically at scheduled times/events and create scripts that can be performed from a command line.

- <u>Scheduler and Unattended Actions</u>
- <u>Scripting and Command Line Operations</u>
- <u>Rotation schemes</u> (backup sets)

The **<u>Technical Information</u>** chapter gives technical information on

- Updates
- <u>Cloud Services</u>
- FTP/FTPS/SFTP Servers
- Network-Drives
- Image Replications
- Logging
- <u>Creating consistent point-in-time backups</u>
- <u>Support for Various Disk Partition Schemes and File Systems</u>
- <u>Supported Virtual Disk and Disk Image Formats:</u>
- Disk Wiping Algorithms
- Supported CD and DVD Recorders
- List of Hardware Devices Supported in the Startup Mode

The **<u>R-Drive Image OEM kit</u>** chapter explains how computer system integrators can create system recovery disks for their systems

- Create a Master Image
- <u>Create Startup Media</u>

Follow this link to obtain **<u>R-Drive Image Contact Information and Technical Support</u>**

R-Drive Image is a registered trademark of R-Tools Technology, Inc.

Window s 9x/ME/NT4.0/Window s 2000, XP, Vista, 7,8/8.1, 10, Window s Server 2003, 2008, 2012, 2016 are registered trademarks of Microsoft Corporation.

Mac OS X, OS X, and macOS are registered trademarks of Apple Inc.

1.1 R-Drive Image Features

R-Drive Image is unique and powerful drive image software. It creates <u>disk images</u>: files that contain exact, byte-by-byte, copies of hard drives, partitions, or logical disks. Such images may be stored in any location: other hard disks or various removable media, such as CD-R(W) and DVD discs, USB external disks, and network drives. At any time, data from such images may be restored on their original disks or on any other partitions or

even on drive's free space. Images may contain data from the partitions, logical disks, and entire hard drives, or only individual files.

Note: The current version has a limited support for non-Windows file systems, dynamic disks, or other non-MBR/GPT partitioning schemes. See <u>Support for Various Disk Partition Schemes and File Systems</u> for details.

Using **R-Drive Image**, you can completely restore your system immediately after heavy data loss caused by an operating system crash, virus attack, or hardware failure. You can also use **R-Drive Image** for mass system deployment: if you need to setup many identical computers, you can setup manually only one system, than, using **R-Drive Image**, you can make an image of the system, and deploy it on all other computers, saving your time and cost.

You can copy a hard drive, partition, or logical disk directly to another one. Such copying is much faster than traditional file by file copying, as no time spent for file structure scanning.

If you need to restore only certain files from an image, you can mount that image as a read-only virtual disk and copy those files directly from the image using Windows Explorer or any other file utility.

R-Drive Image includes a partition manager that can delete, <u>wipe</u>, create, and re-sized partitions and logical disks.

If you are a system integrator, consultant, or computer assembler, you can use <u>**R-Drive Image OEM kit</u>** to create system recovery disks to include them with your fully assembled computer systems.</u>

R-Drive Image features:

- A simple wizard interface no in-depth computer management skills are required.
- Commands in the shortcut menu to perform some disk actions, like restoring data from an image file and mounting an image as a virtual disk directly from Windows explorer.
- Image files are created on-the-fly, no need to stop and restart Windows. All other disk writes are stored in a cache until the image is created.
- Images can be created for storage devices with removable media.
- Images can contain data from the entire disk or useful information only, that is, only those disk parts that contain data from existing files.
- Images can be <u>created from individual files</u>, not only partitions and logical disks. Individual files may be <u>copied to a certain folder</u>.
- Individual files can be copied to a specified folder.
- Images can be burned on CD/DVD recorders directly from the program
- Image data can be compressed to save free space.
- Image files can be stored on removable media. Support for USB 2.0 and 3.0 devices in the startup mode.
- Images can be stored on various <u>cloud services</u> and <u>FTP/FTPS/SFTP servers</u>, and download from them to restore data on the disks.
- Images can be split into several files to fit the type of the storage medium.
- Image can be created incrementally and differentially.
- Image files can be password-protected and contain comments. Images of the rdi type may also be encrypted using the AES-XTS algorithm.
- Images <u>can be replicated</u>, that is, their copies can be saved in one or several different places.
- <u>Partition manager</u> that allows you to delete, wipe, create, and resize partitions and logical disks. It can be used to clean entire hard drives before disposal.

- Support for several image format types: .rdr (**R-Drive Image**'s proprietary internal format), and virtual machine formats: <u>VHD/VHDX</u>, <u>VDI</u>, and <u>VMDK</u> (last two only in **Corporate**, **Technician**, and **Commercial** licenses). In addition, you may open several additional formats: .dmg (<u>Apple Disk Image</u>), <u>e01(ewf</u>), and aff (<u>advanced forensic format</u>), the latest two for the **Commercial** license.
- Support for various non-MBR/GPT partitioning schemes and file systems. See <u>Support for Various Disk</u> <u>Partition Schemes and File Systems</u> for details.
- Support for <u>RAIDs</u>, and various disk and volume managers, such as <u>Windows Storage Spaces</u>, <u>Apple RAIDs</u>, <u>Apple CoreStorage/File Vault/Fusion Drives</u>, and <u>Linux LVM</u>.
- Data from an image are restored on-the-fly, except on a system partition. Data to the system partition can be restored either by restarting **R-Drive Image** in its startup mode directly from Windows, or by using specially created <u>startup disks</u>.
- Special startup disks (a startup CD/DVD disc or USB removable storage device) can be created to restore data to a system partition. Such disks can be used to perform basic disk imaging operations on Mac computers with <u>some restrictions</u>.
- Data from an image can be restored on a free (unpartitioned) space on any place on a hard drive. The size of the restored partition can be changed
- Data from an image can be restored on other existing partitions. **R-Drive Image** deletes such partitions and restores data on that free space.
- An entire disk can be directly copied to another one.
- An image can be mounted as a read-only virtual drive and its content can be viewed and copied.
- An image can be checked for its integrity.
- Support for **S.M.A.R.T.** warnings.
- A built-in scheduler automatically starts disk actions at scheduled times/events.
- Scripts can be created for frequent or unattended actions. Scripts are executed from a command line and can be included in any command file.
- <u>Advanced and versatile logs</u> accessible directly from the user interface.
- Support for <u>rotation schemes</u> (backup sets). A rotation scheme is a set of files (usually a file for a full image of an object and a number of its incremental/differential backups) which **R-Drive Image** treats as one unit. Rotation schemes (backup sets) are used to flexibly control the parameters of complex backup tasks such as a total size allocated for the image files, number of image files to keep, and time for which the data will be kept. Available are simple and custom rotation schemes. Custom rotation schemes are available in the **Corporate**, **Technician**, and **Commercial** licenses.
- **R-Drive Image OEM System Recovery Media** creation: special startup disk that may be used to restore a computer system after a complete failure when it requires a complete fresh setup (system recovery disks).

Note: You need to purchase an OEM registration key to activate this feature.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

© 2025 R-Tools Technology Inc.

1.2 System Requirements

- An Intel-compatible platform.
- The administrative privileges are required to install and run R-Drive Image.

Operating systems on which various licenses can run:

- All licenses: Windows 11/10/8.1/8/7/Vista/XP/2000 Windows (including 64 bits editions).
- Corporate, Technician, Commercial licenses: Server 2022/2019/2016/2012/2008/2003 (including 64 bits editions).

1.3 Contact Information and Technical Support

To obtain the latest version of R-Drive Image, go to:

Product Site: http://www.drive-image.com/

Sales Department: <u>sales@r-tt.com</u>

The **R-Drive Image** Technical Support Team is available 24 hours a day, seven days a week, and has an average e-mail response time less than 4 hours.

Tech. Support: support@r-tt.com

You may send a support request form from <u>http://www.r-tt.com/Support_request.html</u>. You may be asked to provide a system dump.

To create a system dump:

1 Go to the About dialog box

R-Drive Image Action selection panel



2 And click the Write system dump button Write system dump button

About R-Drive Image		
R Drive R-Drive I Image		eator 7.1 (Build 71 -Tools Technology
Home site: <u>http://www.drive-image</u> Technical support: <u>http://www.r-tt.c</u> Customer service: <u>http://www.r-tt.c</u>	com/SupportRequest.sl	Check for updat
This product is licensed to:		
Licensee: Tester 1 R-TT Testing Team Product: R-Drive Image License Type: OEM Kit Number of licenses: 1		
Licensee: Tester 1 R-TT Testing Team Product: R-Drive Image License Type: OEM Kit	Disclaimer	View license

1.4 R-Drive Image Registration

The trial period of **R-Drive Image** will start after its fresh install. The **Action Selection** panel will show its remaining time.



You need to obtain a registration key to activate the **R-Drive Image** trial version. You may obtain this key online at the **R-TT web site** or on the **R-Drive Image Please register R-Drive Image** message.

The registration keys are sent to customer e-mail boxes immediately after purchase.

With the purchase of a new **R-TT** software product, you receive one year of support services that includes technical support, customer support and all upgrades and new releases for your product during that term. When your 1-year support service expires, you will need to renew that support at a discounted price to continue receiving support services. The renewal support purchase will extend your support by 1-year from the date of its expiration.

More details are on the Buy On Line page (http://www.r-tt.com/BuyOnLine.shtml) at the R-TT web

<u>site</u>.

To obtain a registration key directly from R-Drive Image,

1 Click the **About** button



and select **Register** on the shortcut menu.



2 Click the Buy license online button on the Please register R-Drive Image message

	R-Drive Image Corporate		×
Name:	Tester 1	0	Ň
Company:	R-TT Testing Team		
Serial numb	er:	\checkmark	
<paste re<="" td=""><td>gistration Key here></td><td></td><td></td></paste>	gistration Key here>		
	Buy license online		
	 Buy license online 		

and follow the instructions.

To register with a registration key,

- 1 Click the About button and select Register on the shortcut menu.
- 2 Enter the registration key on the Please register R-Drive Image message and click the OK button. The registration information will appear.

	see: Tes		
R-TT	Testing	Team	
test@			
	uct: R-D		ao
	ise Type		
Num	per of lic	enses:	1

Sometimes you may need an active Internet connection to finish program activation after its registration.

If you don't have an Internet connection.

You need to manually obtain an activation code to complete the registration and activation. The Online Activation dialog window will appear when you enter the activation code.

R-Drive In Online Activation	
al state to plan	Your license must be activated.
	An error occurred during automatic online activation:
ι - Γ΄	Host not found
	Please check your internet connection and try again.
	You can also get an activation code manually using the following URL or the QR code on the I
o ny sana	https://secure.r-tt.com/cgi- bin/UserConsole?mks=38b7cb6ea71677ad8b8e3b392b89ef4a71ed9eda&hw_id=SIKV-OWSI
	Hardware code SIKV-OWSI
Activation code	
Field to enter the activa	on code
	Apply activation code

You may copy the url with the activation information and go to it on another computer connected to the Internet, obtain the activation code, and enter it into the respective field on the dialog box.

You may also use your smartphone to activate **R-Drive Image**. Scan the QR-code and go to the specified URL, obtain the activation code, and finish program activation.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

1.5 License Transfer

All **R-Drive Image** licenses are transferable. However, **R-Drive Image** Standalone and Corporate licenses can be transferred to another computer only one way. You can transfer the license to a new computer, but the license may not be transferred between different computers back and forth and be reused on the computer it was transferred from.

For example, you have **R-Drive Image** installed on Computer A. You may transfer the license from Computer A to Computer B, and **R-Drive Image** will work on Computer B. But it won't run on Computer A under this license anymore, even if you deactivate this license on Computer B and remove **R-Drive Image** from it. Then you may transfer the license to Computer C, but **R-Drive Image** will work neither on Computer A, nor on Computer B. And so on...

If you have just one **R-Drive Image** license, you can simply install the software on a new computer you want to transfer the license to and then activate it. The license on the previously licensed machine will be automatically deactivated as soon as the software is activated on a new computer. For computers connected to the Internet the online activation is processed in the background mode and you will not even notice it. For off-line activations you will need to use a QR code and it will take extra 1-2 minutes to complete the activation. So, a single **R-Drive Image** license does NOT require a license deactivation procedure.

When you have more than one **R-Drive Image** license linked to the same registration key, our system may not recognize what particular license you want to transfer to a new computer and in this situation, the license deactivation procedure is a must.

Option 1. R-Drive Image software is still installed on the computer from which it is being transferred and the computer is connected to the Internet.

1 Open the R-Drive Image main menu and choose the Deactivate license option.



2 The following message will appear:

Deactivation message

R R-Drive Image		×
Drive Image you will not I this compute	out to deactivate yo e Standalone licens be able to reactivat er th deactivation?	se and
	Yes	No

Click Yes to deactivate the license.

- 3 Uninstall/Remove R-Drive Image from the computer
- 4 Install R-Drive Image on a new computer and activate it.

Option 2. R-Drive Image software is still installed on the computer from which it is being transferred and the computer is NOT connected to the Internet.

1 Open the R-Drive Image main menu and go to the About option to get the hardware code of the computer on which the license is currently active.

The About dialog box

		3
D rive	R-Drive Image Sta	andalone 7.1 (Build 7112)
R Image	Copyright (c) 2001-202	3 R-Tools Technology Inc.
Home site: http://www.dr	rive-image.com/	
Technical support: http://	/www.r-tt.com/SupportRequest	shtml
Customer service: http://	/www.r-tt.com/PurchasingRegu	est.shtml
This product is licensed	to:	
R-TT Testing Team bck@r-tt.com Product: R-Drive Imag License Type: Standale Registration key: Djow Hardware code: FJNK-	one /A0Apb ·CIHI	
bck@r-tt.com Product: R-Drive Imag License Type: Standal Registration key: Djow	one /A0Apb ·CIHI	
bck@r-tt.com Product: R-Drive Imag License Type: Standali Registration key. Djow Hardware code: FJNK- Number of computers.	one (A0Apb CIHI 1	View license
bck@r-tt.com Product: R-Drive Imag License Type: Standali Registration key. Djow Hardware code: FJNK- Number of computers.	one (A0Apb CIHI 1	View license
bck@r-tt.com Product: R-Drive Imag License Type: Standal Registration key. Diow. Hardware code: FJNK. Number of computers.	one AQApp T T	View license

- 2 Write down or take a photo of the Hardware Code
- 3 Uninstall/Remove R-Drive Image from the computer
- 4 Install R-Drive Image on a new computer.

Since the license on the previous computer was deactivated offline, our server will not know which machine to deactivate the license on and you will be prompted to enter the hardware code of the previous computer. Enter the saved Hardware code in the Activation window

Activation dialog box



and click the OK button.

Option 3. R-Drive Image was installed and activated on a computer that has already been decommissioned/replaced and the Licensee doesn't have access to that computer.

1 In this case you can't deactivated the R-Drive Image license,

but you can check the hardware codes of your other computers on which **R-Drive Image** licenses are being used and are currently active.

2 Send the list of the codes of computers on which you still keep and want to retain R-Drive Image licenses

(main menu > About) to <u>our customer support team</u> and they will help you deactivate the license for computers that you do not have access to.

II Disk Actions

Note: Disable **Windows Ransomware protection** in **Windows Security** and/or other utilities that block direct access to disks, or **R-Drive Image** will not work properly.

This chapter explains how to perform disk actions. Each action starts from the Action Selection panel.



■Keyboard Navigation

You may use the keyboard to navigate through and select items and objects on the panels. If there are several objects that can be selected, a dashed frame will appear around the object that is in the current focus.

current locus.	
Source	Keyboard focus
MBR 7.87GB F: (NTFS-Test) 2.92GB NTFS	G: (FAT32-TEST) H: (FAT-TEST) Unalloc: 2.02GB FAT32 2GB FAT16 932MB
Space	Select/Deselect.
Keyboard arrows	Right / Left / Up / Down
Alt+S / Alt+D	Switch between the Source / Destination panels.
Tab/Shift-Tab	Forward / Backward

Changing the program language

You may select the language of **R-Drive Image** panels. To do so, click the HeIp button and select the required language on the Language menu.

To start a required action, select

- <u>Create an Image</u> of a partition, logical disk, or entire hard drive
- Create an Image from Files
- Copy Files to a Folder
- <u>Restore Data from an Image</u>

- Copy Disk to Disk to make an exact copy of one disk on another
- Manage partition and logical disks
- Mount an Image as a Virtual Logical Disk (read-only)
- <u>Unmount Virtual Logical Disks</u>
- Check an Image File to check an existing image file

The **RAIDs**, and Various Disk and Volume Managers chapter explains how to perform disk actions with various compound volumes such as:

- Hardware RAIDs
- BitLocker Drive Encryption
- Windows Software RAIDs, Spanned, and Other Volumes
- <u>Windows Storage Spaces</u>
- Apple RAIDs
- <u>Apple CoreStorage/File Vault/Fusion Drive Volumes</u>
- Linux mdadm RAIDs
- Linux Logical Volume Manager Volumes

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup Version** such as:

- <u>Create Startup Disk</u>
- <u>Restoring Data to a System or Other Locked Disk</u>
- <u>Support for Various Disk Partition Schemes and File Systems</u>
- Disk to Disk Copy Using the Startup Disks

The <u>Scheduled Actions</u>, <u>Command Line Operations</u>, <u>and Scripting</u> chapter explains how to start disk actions automatically at scheduled times/events and create scripts that can be performed from a command line.

- <u>Scheduler and Unattended Actions</u>
- Scripting and Command Line Operations
- Rotation schemes (backup sets)

The **Technical Information** chapter gives technical information on

- Updates
- <u>Cloud Services</u>
- <u>FTP/FTPS/SFTP Servers</u>
- Network-Drives
- Image Replications
- Logging
- Creating consistent point-in-time backups
- <u>Support for Various Disk Partition Schemes and File Systems</u>
- <u>Supported Virtual Disk and Disk Image Formats:</u>
- Disk Wiping Algorithms
- Supported CD and DVD Recorders
- List of Hardware Devices Supported in the Startup Mode

The **<u>R-Drive Image OEM kit</u>** chapter explains how computer system integrators can create system recovery disks for their systems

- Create a Master Image
- <u>Create Startup Media</u>

Follow this link to obtain **R-Drive Image Contact Information and Technical Support**

2.1 Create an Image

Note: You may read about <u>Support for Various Disk Partition Schemes and File Systems</u> to learn more about possible options for your specific case.

You may create <u>images</u> of entire objects or <u>backup only selected files</u> during this action. Images from files can also be created by selecting <u>Create an Image from Files</u> on the **Action Selection** panel.

Creating images of entire objects

To create an image:

1 Click Create image on the Action Selection panel

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

Then the **Select disk(s) to create image** panel will show the configuration.

■ More information...



■ S.M.A.R.T. warning for a hard drive

If a hard drive has S.M.A.R.T. warnings, a color mark will appear on its left-top corner. Dragging the cursor over the drive will show a tooltip explaining that warning.

Source						
U	GPT 931.5GB	(Reco 300MB	UE 100ME	Syste 128ME	C: (System) 291GB NTFS (Windo 524MB
	MBR	A E: (S	ystem Re	e: I: (S	ystem)	
SAM	ISUNG HM320	HJ 2AK10	001	297.	5GB NTFS	
Parti	l space 298 ition table MB ART status Ale	R				
	h Status: BAD Read Error Ra	te				

Warnings will also appear in confirming e-mails for scheduled actions.

- ! SAMSUNG HM320HJ 2AK10001(298GB #2): Health Status: BAD

```
[01] Read Error Rate
```

! =========[S.M.A.R.T.]===========

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a technology widely-used in hard drives and solid-state devices that monitors their reliability conditions to predict possible hardware failures.

2 Select the objects you want to backup on the Select disk(s) to create image panel and click the Next button

■Keyboard Navigation

You may use the keyboard to navigate through and select items and objects on the panels. If there are several objects that can be selected, a dashed frame will appear around the object that is in the current focus.

Source	Keyboard focus		
MBR 7.87GB F: (NTFS-Test 2.92GB NTFS	G: (FAT32-TEST) H: (FAT-TEST) Unalloc: 2:02GB FAT32 2GB FAT16 932MB		
Space	Select/Deselect.		
Keyboard arrows	Right / Left / Up / Down		
Alt+S / Alt+D	+S / Alt+D Switch between the Source / Destination panels.		
Tab/Shift-Tab	Forward / Backward		

■ More information...

Selected Objects					
Sour	rce Selected Object Dis	k Letter/Label/Capacity/File System	Selected Object		
	MBR 7.87GB 2.92GB NTFS	G: (FAT32-TEST) 2.02GB FAT32	H: (FAT-TEST) 2GB FAT16 933MB		
	931.5GB 300MI 100M	128M 291GB NTF: 524ME 1MB Partition	Wind Wind D: (Data) Una 450ME 450ME 638.5GB NTF 1.69 Logical Disks/Unallocated Space		
P	Total space 1.81TB Partition table: MBR SMART status OK	Hard Drive Properties			
You may select all object	cts on a hard drive	by clicking the hard	drive icon.	. It will show the	
marked hard drive.	MBR 7.87GB F: (NTFS-Test) 2.92GB NTFS	G: (FAT32-TEST) 2.02GB FAT32	H: (FAT-TEST) 2GB FAT16 932MB		

Use the **Refresh** button if your computer disk configuration has been changed (when you connect a USB disk, for example).

You may select the backup type for each partition. You may store in the image either the exact **Sector by backup copy** of the object, **Backup useful information only**, or **Backup selected files**...Right-click the object and select the required backup type on the shortcut menu.

Source							
	MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS	O Do not backup		: (FAT-TES GB FAT16		Unalloc: 932MB
	GPT 931.5GB	(Recc UUI 300ME 100M	 Backup actual data only Sector by sector backup 	Windc 450MB		D: (Data) 638.5GB NT	Una Ft 1.691
	MBR 1.81TB	Y: (Backup) 1.81TB exFAT	O Backup selected files				

3 Select the place on the **Choose destination of new image** panel to which the image files will be written, specify the file name, and click the Next button

R-Drive Image - Create Image	- 🗆 X
Select the destinat	tion for the new image ····
RAIDHP5x16 RDI-Images Sbad001SPartition1-1_Partition1-3-image4.rdr E-image.rdr F-files-image.rdr F-files-image.rdr G-files-image.rdr G-files-image.rdr G-files-image.rdr HardwareRAID0.rdr	Existing image details MBR 7.87GB F: (NTFS-Test 2.92GB NTFS 2GB FAT1
HDD1-image.rdr HDD1-image2.rdr HDD1-image2.rdr HDD1-image3.rdr Image_Bad.rdr Partition1-1_Partition1-3-image2.rdr Partition1-1_Partition1-3-image2.rdr	Dates of included archives 6/25/2021 5:54:21 AM 7/22021 5:42:16 AM 7/4/2021 10:59:26 AM
Partition1-1_Partition1-3-image4.rdr SoftRAID0.rdr SoftRAID1.rdr SoftRAID1.rdr SoftRAID1.rdr SoftRAID1.rdr SoftRAID1.rdr	Imaging mode Overwrite The data in the existing image will be replaced with new ones
File name: Y:\RDI-Images\Partition1-1_Partition1-3-images	ge.rdr Replications R-Drive Image format 💌
Back	Options 2 Disks Selected ➡ Next

You may select any place including connected network drives, <u>supported CD and DVD Recorders</u>, or any other devices with removable storage. Several <u>cloud services</u> are also supported. You may also <u>map</u> <u>network drives</u> directly from the program.

<u>Images can be replicated</u>, that is, their copies may be saved to one or other different locations.

You may also choose what image format will be created. (Only in the Corporate, Technician, and Commercial licenses).

⊒lmage	file	format	

RDR	Default. A proprietary image format. Data in the image can be compressed and password protected.
VHD and VHDX	A virtual disk format mainly used in the Windows built-in virtual machine.
VMDK	A common virtual disk format for virtual machines. Only the Corporate, Technician, and

	Commercial licenses support this format.		
VDI	A common <u>VDI</u> for the VirtualBox virtual machine. Only the Corporate, Technician, and		
	Commercial licenses support this format.		
You may	You may read more about virtual disk formats in the help page <u>Supported Virtual Disk and Disk Image Formats</u> .		

■ Imaging Options

16

Differentially	Appended changes will be those between the saved full image and the current state. If there is no full image, it will be created instead. When restoring data, you will need the full image and ONLY the differential file created at the instant to which you want to restore data.
Incrementally	Appended changes will be those between the last saved changes and the current state. If there is no full image, it will be created instead. When restoring data, you will need the full image and ALL files (both incremental and differential ones) created to the instant to which you want to restore data.

Minimum file sizes: If you need to keep only the latest backup instant, you may use the Append changes differentially to the existing image option and delete all previous differential files. If you need to keep all instances, you may use the Append changes incrementally to the existing image option to keep overall file sizes smaller.

Data safety: If any of the differential file is damaged, data will be lost only for that backup instant. If any of the incremental file is damaged, data will be lost for all subsequent backup instances starting from the damaged file until the next full of differential backup.

All data in the image file will be replaced with the current one.

Click the Options button to specify additional options and parameters, if necessary.

• **Image Options** panel

Image options

Full

Image compression ratio	You may compress the data in the image to save space. Please note that the smaller size you select the more time will be spent to create the image file and vise versa.
Volume size for multi- volume image	You may set this option to Automatic and let Windows decide how to split the image file. This mostly depends on the file system on the destination disk. You may also either explicitly specify the split size, or choose a preset for various devices with removable storage. Select Fixed size for that. For the RDR format, a new partial file of the image will be started when the previous file reaches the specified file size. For the <u>VMDK</u> format, a new partial file of the image will be started when the specified data volume of the source object has been processed. Files in the VHD/VHDX and VDI formats cannot be split. You may read more about virtual disk formats in the help page <u>Supported Virtual Disk and Disk Image Formats</u> .
Estimated size	Shows the estimated size of the image file. An actual image size depends on how much empty space is on the selected partition and what file types are there.
Password protection	You may protect your image file with a password. Note: If you leave the Encrypt image option clear this feature will provide a relatively moderate protection against

	conventional unauthorized access. If this option is selected, R-Drive Image will encrypt the image using the AES-XTS algorithm. Note: Only files in the RDR format can be password protected and encrypted.
Image description	You may attach a text description to the image for annotation. Maximum length of the description is 255 characters.
Validate image when completed	Select this option if your want R-Drive Image to check the newly created file image for its consistency. This may be useful for storing image files with critical data. Please note that this operation requires additional time.
Shutdown after completion	There are three options for tasks started by the Windows scheduler or as a script: Do not shutdown: The default option. Your computer will not be shut down On success: Your computer will be shut down only if the task completes successfully Always: Your computer will be shut down regardless of the task result. If the task is started from R-Drive Image itself, your computer will be shut down only when the task completes successfully.

naga antiana	Image compression level	Image split size		
mage options	Faster Smaller	Automatic		
Notifications	speed size	Fixed Size		
Backup options	Estimated image size: 900B Destination free space: 758.4GB			
Replications	Password protection			
Replications	Encrypt image			
	••••••			
	Image description			
	Test image			
	Validate the image when completed			
	Shutdown after completion Do not shutdown	v		

• Notifications Options panel

Notifications options

Execute on

You may specify the applications of the *.com, *.exe, and *.pif types, and their parameters delimited by a space.

Mail Notification

If a personal firewall is installed on your computer, you should allow the r-driveimagecl.exe

application to g	get access to the	he e-mail serve	r.			
Test mail acc	ount					
Click this butto	n to test whet	her you entered	d the correct	et mail settings.		
	Options	-			×	
	Image options	Execute on				
	intege options	Error Enter filenar	ne			
	Notifications	Success Enter filenar	ne			
	Backup options	Email notification s Server mail.example: Sender: Recipient list: Custom subject: Send mail when Error occured Successful completed	.com Pr server1@example sysadmin_of_serv Server1: data disk Server1: data disk	rer1@example.com incremental backup	Test email	
				Ok	Cancel	

• Backup Options panel

Backup Options

Snapshot provider	A snapshot provider is a service R-Drive Image uses to read the disk content while creating its image. R-Drive Image uses the snapshot providers in the order specified on the tab. If it fails to use the first one selected, it tries to use the second one, and so on.
Windows Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use the Windows native snapshot provider. This snapshot provider is able to notify system applications that a snapshot is being taken. If this option is selected, pagefile.sys and hibernate.sys files are excluded from the image of the system disk.
R-TT Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use R-TT snapshot provider. This snapshot provider is not able to notify system applications that a snapshot is being taken.
Notify system applications	If this check box is selected, the snapshot provider, if it supports this feature, notifies system applications that a snapshot is being taken.
Limit I/O rate	Specifies the rate limits for reading/writing data from/to disks
Limit read	The rate limit for reading from the source disk

Limit write	The rate limit for writing to the destination disk
Process priority	These options specify how much computer resources R-Drive Image will consume during a backup process.
Backup Process Priority	Specifies the priority of the backup process. Similar to that specified in Windows Task Manager.
Use CPU cores	Specifies how many processor cores R-Drive Image will use for the backup process.
Ignore disk read errors (bad sectors)	 If this check box is selected, R-Drive Image will ignore possible read errors when it tries to read data from bad sectors. R-Drive Image works with disks with bad sectors in the following way: It reads a certain part of disk (predefined by Windows) and If read errors are ignored, the entire part with bad sectors will be filled with zeros. If read errors are not ignored, R-Drive Image reads that part sector by sector and shows a warning message for every bad sector with two options: skip the sector or try to read it again. In this case only the bad sectors will be filled with zeros, but all that requires manual actions and extremely slows the imaging process. Please note that R-Drive Image is developed for the work with normally functioning disks. If you need to image a malfunctioning disk, use <u>R-Studio</u>, a data recovery utility. It has more controls for imaging, and can create R-Drive Image-compatible images even in its demo mode, that is, without registering.
Backup AUX applications	R-Drive Image is able to make applications run before and after all backup operations. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.
Before	An application R-Drive Image starts before the backup operations starts. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat"
After	An application R-Drive Image starts after the backup operations completes. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat"
Snapshot AUX applications	R-Drive Image is able to make applications run before and after taking the snapshot of one or several volumes. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.
Before	An application R-Drive Image starts before it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"
After	An application R-Drive Image starts after it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"

See Creating consistent point-in-time backups for more details.

•

	Snapsh	ot providers	Process priority							
Image options Notifications	R-T	dows volume snapshot service T volume snapshot service y system applications	Backup process priority Use CPU cores	Normal Unlimited	•					
ackup options	Limit I/C) rate								
		t read (MB/sec) 0 ×								
	Backup	Backup AUX applications								
	Before									
	After	"C:\Program Files (x86)\R-Wipe&C	Clean\RwcRun.exe")					
	Snapsh	ot AUX applications								
	Before	Enter filename)					
	After	Enter filename								

4 Verify that the information on the Processing panel is correct and click the Start button You may also create a <u>script</u> for this action. Click the Script to Clipboard button and paste the script to any text-processing utility.

lain menu	Proce	ssing	Save script▼	
		Append changes differer Compression Estimated image size Estimated total duration	ntially Faster speed 2.99GB 3 minute(s) 20 second(s)	
14 Estimated 4 minu	time left	Operation 1 of 4 Operation Backup type Partition	Backup partition Actual data only Logical Partition #1	
Backup p Logical Partition Operation	#1 NTFS-Test	File System Volume Label Used space Capacity Located on HDD Estimated duration	NTFS NTFS-Test 1.15GB 2.92GB QUANTUM87GB #1) 53 second(s)	
		Operation 2 of 4		

> R-Drive Image will start creating the image file(s)

The **Progress** bar will show the progress of the current operation and overall process. When the image is created, the **Image created successfully.** message will appear. You may cancel the current operation by clicking the **Cancel** button. The **Operation canceled by user** message will appear.

-				R-Drive Ima	age	×
R-Drive Image	× Iy	R-Drive Image	× Operation canceled by user		There is not enough space on the disk. Click OK to retry. G:\E-image2.rdr	
Ok			Ok			Ok Cancel

If there is not enough space on the destination place, the **Not enough space** message will appear. You may select another place for the rest of the image file or cancel the operation

When the operation is over, you may see the results of the operation by clicking the **Open logs** button .

Writing images on CD-R/RW discs and other devices with removable storage CD-R/RW and DVD discs

If you select a CD/DVD drive to write the image file, you will see the **Media Options** panel

You may create a system recovery disc(s) for your system if you select the Include **R-Drive Image bootable version** option on this panel. You may start your system up using such CD/DVD disc and recover the data using the **R-Drive Image** <u>startup version</u>.

Then select appropriate CD/DVD Media Options. Leave Use ISO caching selected unless you have problems with data recording on a disc.

Options		
Imaga aptiona	CD Media Options	
Image options	Write speed Maximum	~
Notifications	Write method O Direct write Use ISO caching	
Backup options	DVD Media Options	
Media options	Write speed Maximum	-
	Write method Direct write Use ISO caching	

When you click the Start button, **R-Drive Image** will open the CD-R/RW drive tray and the **Insert a blank CD-R/RW disc...** message will appear. Insert a blank CD-R/RW disc and click the **OK** button. Each time **R-Drive Image** fills the disc, the **Insert the next blank CD-R/RW disc...** message will appear. Insert the next blank CD-R/RW disc and click the **OK** button.

If you mistakenly insert a non-empty CD-R/RW disc, the **CD-R/RW disc is not empty...** message will appear. Change the disc to another empty CD-R/RW disc and click the **OK** button.

Supported CD and DVD Recorders.

Disk/file structure for CD-R/RW discs and other devices with removable storage

If you specify the fil disk/file structure:	<code>ename.rdr</code> file name for the image file, $R\text{-Drive}\ Image$ will create the following
Disc	File name
The first disk	filename1.rdr
The second disk	filename2.rdr
The third disk	filename3.rdr
It is recommended the	the way work the dick accordingly. You will start restoring the data from the last dick. Go

It is recommended that you mark the disk accordingly. You will start restoring the data from the last disk. Go to the **<u>Restore Data from an Image</u>** topic for more details.



■Bad Sectors

When **R-Drive Image** encounters a bad sector, the **IO Error** message will appear. You may either cancel the current action or fill the bad sectors with zeros.

IO Error Options

Abort	Click this button to cancel the action
Retry	Click this button to try to read the bad sectors once again
Ignore	Click this button to skip this error and fill the bad sectors with zeros
Ignore All	Click this button to skip all errors and fill the bad sectors with zeros

R-D	rive Image				\times
×	Error reading The request fa	sector 10680 ailed due to a	32 on disk fatal devic	ST380815AS e hardware e	3 4. AAB rror (483)
		Retry	lanore	Ignore All	Abort

Backup only selected files from the Select disk(s) to create image panel

You may also copy those files to a specified folder.

You may create images from individual files only from partitions with file systems supported by your Windows system (FAT, NTFS, ReFS by default). They may be other file systems if your Windows has installed drivers for them.

1 Click Create image on the Action Selection panel.

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

R-Drive Image			
Analyzing partition D.	(
8			

Then the **Select disk(s) to create image** panel will show the configuration.

- 2 Right-click the objects files on which you want to backup on the Select disk(s) to create image panel and select Backup selected files only on the shortcut menu.
- 3 Select files on the Files Selected panel and select the files you want to backup and click the OK button

Name	Туре	Size	Last modified	\bigcirc	
🖌 🔳 🧼 NTFS (NTFS-Test)	Volume	2.92GB			
> SRECYCLE.BIN	Folder		12/8/15 9:48 AM		
Documents	Folder		10/5/18 7:16 PM		
> 🗌 📒 Files to wipe	Folder		4/23/11 6:12 PM		
> 🗌 📒 MaxQDA	Folder		8/6/12 6:33 PM		
> 🔲 📕 MyPhoto	Folder		4/5/11 7:43 PM		
🛩 📝 📕 Photo	Folder	48.4MB	4/5/11 7:41 PM		
Picture 001.jpg	File	1.56MB	4/23/07 10:08 AM		
V 🌪 Picture 002.jpg	File	1.82MB	4/23/07 10:08 AM		
🔽 🌪 Picture 003.jpg	File	1.60MB	4/23/07 10:08 AM		
🔽 🌪 Picture 004.jpg	File	1.55MB	4/23/07 10:08 AM		
V 🌪 Picture 005.jpg	File	1.51MB	4/23/07 10:08 AM		
🔽 🌪 Picture 006.jpg	File	1.42MB	4/23/07 10:08 AM		
🔽 🌪 Picture 007.jpg	File	1.48MB	4/23/07 10:08 AM		
🔽 🌪 Picture 008.jpg	File	1.34MB	4/23/07 10:08 AM		
🔽 🌪 Picture 009.jpg	File	1.62MB	4/23/07 10:08 AM		
🔽 🌪 Picture 010.jpg	File	1.78MB	4/23/07 10:08 AM		
🔽 🍁 Picture 011.jpg	File	1.44MB	4/23/07 10:08 AM		
🔽 🍁 Picture 012.jpg	File	1.85MB	4/23/07 10:08 AM		
V 🌪 Picture 013.jpg	File	1.69MB	4/23/07 10:08 AM		
🔽 🌞 Picture 014.jpg	File	1.71MB	4/23/07 10:08 AM		
🔽 🍁 Picture 015.jpg	File	2.02MB	4/23/07 10:08 AM		
🔽 🌞 Picture 016.jpg	File	1.50MB	4/23/07 10:08 AM		
🔽 🍁 Picture 017.jpg	File	1.97MB	4/23/07 10:08 AM		
	File	1 70MB	4/23/07 10:08 AM		

You may search for individual files, use <u>filters</u>, or the <u>Batch mode</u> if you want to include all files of several patterns. Such patterns may include multiple file names, masks, and paths.

R Enter file filter specifications. Wildcards can be used	×
Photo Promo MaxQDA *jpg MyDocs??.docx	
Save	Ok Cancel

R-Drive Ima	ige - Create Imag	je							-		: I
() in menu	Refresh		S	Select dis	sk(s) to	crea	te imag	je			•••
urce											
	MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS			: (FAT32-1 02GB FAT:			(FAT-TES B FAT16	ח	Un 932	alloc; MB
	GPT 931.5GB	(Recc U UI 300ME 100M		(System) 1GB NTFS	Windc 524MB	Una 1MB	Windc 450MB	Windc 450MB	D: (Data) 638.5GB		Una 1.691
	MBR 1.81TB	Y: (Backup) 1.81TB exFAT									
🗲 Bacl								Disks			

And click the Next button on the Select disk(s) to create image panel

4 Select the place on the **Choose destination of new image** panel to which the image files will be written, specify the file name, and click the Next button

0	Select the destina	tion for the new image ••
lain menu		
	RAIDERS	
5	RAID10	Existing image details
>	RAID62X	MBR F: (NTES-Test)
>	RAIDHP5x16	7.0700
~	RDI-Images	7.87GB 61.7MB RImgFS
	Sbad001SPartition1-1_Partition1-3-image4.rdr	
	🖲 E-image.rdr	
	E-image2.rdr	
	F_files-image.rdr	
	🚊 F-image.rdr	Dates of included archives
	🛓 G_files-image.rdr	Dates of included archives
	HardwareRAID0.rdr	7/2/2021 1:30:33 PM
	HDD1-image.rdr	
	HDD1-image2.rdr	
	 HDD1-image3.rdr Image_Bad.rdr 	
	Partition1-1_Partition1-3-image.rdr	
	Partition1-1_Partition1-3-image.rdr	Imaging mode Differential -
	Partition1-1_Partition1-3-image3.rdr	Differential +
	×	
	Map network drive	
	WERE IN A REAL PROPERTY OF A	
ile name:	Y:\RDI-Images\F_files-image.rdr	Replications R-Drive Image format
Back		Options Disks

You may select any place including connected network drives, <u>supported CD and DVD Recorders</u>, or any other devices with removable storage.

Click the Options button to specify additional options and parameters, if necessary.

• Image Options

Notifications Options

Backup Options

See Creating consistent point-in-time backups for more details.

5 Verify that the information on the **Processing** panel is correct and click the Start button

You may also create a <u>script</u> for this action. Click the **Script to Clipboard** button and paste the script to any text-processing utility.

> R-Drive Image will start creating the image file(s)

The Progress bar will show the progress of the current operation and overall process. When the image is created, the **Image created successfully.** message will appear.

When the operation is over, you may see the results of the operation by clicking the **Open logs** button .

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

2.2 Create an Image from Files

You may backup only selected files rather than the entire object. You can do that in the <u>Create Image</u> and Create an Image from Files (below) actions. You may also <u>copy those files to a specified folder</u>.

You may create images from individual files only from partitions with file systems supported by your Windows system (FAT, NTFS, ReFS by default). There may be other file systems if your Windows has installed drivers for them.

Create Image from selected files from the Action Selection panel

1 Click Create image from files on the Action Selection panel

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

R-Drive Image			
Analyzing partition D:	T		
8			

2 Select files you want to include in the image on the **Select files for new image** panel and click the Next button

ain menu	Select file	es for	new image			•••
ame	Туре	Size	Last modified	(0	1
D: (Data, NTFS)	Volume	931.5GB				
F: (NTFS-Test, NTFS)	Volume	2.92GB				
🔳 🦇 G: (FAT32-TEST, FAT32)	Volume	2.02GB				
> SRECYCLE.BIN	Folder		3/31/2011 8:57:32 PM			
> 🔄 📕 .fseventsd	Folder		12/5/2012 6:50:52 PM			
> 🗌 📒 .Spotlight-V100	Folder		12/5/2012 6:50:52 PM			
> 🗌 📕 .Trashes	Folder		12/5/2012 6:50:52 PM			
> 🔽 📒 Files to Delete	Folder	208KB	2/15/2023 12:52:24 PM			
> 🔽 📒 Files to Recover	Folder	198.7MB	7/1/2005 12:50:28 AM			
> 🔽 📒 Music	Folder	192.1MB	2/15/2023 12:52:24 PM			
> 🗌 📒 Recycled	Folder		7/22/2005 1:30:16 AM			
> 🗌 📒 System Volume Information	Folder		7/1/2005 12:49:24 AM			
> 🗌 📕 Temp	Folder		4/27/2007 10:56:56 AM			
> 🗌 📒 TMP	Folder		2/15/2023 12:52:28 PM			
> 🗌 📒 Video	Folder		12/4/2012 7:44:14 PM			
Trashes	File	4KB	12/5/2012 6:50:52 PM			
P1000075.JPG	File	2.04MB	8/6/2005 6:04:54 AM			
V 🌪 P1000076.JPG	File	1.93MB	8/6/2005 6:06:04 AM			
🗌 🧼 H: (FAT-TEST, FAT16)	Volume	1.99GB				
🗌 🧼 Y: (Backup, exFAT)	Volume	1.81TB				
🗌 🛫 Z: (Net_Drive, NTFS)	Volume	1.59TB				

You may search for individual files, use <u>filters</u>, or the <u>Batch mode</u> if you want to include all files of several patterns. Such patterns may include multiple file names, masks, and paths.

3 Select the place on the **Choose destination of new image** panel to which the image files will be written, specify the file name, and click the Next button

Main menu	Select the destinat	ion for the new image ····
	RDI-Images Sbad001SPartition1-1_Partition1-3-image4.rdr E-image.rdr F-files-image.rdr G-files-image.rdr G-files-image.rdr G-files-image.rdr HardwareRAID0.rdr HDD1-image2.rdr HDD1-image2.rdr HDD1-image2.rdr MD1-image2.rdr Partition1-1_Partition1-3-image2.rdr Partition1-1_Partition1-3-image2.rdr Partition1-1_Partition1-3-image2.rdr Partition1-1_Partition1-3-image2.rdr	Existing image details C: (FAT32-TEST) 396 6MB RimgFS Dates of included archives 7/11/2021 12:45:25 PM
	SoftRAID.r.dr SoftRAID.r.dr SoftRAID.r.dr SoftSpanned.rdr Wap network drive	Imaging mode Overwrite The data in the existing image will be replaced with new ones
File name:	Y:\RDI-Images\G files-image.rdr	Replications R-Drive Image format 👻

You may select any place including connected network drives, supported CD and DVD Recorders, any other devices with removable storage, or available <u>FTP/FTPS/SFTP servers</u>. Several cloud services are also supported. You may also <u>map network drives</u> directly from the program.

Images can be replicated, that is, their copies may be saved to one or other different locations.

26

Click the Options button to specify additional options and parameters, if necessary.

• Image Options panel

Image compression ratio	You may compress the data in the image to save space. Please note that the smaller size you select the more time will be spent to create the image file and vise versa.
Volume size for multi- volume image	You may set this option to Automatic and let Windows decide how to split the image file. This mostly depends on the file system on the destination disk. You may also either explicitly specify the split size, or choose a preset for various devices with removable storage. Select Fixed size for that. For the RDR format, a new partial file of the image will be started when the previous file reaches the specified file size.
Estimated size	Shows the estimated size of the image file. An actual image size depends on how much empty space is on the selected partition and what file types are there.
Password protection	You may protect your image file with a password. Note: If you leave the Encrypt image option clear this feature will provide a relatively moderate protection against conventional unauthorized access. If this option is selected, R-Drive Image will encrypt the image using the AES-XTS algorithm.
Image description	You may attach a text description to the image for annotation. Maximum length of the description is 255 characters.
Validate image when completed	Select this option if your want R-Drive Image to check the newly created file image for its consistency. This may be useful for storing image files with critical data. Please note that this operation requires additional time.
Shutdown computer when completed	If this checkbox is selected, R-Drive Image will shut your computer down when completed the task.

• Notifications Options panel

Notifications options

Execute on You may specify the applications of the *.com, *.exe, and *.pif types, and their parameters delimited by a space.

Mail Notification

If a personal firewall is installed on your computer, you should allow the r-driveimagecl.exe application to get access to the e-mail server.

Test mail account

Click this button to test whether you entered the correct mail settings.

• Backup Options panel

Backup Options

Snapshot provider	A snapshot provider is a service R-Drive Image uses to read the disk content
	while creating its image. R-Drive Image uses the snapshot providers in the order
	specified on the tab. If it fails to use the first one selected, it tries to use the second
	one, and so on.

Windows Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use the Windows native snapshot provider. This snapshot provider is able to notify system applications that a snapshot is being taken. If this option is selected, pagefile.sys and hibernate.sys files are excluded from the image of the system disk.
R-TT Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use R-TT snapshot provider. This snapshot provider is not able to notify system applications that a snapshot is being taken.
Notify system applications	If this check box is selected, the snapshot provider, if it supports this feature, notifies system applications that a snapshot is being taken.
Limit I/O rate	Specifies the rate limits for reading/writing data from/to disks
Limit read	The rate limit for reading from the source disk
Limit write	The rate limit for writing to the destination disk
Process priority	These options specify how much computer resources R-Drive Image will consume during a backup process.
Backup Process Priority	Specifies the priority of the backup process. Similar to that specified in Windows Task Manager.
Use CPU cores	Specifies how many processor cores R-Drive Image will use for the backup process.
Ignore disk read errors (bad sectors) Backup AUX	 If this check box is selected, R-Drive Image will ignore possible read errors when it tries to read data from bad sectors. R-Drive Image works with disks with bad sectors in the following way: It reads a certain part of disk (predefined by Windows) and If read errors are ignored, the entire part with bad sectors will be filled with zeros. If read errors are not ignored, R-Drive Image reads that part sector by sector and shows a warning message for every bad sector with two options: skip the sector or try to read it again. In this case only the bad sectors will be filled with zeros, but all that requires manual actions and extremely slows the imaging process. Please note that R-Drive Image is developed for the work with normally functioning disks. If you need to image a malfunctioning disk, use R-Studio, a data recovery utility. It has more controls for imaging, and can create R-Drive Image-compatible images even in its demo mode, that is, without registering. R-Drive Image is able to make applications run before and after all backup
applications	operations. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.
Before	An application R-Drive Image starts before the backup operations starts. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat"
After	An application R-Drive Image starts after the backup operations completes. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat"

Snapshot AUX applications	R-Drive Image is able to make applications run before and after taking the snapshot of one or several volumes. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.
Before	An application R-Drive Image starts before it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"
After	An application R-Drive Image starts after it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"

See Creating consistent point-in-time backups for more details.

4 Verify that the information on the **Processing** panel is correct and click the Start button

You may also create a <u>script</u> for this action. Click the **Script to Clipboard** button and paste the script to any text-processing utility.

> R-Drive Image will start creating the image file(s)

The Progress bar will show the progress of the current operation and overall process. When the image is created, the **Image created successfully.** message will appear.

When the operation is over, you may see the results of the operation by clicking the **Open logs** button .

2.3 Copy Files to a Folder

R-Drive Image can copy individual files to a specified folder. Such copy is differential, that is, **R-Drive Image** compares files in the source and target folders and copies only those files that are new or have been altered.

To create an image:

1 Click Create image from files on the Action Selection panel

R-Drive Image will start analyzing the computer disk configuration.



2 Select files you want to include into the Differential copy on the Select files for new image panel and click the Next button

Select files for new image panel	

lame		Туре	Size	Last modified	0.	_
	: (System, NTFS)	Volume	111.1GB			
	(Data, NTFS)	and the second se	931.5GB			
	(NTFS-Test, NTFS)	Volume				
	SRECYCLE.BIN	Folder		11/3/2016 1:55:48 PM		
>	Docs	Folder	177.4	2/15/2023 12:51:56 PM		
	Documents	Folder		1/24/2023 12:41:59 PM		
>	Files	Folder	115.4	8/6/2018 11:56:52 AM		
	Files to wipe	Folder		2/15/2023 12:52:02 PM		
> □	MaxQDA	Folder		8/6/2012 11:33:04 AM		
>	Music	Folder		1/24/2023 12:42:09 PM		
> 🔽 丨	MyPhoto	Folder	25.7MB	4/5/2011 12:43:41 PM		
> 🔽 🖡	Photo	Folder	48.4MB	2/15/2023 12:52:03 PM		
> 🔽 🛛	Photos	Folder	516.6	1/24/2023 12:42:22 PM		
>	Promo	Folder		2/15/2023 12:52:06 PM		
>	Recovered_Files	Folder		4/5/2011 12:44:43 PM		
>	System Volume Information	Folder		2/7/2024 10:26:27 AM		
>	Video	Folder		9/4/2012 6:24:59 AM		
🗌 🧼 F	: (FAT32-TEST, FAT32)	Volume	2.02GB			
	: (FAT-TEST, FAT16)		1.99GB			

You may search for individual files, use <u>filters</u>, or the <u>Batch mode</u> if you want to include all files of several patterns. Such patterns may include multiple file names, masks, and paths.

3 Select a folder to copy files to on the **Select destination of new image** panel, switch image file format to Differential copy to folder, and click the Next button

Select the destination for the new image panel

lain menu	tination for the new image	
 Desktop OneDrive - Personal 	Existing image details	
> 🧸 Tester 1 🗸 🛄 This PC	Directory size details	
 > 30 Objects > Desktop > Documents > Downloads > Music > Pictures > Videos * System (C:) > Data (D:) > SRECYCLE.BIN > 111 > Accer Backups > BurnYourSecrets > CanonMovie 	□ Destination free space: 243.7GB Source used space: 883.7MB Source contains 180 file(s)	
ile name: D:\Backups\	Replications Differential copy to folder	
	R-Drive Image format	
- Back	Options Differential copy to folder]
	VHDX format	

You may select any place including connected network drives, **supported CD and DVD Recorders**, any other devices with removable storage, or available <u>FTP/FTPS/SFTP servers</u>. Several <u>cloud services</u> are also supported. You may also <u>map network drives</u> directly from the program.

<u>Copied files can be replicated</u>, that is, their copies may be saved to one or other different locations.

Click the Options button to specify additional options and parameters, if necessary.

Copy options panel

Options		×
Copy options	Backup paths: Relative (from E:)	
Notifications	Copy attributes:	
Backup options	All	v
	File copy options Remove files in the destination that have no matching files in the source Also remove excluded from copy files in the destination Compare file contents even for matching files (slow) Shutdown computer when completed	
	Ok Ca	ancel

• Copy options

Backup paths	Full: The entire file path starting from the device root will be saved. Relative: The file path will be saved from the topmost selected folder.
Copy attributes	Specifies how file attributes will be copied: All, Remove hidden/system attributes, Do not copy file attributes.
File copy options	
Remove files in the destination that have no matching files in the source	If this checkbox is selected, R-Drive Image will delete those files in the destination folder which have been removed/deleted in the source folder(s). Copy filters are also applied. For example, if only jpg files (the *.jpg filter) are to be copied, only jpg files will be deleted.
Also remove excluded from copy files in the destination	If this checkbox is selected, R-Drive Image will delete all files in the destination folder which have been removed/deleted in the source folder(s), regardless on all copy filters.
Compare file contents even for matching files	R-Drive Image compares matching files by their size and modification time stamp, and overwrites mismatching files. If this checkbox is selected, R-Drive Image will compare by their content, which severe slows down this operation.
Shutdown computer when completed	If this checkbox is selected, R-Drive Image will shut your computer down when completed the task.

• Notifications Options panel

Notifications options

Execute on

You may specify the applications of the *.com, *.exe, and *.pif types, and their parameters delimited by a space.

Mail Notification

If a personal firewall is installed on your computer, you should allow the r-driveimagecl.exe application to get access to the e-mail server.

Test mail account

Click this button to test whether you entered the correct mail settings.

• Backup Options panel

Backup Options

Snapshot provider	A snapshot provider is a service R-Drive Image uses to read the disk content
	while creating its image. R-Drive Image uses the snapshot providers in the order
	specified on the tab. If it fails to use the first one selected, it tries to use the second
	one, and so on.
Windows Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use the Windows native
	snapshot provider. This snapshot provider is able to notify system applications that
	a snapshot is being taken.
	If this option is selected, pagefile.sys and hibernate.sys files are excluded
	from the image of the system disk.
R-TT Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use R-TT snapshot
	provider. This snapshot provider is not able to notify system applications that a
Notificantom	snapshot is being taken.
Notify system applications	If this check box is selected, the snapshot provider, if it supports this feature,
	notifies system applications that a snapshot is being taken.
Limit I/O rate	Specifies the rate limits for reading/writing data from/to disks
Limit read	The rate limit for reading from the source disk
Limit write	The rate limit for writing to the destination disk
Process priority	These options specify how much computer resources R-Drive Image will
	consume during a backup process.
Backup Process	Specifies the priority of the backup process. Similar to that specified in Windows
Priority	Task Manager.
Use CPU cores	Specifies how many processor cores R-Drive Image will use for the backup
	process.
Ignore disk read errors (bad sectors)	If this check box is selected, R-Drive Image will ignore possible read errors
	when it tries to read data from bad sectors.
	R-Drive Image works with disks with bad sectors in the following way:
	It reads a certain part of disk (predefined by Windows) and
	• If read errors are ignored, the entire part with bad sectors will be filled with
	1
	 Zeros. If read errors are not ignored, R-Drive Image reads that part sector by sector and shows a warning message for every bad sector with two options: skip the sector or try to read it again. In this case only the bad sectors will be filled with zeros, but all that requires manual actions and extremely slows the imaging process. Please note that R-Drive Image is developed for the work with normally functioning disks. If you need to image a malfunctioning disk, use <u>R-Studio</u>, a data recovery utility. It has more controls for imaging, and can create R-Drive Image-compatible images even in its demo mode, that is, without registering.
------------------------------	--
Backup AUX applications	 R-Drive Image is able to make applications run before and after all backup operations. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.
Before	An application R-Drive Image starts before the backup operations starts. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat"
After	An application R-Drive Image starts after the backup operations completes. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat"
Snapshot AUX applications	R-Drive Image is able to make applications run before and after taking the snapshot of one or several volumes. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.
Before	An application R-Drive Image starts before it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"
After	An application R-Drive Image starts after it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"

See Creating consistent point-in-time backups for more details.

4 Verify that the information on the Processing panel is correct and click the Start button You may also create a <u>script</u> for this action. Click the **Script to Clipboard** button and paste the script to any text-processing utility.

> R-Drive Image will start creating the image file(s)

The Progress bar will show the progress of the current operation and overall process. When the image is created, the **Image created successfully.** message will appear.

When the operation is over, you may see the results of the operation by clicking the **Open logs** button .

2.4 Restore Data from an Image

Note: You may read about <u>Support for Various Disk Partition Schemes and File Systems</u> to learn more about possible options for your specific case.

We recommend you stop all other programs before you start restoring data on a partition.

Note: Go to the <u>**Restoring Data to a System or Other Locked Disk</u> topic if you want to learn how to restore data to <u>system disk</u>s.</u>**

You may restore data from images for entire disk objects or restore only selected files.

Restoring partitions and entire disks

R-Drive Image can smoothly copy/restore drives/images onto larger drives or drives of the same size. Moreover, it can shrink/extend partitions with <u>some file systems</u> if need be.

Whether **R-Drive Image** can copy/restore data onto a smaller drive depends on the last cluster in the file system of the source drive/image. It cannot do this if the data blocks are physically located outside the boundaries of the smaller drive, even when the total size of the file system is smaller than the drive size. Try to defragment the source drive then.

To restore data from an image to a disk/partition:

1 Click Restore Image on the Action Selection panel.

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress. Then **R-Drive Image** will show you the **Choose image file** panel with the disks/folder structure.

2 Select the file with the image on the Choose image file panel and click the Next button

In addition to the rdr native file format, **R-Drive Image** support several virtual disk and disk image formats.

Main menu Select	image file ···
Last used images g-drive:// gmail.com@/G-image.rdr D:\MAGES\RDI\F_H-image.rdr	Image details MBR 7.87GB F: (NTFS-Test 2.92GB NTFS 2.06 FAT1
HDD1-image.rdr HDD1-image2.rdr HDD1-image2.rdr HDD1-image2.rdr Image Bad.rdr Partition1-1_Partition1-3-image2.rdr Partition1-1_Partition1-3-image3.rdr Partition1-1_Partition1-3-image4.rdr	
R-DriveImage-7000.iso SoftRAID0.rdr SoftRAID1.rdr SoftRAID1.rdr SoftSpanned.rdr	Dates of included archives 6/25/2021 5:54:21 AM 7/2/2021 5:42:16 AM 7/4/2021 10:59:26 AM
Map network drive Connect to cloud	e.rdr All supported images

When you click the file, you may view its content in the right panel.

■ More information...

Objects in Image Files

Image with one logical disk	Source: D:\IMAGES\RDI\F-in Disk Letter/Label/Disk Size/File Data on the disk ate/time: 03-23-2021 MBR E: (NTFS-Test) Hard Drive Properties WDC WD75AA-00BAA0 10.09K11 Total space 7.02GB Empty space on the disk
Image with two logical disks on one hard drive	Source: D:WMAGES Disk Letter/Label/Disk Size/File System Image date/time: 03-23-2021 WMBR 7.02GB E: (NTFS-Test) 2.92GB NTFS 2.92GB NTFS 2.92GB (Used space 1.53GB) Logical Partition
Image with two logical disks on two hard drives	Source: D:\IMAGES\RDI\Two-image.rdr Image date/time: 03-23-2021 Image date/time: 03-23-2021 Image date/tima

You may also restore data directly from Windows explorer by right-clicking the required image file with the .rdr extension and selecting **Restore Image** from the shortcut menu.

If you select an image with <u>incremental or differential</u> data backup, **select** the date and time of image creation and click the **Next** button.

Main menu	Refresh	Create Modi	ify Format	Delete	Clear HDD	Wipe	Undo	Optior	1S
Source: Y	:\RDI- <mark>I</mark> mages	Partition1-1_Partiti	ion1-3-image3	.rdr	Image	date/time:		2021 08:	1.0.0
	MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS				I: (FAT-TES GB FAT16	06-25-2	2021 15: 2021 08: 2021 08:4	54:21
Destinatio	n								
	Drag her	e to restore files							
1000	MBR 7.87GB	F: (NTFS-Test)		• G: (FAT32 • 2.02GB FA		H: (FAT			Unalloc 932MB
- in	1.0100								
	GPT 931.5GB		Systi C: (Sy 128M 291GB			Some 450		(Data) .5GB NTF	Un: 1.69
	GPT								

If the image file is password-protected, the **Password prompt...** message will appear. Enter the password and click the **OK** button.

3 Select the object in the image file on the **Image Object Selection** panel, select a destination, and click the Next button

R-Drive Imag	ge - Restore Ima	age								<u> </u>		×
Main menu	Refresh	Create	Modify	Format	Delete	Clear	HDD	Nipe	C Undo	Optio		••••
Source: Y	:\RDI-Image	s\Partition1-1_F	Partition1	-3-image2	rdr		Ir	nage date	/time:	06-25	-2021	
	MBR 7.87GB	F: (NTFS-Tes 2.92GB NTFS	st)					AT-TEST) FAT16				
Destination	n											
	Drag her	re to restore file	s									
5	MBR 7.87GB	• F: (NTFS-Te • 2.92GB NTF				AT32-TES B FAT32		H: (FAT-T		:	Unallo 932.8N	
	GPT 931.5GB	(Rei) U 300N 100		ti C: (Sy: A 291GB		indc Ur 4MB 1M		IE 450N		Data) 5GB NT		na 591
	MBR 1.81TB	Y: (Backup 1.81TB exFA										
H Back				Shov	w/hide disl	(s 2 (Operation	(s) XF	Remove	all	📫 Ne	ext

Use the **Refresh** button if your computer disk configuration has been changed (when you connect a USB disk, for example).

R-Drive Image may show only those disks that you wand to see.

To hide/show disks:

1 Click the Show/hide disks button

Hide/show disks

-	MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS	10 M H	: (FAT32-TEST 02GB FAT32) H: (FAT-T 2GB FAT1	
	GPT 931.5GB	(Rei UI Syst 3001 100 1281		Windc Un 524MB 1Mi		
	MBR 1.81TB	Y: (Backup) 1.81TB exFAT				

2 Clear/select disks you want to hide/show Hide/show disks

~	MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS	G: (FAT32-TES 2.02GB FAT32	T) H: (FAT-TE 2GB FAT16	
	GPT 931.5GB		: (Syster Wind Una 1GB NTF 524MI 1ME		D: (Data) Una 638.5GB NT 1.65
✓	MBR 1.81TB	Y: (Backup) 1.81TB exFAT			

> R-Drive Image will show only those disks that have been selected Hide/show disks

	rag here to restore files							
MBI 7.87	GB 2.92GB NTFS	G: (FAT32-TEST)	H: (FAT-TEST) 2GB FAT16	Unalloc: 932MB				
MBI 1.81	R Y: (Backup) TB 1.81TB exFAT							
Back		Show/hide disks	eration(s) XRemove	all Next				
	ct all objects of	Show/hide disks 0 Ope			e icon.	GF 93	1 ECD	It will show

You may select only one object at a time, and you need to specify the destination to proceed further.

■ S.M.A.R.T. warning for a hard drive

If a hard drive has S.M.A.R.T. warnings, a color mark will appear on its left-top corner. Dragging the cursor over the drive will show a tooltip explaining that warning.



Warnings will also appear in confirming e-mails for scheduled actions.

```
! SAMSUNG HM320HJ 2AK10001(298GB #2): Health Status: BAD
```

```
[01] Read Error Rate
```

! =========[S.M.A.R.T.]=============

<u>S.M.A.R.T.</u> (Self-Monitoring, Analysis and Reporting Technology) is a technology widely-used in hard drives and solid-state devices that monitors their reliability conditions to predict possible hardware failures.

More information...

If the chosen destination is smaller than the selected image, **R-Drive Image** will show the **Destination disk is too small** message and you will need to select another destination.

If you select several partitions as the destination, **R-Drive Image** will show the **You have selected several partitions...** message. If you click the **OK** button, all those partitions will be deleted and data will be restored on that <u>free space</u>.

Note: Although R-Drive Image shows unallocated space instead of the deleted partitions, the partitions and their data will be actually deleted only when R-Drive Image starts restoring the data from the image. Selected Object and Destination

	Source:	Total Image	Size tion1-1_Parti	tion1-3-image.	d Object in the li	nage time: 07-04-2021 13:59:2	6
		MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS BALL CR8.4A A5U.1	200		H: (FAT-TEST) 2GB FAT16	
	Dect	al space 7.870 rtition table: ME					
	Hard D	rives Drag	Source Hard Drive	Selected Destination	FAT32-TEST)	Partitions/Logical Disks/Unallocated Space	lloc,
		GPT 931.5GB	2.92GB NTFS (Rei 2011) 3001 100		GB FAT32 Windc Una File System/Labe	Wind Win D: (Data) Ime 450N 638.5GB NTF	ЛВ Una 1.691
		MBR 1.81TB	Y: (Backup) 1.81TB exFAT				
					C	Data modification confirmation	×
						As a result of execution of o disk(s) will be deleted and lo Click 'OK' to confirm the operat	ist.
R-Drive Image			×			 H: FAT-TEST (FAT16 2GB #2 F: NTFS-Test (NTFS 2.92GB 	
N	Target partition/	volume size i	ok				
							Ok Cancel

5 Specify restore parameters on this panel and click the Next button

You may change create/copy/modify parameters on the **Create partition, Copy partition**, or **Modify partition** panel. Click the **Create / Copy Options / Modify** button, respectively.

□Create/Copy Partition Parameters

Partitioning The type of partitioning scheme. See Support for Various Disk Partition

scheme	Schemes and File Systems for the list of supported partition types.
Partition type	Primary (Active)/ Primary/Logical You may specify the type of the partition to be restored. Do not change this setting unless you have serious reasons to do so.
File system	You may select the file system for the partition to be restored.
Allocation unit size	It is the size of a disk block, that is, the minimum allocatable disk space. (only on the Create partition panel.)
Volume label	Label of this volume. You can change it.
Drive letter	Select the letter that will be assigned to the partition. You may select "Do not connect" if you do not want to connect this partition to your system. Or "Do not modify" it you do not want to change the drive letter.
Partition size	Minimum/maximum size of the partition to be restored.
Free space before	You may specify the size of free space that will be left on the hard drive before the beginning of the partition.
Partition size	You may specify the size of the partition to be restored. Should be between the minimum and maximum partition size.
Free space after	You may specify the size of free space that will be left on the hard drive after the end of the partition.
	You may visually adjust the location and size of the object to be restored. All other restore options will be adjusted accordingly. Also, when you adjust one or several restore options directly, these changes will be shown visually. Green marks available space. See <u>Support for Various Disk Partition Schemes and File Systems</u> for the list of supported file systems.

Partition layout	MBR	
Partition type	Logical	
File system	FAT16	
Allocation unit size	Default	
Volume label		
Drive letter	Default	
Partition size	from 512B to 932.8MB	
Free space before	176.8MB	
Partition size	560.9MB	
Free space after	195MB	

Partition layout	MBR	
Partition type	Logical	~
File system	Do not format	
Drive letter	F:	~
Partition size	from 1.56GB to 2.92GB	
Free space before	714.8MB	
Partition size	1.56GB	
Free space after	674.4MB	

You may format a disk if necessary. Click the **Format** button and select the format parameters on the **Format partition** panel.

∃Format partition options

File system	You may select the file system for the partition to be <u>formatted</u> .
Allocation unit size	It is the size of a disk block, that is, the minimum allocatable disk space.

Volume label	Label for this volume.				
		Format partition Following disk will be F: NTFS-Te All data on this disk Filesystem Allocation unit size Volume label	est 2.92GB will be erased NTFS 2KB	x and lost!	
			Ok	Cancel	

You may also delete or <u>wipe</u> selected disk object by clicking the **Delete** button. Click the **Clear HDD** or **Wipe** button if you want to delete all object on the hard drive or wipe its data. Go to the <u>Partition Manager</u> help page for more details..

■ To restore data from an image of an entire hard drive to a hard drive:

The Restore/Copy Parameters panel will be different with different sets of options:

Main menu	Re Copy method	Options	•••
7 Destination M 7 G 9 M M	 Raw disk copy (copy as binary) Copy all partitions onto original places (copy as is) Realign partitions Fixed active partition Expand/Shrink to fit Fixed active partition All partitions will be copied to their original places. If the drive's geometry is detected correctly, and there is no non-standard loader, it makes the exact sector-by-sector copy of the original object. 		▼
Back	Ok Cancel	all 🕨 Ne	ext

HDD Copy Method					
Raw disk copy	R-Drive Image writes sector-by-sector the data from the original drive or				
	its image to the target one making an exact copy of the original disk				
	regardless of its partitioning method. Can be used if other methods create a				
	non-bootable disk due to incorrect detection of drive's geometry or non-				
	standard loader.				
	Drawback: partition sizes cannot be changed.				
Copy all partitions	R-Drive Image copies all partitions to their original places. If R-Drive				
onto original places	Image detects the drive's geometry correctly, and there is no non-standard				
	loader, it makes the same result as during Raw disk copy.				
Realign partitions	R-Drive Image will copy the partitions on the disk with a 512KB alignment.				
	This is very useful for SSD and advanced-formatted disks. If there are empty				

	(non-used) spaces between partitions, those spaces will be removed taking into account the alignment.
Expand/Shrink partition to whole disk	If there are empty (not-used) places between the partitions or they occupy less or more space than the target drive, R-Drive Image proportionally expands/shrinks them to occupy the entire target drive. Otherwise it is similar to Copy all partitions onto original places.
Fixed active partition	R-Drive Image preserves the original offset/size of the active partition (in
	case the loader has links to it).

See Support for Various Disk Partition Schemes and File Systems for details.

When you restore data from an image of a system disk, a disk signature collision may occur. In this case, the Disk Signature Collision panel will appear. You may specify the way to resolve this collision on this panel.



Disk Signature Collisio	n Resolving
Same signature for both disk	R-Drive Image will create an identical copy of the source disk with the same signature. To avoid disk signature collision, you'll have to disconnect one of the disks and restart the computer, if necessary. Use this mode if you clone a <u>system disk</u> for another computer or only the target disk will be used in yours.
Different signature on the target disk.	R-Drive Image will write another disk signature to the target disk. Don't use this mode if you clone a system disk, Windows won't start from it. To get access to the target disk after cloning, you'll have to restart the computer or re-connect it if it's an external USB disk.
Change the disk signature on the source disk.	R-Drive Image will change the disk signature on the source disk. Use this mode if you want to start Windows from the target disk, but be warned: the computer won't start from the source disk anymore.

If you try to restore data to a system or other disk locked by the system or other application, the Disk not locked message will appear.

41

opying mode:	VBOX HARDDISK 1.0 Image #1 120GB VBOX HARDDISK 1.0 (120GB #1) Copy all partitions onto original places on: 6 minute(s) 13 second(s)
This data	lock error - Partition X s may happen when you try to access or change a on your system or other already locked disk Retry to lock the disk once again
• 1	so you can choose one of the following options Restart computer (mandatory for system disk) Force system to unlock the disk (not recommended)

- To continue restoring you may:
- If you restore data to your <u>system disk</u>, select Restart computer (recommended) to continue restoring the data in the **R-Drive Image** startup mode. Read carefully the <u>Restoring Data to a System Disk</u> topic before you proceed.
- If you restore data to a disk locked by other low-level disk software (including Windows internal services), stop this software and select Retry to lock the disk once again.
- You may also try to unlock the disk by selecting Force Windows to unlock the disk (not recommended). If Windows fails to unlock the disk, the **Disk not locked** message will appear again. You will need to stop the software locking the disk manually or select Restart computer (recommended) to continue restoring the data in the **R-Drive Image** startup mode.

Note: Use this option cautiously, because it may cause unpredictable results including system crash and data loss.

6 Verify that the information on the Processing panel is correct and click the Start button

You may also create a <u>script</u> for this action. Click the **Script to Clipboard** button and paste the script to any text-processing utility.

> R-Drive Image will start restoring the data from the image file to the selected destination.

When the image is restored, the Image restored successfully message will appear.

If some other program (like a file manager) is accessing the partition on which the data is to be restored, the **Cannot lock the disk** message will appear. Close this program or make it stop accessing the partition.

If you restore data from an image of an entire hard drive to an entire hard drive, the system may not see the restored partitions until restarted. In this case **R-Drive Image** will show the **Disk image restored successfully.** message. Click the **Yes** button to restart your system.



■ Restoring data from CD-R/RW drives or other devices with removable storage

For the image with the	file name filename.rdr, R-Drive Image creates the following disk/file structure:
Disk	File name
The first disk	filename1.rdr
The second disk	filename2.rdr
The third disk	filename3.rdr

You should start restoring the data from the last disk.

Each time **R-Drive Image** requires a new disk, the **Insert disk #...** message will appear. Insert the necessary disk and click the **OK** button. Follow the device instructions on how to change its disks. **Note**: At the beginning, **R-Drive Image** may require you to change the first/last disks several times.

■Bad Sectors

When **R-Drive Image** encounters a bad sector, the **IO Error** message will appear. You may either cancel the current action or fill the bad sectors with zeros.

Abort	Click this button to cancel the action
Retry	Click this button to try to read the bad sectors once again
Ignore	Click this button to skip this error and fill the bad sectors with zeros
Ignore All	Click this button to skip all errors and fill the bad sectors with zeros

IO Error Options

44	R-Drive Image Manual	
	R-Drive Image X	R-Drive Image
	Insert disk =2 and click OK to continue	Error reading image Y:\Images\G-bad.rdr Disk G: inside image is affected Image file is corrupted. Decompression failed. Check system

Restoring selected files and folders

(See <u>Support for Various Disk Partition Schemes and File Systems</u> for the list of supported file systems)

1 Click **Restore Image** on the **Action Selection** panel

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress. Then **R-Drive Image** will show you the **Choose image file** panel with the disks/folder structure.

2 Select the file with the image on the **Choose image file** panel and click the Next button

When you click the file, you may view its content in the right panel.

If you select an image with incremental or differential data backup, **select** the date and time of image creation and click the **Next** button

If the image file is password-protected, the **Password prompt...** message will appear. Enter the password and click the **OK** button.

3 Select the object in the image file on the **Image Object Selection** pane where the files and folders reside, and click the Next button

R-Drive Imag	ge - Restore Im	age						- 0)
Main menu	Refresh	Create M	F T	rmat Delete	Clear HE	DD Wipe	Undo	Options	
Source: Y	:\RDI-Image	s\Partition1-1_Pa	rtition1-3-in	nage.rdr	Imag	ge date/time:	06-25-202	21 08:54:2	1 🔻
	MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS		J		H: (FAT-TE 2GB FAT16	ST)		
Destinatio	n	6							
	Drag he	re to restore files							
-	MBR 7.87GB	F: (NTFS-Tes 2.92GB NTFS	t)		FAT32-TEST) GB FAT32	H: (FAT 2GB FA		Una 932N	lloc; //B
	GPT 931.5GB	(Rei UI 3001 100			Windc Una 524MB 1MB	Wind: Wi 450ME 450			Una 1.691
	MBR 1.81TB	Y: (Backup) 1.81TB exFAT							
A Back			-	Show/hide di	sks 0 Ope	eration(s)	Kemove a	all 🗭	Next

- ® (F:) 18 files selected - 30MB × Type Size Last modified 0 Name NTFS (NTFS-Test) Volume 2.92GB M Folder 12/8/15 9:48 AM Documents Folder 10/5/18 7:16 PM 5 Files to wipe Folder 4/23/11 6:12 PM > MaxQDA Folder 8/6/12 6:33 PM > V MyPhoto Folder 25.7MB 4/5/11 7:43 PM 🗸 🔳 📕 Photo Folder 4.29MB 4/5/11 7:41 PM 🗌 犠 Picture 001.jpg 1.56MB 4/23/07 10:08 AM File
 Picture 001 jpg

 Picture 002 jpg

 Picture 003 jpg

 Picture 004 jpg

 Picture 005 jpg

 Picture 005 jpg

 Picture 006 jpg

 Picture 007 jpg

 Picture 007 jpg
 File 1.82MB 4/23/07 10:08 AM File 1.60MB 4/23/07 10:08 AM File 1.55MB 4/23/07 10:08 AM 1.51MB 4/23/07 10:08 AM File File 1.42MB 4/23/07 10:08 AM File 1.48MB 4/23/07 10:08 AM File 1.34MB 4/23/07 10:08 AM Picture 008.jpg Picture 009.jpg Picture 010.jpg Picture 011.jpg Picture 012.jpg Picture 013.jpg Picture 013.jpg Picture 015.jpg File 1.62MB 4/23/07 10:08 AM File 1.78MB 4/23/07 10:08 AM File 1.44MB 4/23/07 10:08 AM 1.85MB 4/23/07 10:08 AM File File 1.69MB 4/23/07 10:08 AM File 1.71MB 4/23/07 10:08 AM File 2.02MB 4/23/07 10:08 AM Output folder: C:\Users\Tester 1\Documents Batch mode Options Ok Cancel
- 4 Mark folders and files to restore on the Select Files to Restore panel, specify the output folder, and click the OK button

You may also specify Options that specifies paths for restored files, control processing of already existing files, and what to do with file attributes.

Copy options	×	
Copy from:		
Image root path	•	
If file already exists:		
Ask user		
Copy attributes:		
All	•	
	Ok Cancel	
Copy from:		py files either with their full path parent folder
If file already exists:	• 1	ccify R-Drive Image what to do files when they have the same e new ones.
Copy attributes:	with file a	ecify R-Drive Image what to do ttributes: Copy all attributes, len / system attributes, or Do not butes.

You may search for individual files, use <u>filters</u>, or the <u>Batch mode</u> if you want to include all files of several patterns. Such patterns may include multiple file names, masks, and paths.

ADI-Images\Pa	Create Mod	···		lear HDD	Wipe date/time	Undo	Copy option 25-2021 08		•
/BR	(NTFS-Test)	tition1-3-imag	je.rdr	Imag	e date/tim	e: 06-2	25-2021 08	54:21	
0700									
					H: (FAT- 2GB FAT				
							n :		
SPT :(Re::UI:		Syster 🕻 Wind	dc Una	Winde	Win(:		U	na 691
	/BR 7.87GB GPT 031.5GB	ABR F: (NTFS-Test) .87GB 2.92GB NTF\$ SPT 300h 100 MBR Y: (Backup)	ABR F: (NTFS-Test) .87GB 2.92GB NTFS SPT (Re : UI : Syst. C: 128M 291 131.5GB :00 : 128M 291 ABR Y: (Backup) .81TB 1.81TB exFAT	ABR F: (NTFS-Test) G: (FAT: 2.92GB NTFS SPT 2.92GB NTFS 2.02GB I SPT 3000 1000 128M 291GB NTF 524M MBR Y: (Backup) Y: (Backup) Y: (Backup) Y: (Backup) Y: (Content of the second of th	ABR 187GB F: (NTFS-Test) G: (FAT32-TEST) 2 92GB NTFS 2 02GB FAT32 SPT 131.5GB (Re: UI: Syste: C: (Syste: Windc Una 300): 100: 128M: 291GB NTF: 524MB ABR 8.81TB Y: (Backup) 1.81TB exFAT	ABR 187GB F: (NTFS-Test) G: (FAT32-TEST) H: (F 2 92GB NTFS 2 02GB FAT32 2 GB SPT 131.5GB (Re: UI: Syst: C: (Syster: Wind: Una 300h: 100: 128M 291GB NTF: 524MB 1MB 450ME ABR 8.81TB Y: (Backup) 1.81TB exFAT 1.81TB exFAT 1.81TB 1.81TB 1.81TB	ABR 187GB F: (NTFS-Test) G: (FAT32-TEST) H: (FAT-TEST) 2 92GB NTFS 2 02GB FAT32 2 02GB FAT32 2 02GB FAT36 SPT 131.5GB (Re: UI: Syst: C: (Syster: Wind; Una Wind; Win: 100) 128M 291GB NTF: 524MB 1MB 450ME 450W ABR 8.81TB Y: (Backup) 1.81TB exFAT 1.81TB exFAT 1.81TB 1.81TB	ABR 187GB F: (NTFS-Test) G: (FAT32-TEST) H: (FAT-TEST) 2 92GB NTFS 2 02GB FAT32 2 02B FAT16 SPT 301.5GB (Re: UI: Syste: C: (Syste: Windc Una 300h: 100: 128M: 291GB NTF: 524MB Windc Wint: D: (Data) ABR 8.81TB Y: (Backup) 1.81TB exFAT	ABR 187GB F: (NTFS-Test) G: (FAT32-TEST) H: (FAT-TEST) Unalling 2 92GB NTFS 2 02GB FAT32 2 GB FAT36 932ME SPT 3006 100 128M 291GB NTF 524MB 1MB 450ME 450N 638 5GB NTF 1. ABR 3006 Y: (Backup) 1.81TB 1.81TB ex/FAT 1.81TB ex/FAT 1.81TB 1.81T

5 Click the Next button to continue file restore on the Image Object Selection panel.

- 6 Verify that the information on the Processing panel is correct and click the Start button You may also create a <u>script</u> for this action. Click the Script to Clipboard button and paste the script to any text-processing utility.
- > R-Drive Image will start restoring the files from the image file to the selected destination.

If the files already exist in the specified folder, **The file exists** message will appear. Click the necessary button to resume the restore operation.



When the image is restored, the Files restored successfully message will appear.



The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain <u>R-Drive Image Contact Information and Technical Support</u>

⁴⁶

2.5 Copy a Disk to a Disk

Attention: All previous data on the destination disk will be completely deleted

R-Drive Image can smoothly copy/restore drives/images onto larger drives or drives of the same size. Moreover, it can shrink/extend partitions with <u>some file systems</u> if need be.

Whether **R-Drive Image** can copy/restore data onto a smaller drive depends on the last cluster in the file system of the source drive/image. It cannot do this if the data blocks are physically located outside the boundaries of the smaller drive, even when the total size of the file system is smaller than the drive size. Try to defragment the source drive then.

To copy an entire disk or its part to another one:

1 Click Copy Disk on the Action Selection panel.

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress. Then the **Object Selection** panel will show the configuration.

■ More information...



Main menu	Refresh		ormat Delete		Wipe	Jndo Copy opt	ions
Source	1						
	GPT 931.5GB	(Rec U U Syst 300M 100N 128M			Wind Win 450M 450		Una 1.691
-	MBR 298GB	E: (Test1-NTFS) 149.8GB NTFS			est2-NTFS) 2GB NTFS		
	MBR 298GB					Unallo 298GB	cated
Destinatio	n						
	GPT 931.5GB		C: (Syster Wir 291GB N 524		Wind Wind 450M 450		Una 1.691
	MBR 298GB	E: (Test1-NTFS) 149.8GB NTFS			est2-NTFS) 2GB NTFS		:
	MBR	(Test1-NTFS)		:		Unallo 148.2G	cated
5	298GB	\$ 149.8GB NTFS		•		140.20	

2 Select the disk object on the **Source:** on the **Object Selection** panel, select a destination, and click the Next button

You may select only one object at a time, and you need to specify the destination to proceed further. Use the **Refresh** button if your computer disk configuration has been changed (when you connect a USB disk, for example).

■ More information...

If the destination is smaller than the selected object, **R-Drive Image** won't allow you to select this object and you will need to select another destination.

If you select several partitions as the destination, **R-Drive Image** will show the **You have selected several partitions...** message. If you click the **OK** button, all those partitions will be deleted and data will be restored on that free space.

Note: Although **R-Drive Image** shows unallocated space instead of the deleted partitions, the partitions and their data will be actually deleted only when **R-Drive Image** starts copying the data.

Selected Object and Destination

Source									
	GPT 931.5GB	(Rec Selecter 300M 1	d Object on th			Wind 50M	Wind 450M	D: (Data) 638.5GB NT	Una 1.691
	MBR 298GB	E: (Test1-NTFS) 149.8GB NTFS				SB NTF			
	MBR 298GB				Disk	Letter	Capacity	/File System/L 298GB	abel
De Hard	•			Partitio	ns/Logi	cal Disk	s/Unalloc	ated Space]
	GPT 931.5GB		C: (Syst) 291GB N	Wind 524M	Una 1MB	Wind 450M	Wir 4501	D: (Data) 638.5GB NT	Una 1.691
	MBR 298GB	E: (Test1-NTFS)	d Destination			SB NTF			:
	MBR 298GB	(Test1-NTFS) 149.8GB NTFS		:				Unallo 148.2GE	

S.M.A.R.T. warning for a hard drive

If a hard drive has S.M.A.R.T. warnings, a color mark will appear on its left-top corner. Dragging the cursor over the drive will show a tooltip explaining that warning.



Warnings will also appear in confirming e-mails for scheduled actions.

<u>S.M.A.R.T.</u> (Self-Monitoring, Analysis and Reporting Technology) is a technology widely-used in hard drives and solid-state devices that monitors their reliability conditions to predict possible hardware failures.

If you try to copy data to or from a system, or other disk locked by the system or other application, the **Disk not locked** message will appear.

- To continue copying you may:
- If you copy data to or from your <u>system disk</u>, select Restart computer (recommended) to continue restoring the data in the **R-Drive Image** startup mode. Read carefully the <u>Disk to Disk Copy Using</u> the <u>Startup Disks</u> topic before you proceed.
- If you copy data to a disk locked by other low-level disk software (including Windows internal services), stop this software and select Retry to lock the disk once again.
- You may also try to unlock the disk by selecting Force Windows to unlock the disk (not recommended). If Windows fails to unlock the disk, the Disk not locked message will appear again. You will need to stop the software locking the disk manually or select Restart computer (recommended) to continue copying the data in the **R-Drive Image** startup mode.

Note: Use this option cautiously, because it may cause unpredictable results including system crash and data loss.

You may select all o	object	s on a	hard drive by clic	king the hard	drive icon.		GPT 931.5GB	. It will show the
marked hard drive.		MBR 7.87GB	F: (NTFS-Test) 2.92GB NTFS	G: (FAT32-TEST) 2.02GB FAT32	H: (FAT-TEST) 2GB FAT16	Unall 932MB		

3 Specify copy parameters on the **Restore/Copy Parameters** panel and click the Next button

■ Restore parameters

You may change create/copy/modify parameters on the **Create partition, Copy partition**, or **Modify partition** panel. Click the **Create / Copy Options / Modify** button, respectively.

■Create/Copy Partition Parameters

PartitioningThe type of partitioning scheme. See Support for Various Disk PartitionschemeSchemes and File Systemsfor the list of supported partition types.

Partition type	Primary (Active)/ Primary/Logical You may specify the type of the partition to be restored. Do not change this setting unless you have serious reasons to do so.
File system	You may select the file system for the partition to be restored.
Allocation unit size	It is the size of a disk block, that is, the minimum allocatable disk space. (only on the Create partition panel.)
Volume label	Label of this volume. You can change it.
Drive letter	Select the letter that will be assigned to the partition. You may select "Do not connect" if you do not want to connect this partition to your system. Or "Do not modify" it you do not want to change the drive letter.
Partition size	Minimum/maximum size of the partition to be restored.
Free space before	You may specify the size of free space that will be left on the hard drive before the beginning of the partition.
Partition size	You may specify the size of the partition to be restored. Should be between the minimum and maximum partition size.
Free space after	You may specify the size of free space that will be left on the hard drive after the end of the partition.
	You may visually adjust the location and size of the object to be restored. All other restore options will be adjusted accordingly. Also, when you adjust one or several restore options directly, these changes will be shown visually. Green marks available space. See <u>Support for Various Disk Partition Schemes and File Systems</u> for the list of supported file systems.

■ To copy data from an entire hard drive to another hard drive:

The Restore/Copy Parameters panel will be different with different sets of options:



	regardless of its partitioning method. Can be used if other methods create a non-bootable disk due to incorrect detection of drive's geometry or non-
	standard loader.
	Drawback: partition sizes cannot be changed.
Copy all partitions	R-Drive Image copies all partitions to their original places. If R-Drive
onto original places	Image detects the drive's geometry correctly, and there is no non-standard
	loader, it makes the same result as during Raw disk copy.
Realign partitions	R-Drive Image will copy the partitions on the disk with a 512KB alignment.
	This is very useful for SSD and advanced-formatted disks. If there are empty
	(non-used) spaces between partitions, those spaces will be removed taking
	into account the alignment.
Expand/Shrink	If there are empty (not-used) places between the partitions or they occupy
partition to whole	less or more space than the target drive, R-Drive Image proportionally
disk	expands/shrinks them to occupy the entire target drive. Otherwise it is similar
	to Copy all partitions onto original places.
Fixed active partition	R-Drive Image preserves the original offset/size of the active partition (in
	case the loader has links to it).
	Diele Destition Colomba and File Containing Constants

See Support for Various Disk Partition Schemes and File Systems for details.

When you copy a system disk, a disk signature collision may occur. In this case, the **Copy options** panel will inform you about this. You may specify the way to resolve this collision on the **Disk Signature Collision** panel.



Disk Signature Collisio	n Resolving
Same signature for both disk	R-Drive Image will create an identical copy of the source disk with the same signature. To avoid disk signature collision, you'll have to disconnect one of the disks and restart the computer, if necessary. Use this mode if you clone a <u>system disk</u> for another computer or only the target disk will be used in yours.

Different signature on the target disk.	R-Drive Image will write another disk signature to the target disk. Don't use this mode if you clone a system disk, Windows won't start from it. To get access to the target disk after cloning, you'll have to restart the computer or re-connect it if it's an external USB disk.
Change the disk signature on the source disk.	R-Drive Image will change the disk signature on the source disk. Use this mode if you want to start Windows from the target disk, but be warned: the computer won't start from the source disk anymore.

- 4 Verify that the information on the Processing panel is correct and click the Start button You may also create a <u>script</u> for this action. Click the Script to Clipboard button and paste the script to any text-processing utility
- > R-Drive Image will start copying the data from the source to the selected destination place.

When the data is copied, the **Object copied successfully** message will appear.

If some other program (like a file manager) is accessing the partition on which the data is to be restored, the **Cannot lock the disk** message will appear. Close this program or make it stop accessing the partition.

If you copy an entire hard drive to another hard drive, two absolutely identical hard drive will appear in your system. That will confuse it and may cause unpredictable results. To prevent that, a **Disk copied successfully** message will appear. You may turn your system off to disconnect one of the disks, or restart it to disable one of the disk in the BIOS of your system. Under Windows 95/98/Millennium, the target disk will not appear until system restart even if you decide to click the **Cancel** button.



R-Drive Image		
0	Disk copied successfully. You may disconnect one of the disks to prevent	your system from confusion.

■Bad Sectors

When **R-Drive Image** encounters a bad sector, the **IO Error** message will appear. You may either cancel the current action or fill the bad sectors with zeros.

IO Error Options

Abort	Click this button to cancel the action
Retry	Click this button to try to read the bad sectors once again
Ignore	Click this button to skip this error and fill the bad sectors with zeros
Ignore All	Click this button to skip all errors and fill the bad sectors with zeros

R-Dri	ive Image				\times
\bigotimes	Error reading The request fa				
		Retry	lanore	Ignore All	Abort

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

2.6 Partition Manager

R-Drive Image has a built-in partition manager. It can perform the following disk operations:

<u>All objects</u> Object properties can be shown.

 Entire
 A disk partitioning scheme can be changed. An entire hard drive can be cleared or wiped.

 hard
 drives:

 Existing
 An existing partition can be modified, formatted, deleted, or wiped

 partitions:
 Unallocate

 A new partition can be created, or free space
 can be wiped

All commands can be invoked either by clicking the respective button on the panel, or by right-clicking the object and selecting the respective menu item.

All objects

To view object properties:

1 Click Partition Manager on the Action Selection panel.

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

2 Right-click the object and select Disk or Partition properties on the shortcut menu.



> R-Drive Image will show object properties.

		HDD properties
R-Drive Imag	ge - Partition Manager	· · · · · · · · · · · · · · · · · ·
Local disk	s	
	GPT ULEFIS Clear HDD Erase as MBR ✓ Wipe disk ··· Disk properties	System C: (System) Unallo MB 237.3GE NTFS (GPT) 1008MB NTFS Unallo System (System) Windows Recover Mindows Recover 16MB 1111.1GB NTFS (GPT) 508MB NTFS
R-Drive Imag		Show/hide disks 0 Operation(s) Cancel all Next Partition properties - - - Image: Image
Local dis	C: System - properties Drive Type Name Mount Points Size Partition Offset Partition Size	Partition allo Basic data partition allo C:\ 237.3GB (497797120 sec) 117MB (239616 sec) 1MB 237.3GB (497797120 sec) 3
4	Partition Number GPT Partition GUID GPT Partition QUID GPT Partition Name v NTFS Information Cluster Size MFT Record Size MFT Position MFT Mirror Position Index Block Size Sector Size Volume Size	daf04b8f-aece-4176-9e12-25271c9682d5 Data Partition, ebd0a0a2-b9e5-4433-87c0-68b6b72699c7 Basic data partition 4KB (8 sec) 1KB 3GB (6291456 sec)
4	GPT Partition GUID GPT Type GUID GPT Partition Name V NTFS Information Cluster Size MFT Record Size MFT Position MFT Mirror Position Index Block Size Sector Size	daf04b8f-aece-4176-9e12-25271c9682d5 Data Partition, ebd0a0a2-b9e5-4433-87c0-68b6b72699c7 Basic data partition 4KB (8 sec) 1KB 3GB (6291456 sec) n 8KB (16 sec) 4KB 512B

Entire hard drive

There are two methods to change the disk partitioning scheme:

Convert (GPT/MBR)	to The existing disk partitioning scheme will be converted into a new one, the old partitions and their content will remain intact.
Erase (GPT/MBR)	The existing disk partitioning scheme will be completely erased and a new one with empty space created. All old partitions and their content will be deleted and can be recovered, if that's possible, only by using special <u>data recovery software</u> .

54

Not all methods may always be available for all cases. **R-Drive Image** determines which ones can be made and show them in its menu.

To change the drive partitioning scheme (MBR/GPT):

1 Click Partition Manager on the Action Selection panel.

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

2 Right-click hard drive and select the necessary action to change drive partitioning scheme on the shortcut menu.



- 3 Select another disk action on the **Object Selection** panel, if necessary.
- 4 Verify that the information on the **Processing** panel is correct and click the Start button
- > R-Drive Image will convert the drive to the selected partitioning scheme.

To clear an entire hard drive:

1 Click Partition Manager on the **Action Selection** panel.

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

2 Select the hard drive and click the Clear HDD button on the **Object Selection** panel. or right-click the drive and select **Clear HDD** in the shortcut menu.

-	GPT 238.4GB	UEFIS 100MB FA		C: (System) 237.3GB NTFS	s (GPT)	:	Windows Re : 1008MB NTFS :	Unallo 8.31ME
	MBR 931.5GB	D: (Data) 931.5GB NTF	S					
(GPT	DD DC	st) GPT)					
	🛃 Erase as 🔦 Wipe dis							
	··· Disk pro	perties						

3 Select another disk action on the **Object Selection** panel, if necessary..

-	GPT 238.4GB	UEFI S 100MB FA	System 16MB	C: (System 237.3GB NT			B NTFS	Unallo 8.31ME
	MBR 931.5GB	D: (Data) 931.5GB NTF	S					
	GPT 232.8GB			👲 V	Create partition Vipe unallocated Inallocated prope	8	Unal 232.8	GB

If not, click the **Next** button

- 4 Verify that the information on the **Processing** panel is correct and click the Start button
- > R-Drive Image will remove all objects on the disk.

To wipe an entire hard drive:

Data wiping is necessary only for files stored on conventional hard drives. Data stored on SSD storage devices cannot be effectively wiped out due to the principles of operation of these devices.

1 Click Partition Manager on the Action Selection panel

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

- 2 Select the hard drive and click the Wipe button on the Object Selection panel or right-click the drive and select Wipe disk in the shortcut menu.
- 3 Select the necessary wiping algorithm on the Wipe an object panel and click the OK button..

ocal disks	😢 Wipe an object X
GPT 238.4GB	You have selected to wipe the following disk: Unallowing TOSHIBA MK2529GSG 232.8GB
MBR 931.5GB	All existing data on this disk will be overwritten and lost! Do you want to continue?
GPT 232.86B	Wiping algorithm Zeros (1 pass. Fast.) Pseudo-random (1 pass. Fast.) DoD 5220.22-M (3 passes. Slow. Secure.) DoD 5200.28-STD (7 passes. Very slow. Very secure.) Bruce Schneier (7 passes. Very slow. Very secure.) Peter Gutmann (35 passes. Horribly slow. Military-level secure.)
	Ok Cancel

You may read more about wiping algorithms on the **Disk Wiping Algorithms help page**.

- 4 Select another disk action on the Object Selection panel, if necessary. If not, click the Next button
- 5 Verify that the information on the **Processing** panel is correct and click the Start button
- > R-Drive Image will remove all objects on the disk and wipe it.

Existing partition

To modify/format/delete/wipe an existing partition:

1 Click Partition Manager on the Action Selection panel

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

2 Select the partition and click the Modify/Format//Delete/Wipe button on the **Object Selection** panel and specify the required parameters

Modify panel	Modify parameters
Format panel	Format options
Delete button	Deletes partition
Wipe panel	Wipe algorithms

then click the OK button

© 2025 R-Tools Technology Inc.

- 3 Verify that the information on the **Processing** panel is correct and click the Start button
- > R-Drive Image will perform the specified action.

Unallocated space

To create a new partition on an allocated space:

1 Click Partition Manager on the Action Selection panel

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

- 2 Select the unallocated space, click the Create button on the **Object Selection** panel, and specify the required parameters on the **Create partition** panel, then click the OK button
- 3 Verify that the information on the **Processing** panel is correct and click the Start button
- > R-Drive Image will create a new partition.

To wipe an unallocated space:

1 Click Partition Manager on the Action Selection panel

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress.

- 2 Select the unallocated space, click the Wipe button on the **Object Selection** panel, and specify the <u>wiping algorithms</u> on the **Wipe partition** panel, then click the OK button
- 3 Verify that the information on the **Processing** panel is correct and click the Start button
- > R-Drive Image will wipe the unallocated space.

2.7 Mount an Image as a Virtual Logical Disk

Note: You can mount <u>images</u> only as **read-only** disks. See <u>Support for Various Disk Partition Schemes</u> and File Systems for the list of supported file systems.

To mount an image as a Virtual Logical Disk:

1 Click Mount an Image as a Virtual Logical Disk on the Action Selection panel.

R-Drive Image will show you the **Choose image to mount drive(s) from** panel with the disks/folders structure.

2 Select the file with the image on the **Choose image to mount drive(s) from** panel and click the Next button

When you click the file, you may view its content on the right pane.

■ More information...

Objects in Image Files

Image with one logical disk	Source: D:VMAGES\RDI\F-in Disk Letter/Label/Disk Size/File Data on the disk ate/time: 03-23-21 MBR E: (NTFS-Test) Hard Drive Properties VDC WD75AA-00BAA0 10.09K11 Total space 7.02GB Empty space on the disk
Image with two logical disks on one hard drive	Source: D:WAGES Disk Letter/Label/Disk Size/File System Image date/time: 03-23-24 MBR 7.02GB E: (NTF5-Test) 2.92GB NTFS 2.92GB NTFS 2.92GB (Used space 1.53GB) Logical Partition
Image with two logical disks on two hard drives	Source: D:\IMAGES\RDI\Two-image.rdr Image date/time: 03-23-21 Image date/time: 03-23-21 03-23-21 03-23-21 Image date/time: 03-23-21 2 2 Image date/time: 03-23-21 2 2 Image date/time: 03-23-21 2 2
may select all objects on a hard drive by	clicking the hard drive icon. GPT 931.5GB G: (FAT32-TEST) 2006 FAT32 2006 FAT32 2007

marked hard drive. You may also mount the disk from Windows explorer by right-clicking the required image file with the .rdr extension and selecting Mount as Virtual Disk from the shortcut menu.

2 92GB NTES

If you select an image with incremental or differential data backup, select the date and time of image creation and click the Next button.

2.02GB FAT32

2GB FAT16

If the image file is password-protected, the **Password prompt...** message will appear. Enter the password and click the **OK** button.

Select the object in the image file on the Choose image to mount panel, select a drive letter, and click 3 the Next button



You may select only one object at a time, and you need to specify its drive letter to proceed further.

■ More information...

Total Image Size	Disk Letter/Label/Capacity/ File System	Partitions/Logical Disks/Unallocated Space
MBR 7.02GB 2.92GB WDC WD75AA-00BAA0 10.02		F: 2.02GB FAT32
Total space 7.02GB Partition table MBR	Selected	Object

- 4 Verify that the information on the Processing panel is correct and click the Start button You may also create a <u>script</u> for this action. Click the Script to Clipboard button and paste the script to any text-processing utility
- R-Drive Image will start mounting the selected object as a virtual logical disk. When the disk is mounted, the Virtual disk(s) mounted successfully message will appear.



Mounting images on devices with removable storage

You cannot mount a split image if its files are stored on separate removable disks. However you can mount such image if you copy all the files into one folder on a hard disk.

Note: While **R-Drive Image** is mounting an image, Windows itself may install additional software required to run the virtual logical disks correctly. In this case follow Windows on-screen instructions.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

2.8 Unmount Virtual Logical Disks

To unmount Virtual Logical Disks:

1 Click Unmount Virtual Logical Disks on the Action Selection panel.

R-Drive Image will show you the list of virtual disks on the Choose drive(s) to umount them panel.

Main menu		Select drive(s) to unmount them		•••
Name	~	Туре	Size	Label	
√ H:		FAT16	1.99GB	FAT-TEST	
G:		FAT32	2.93GB	FAT32-TEST	
▼ F:		NTFS	2.92GB	NTFS-Test	
Select all	Selec	t none			

■ More information...

Mounted Virtual Logical Disks

Name	⇒ Туре	Size	Label
K:	FAT16	1.99GB	FAT-TEST
G:	FAT32	2.02GB	FAT32-TEST
F :	NTFS	2.92GB	NTFS-Test

2 Mark the disks on the **Choose drive(s) to umount them** panel and click the Next button *More information...*

Marked Mounted	Virtual Logical Disks

Name	⇒ Туре	Size	Label
K:	FAT	T16 1.99GB	FAT-TEST
G:	FAT	T32 2.02GB	FAT32-TEST
F :	NT	FS 2.92GB	NTFS-Test

- 3 Verify that the information on the Processing panel is correct and click the Start button You may also create a <u>script</u> for this action. Click the Script to Clipboard button and paste the script to any text-processing utility
- > R-Drive Image will start unmounting the selected virtual logical disks

When the disks are unmounted, the Virtual disk(s) unmounted successfully. message will appear.



The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain <u>R-Drive Image Contact Information and Technical Support</u>

2.9 Check an Image File

To check an image file:

1 Click Check an Image File on the Action Selection panel.

R-Drive Image will show you the **Choose image to check integrity** panel with the disks/folder structure.

2 Select the file with the image on the Choose image to check integrity panel and click the Next button When you click the file, you may view its content in the right pane. You may also check either an individual file or all files in the folder/rotation. Files in the subfolder will not be checked.

If there is a split image or a main image file and several <u>incremental/differential</u> ones are selected, **R-Drive Image** will check all image files of the selected image.

Objects in Image Files	
Image with one logical disk	Source: D:\IMAGES\RDI\F-im Disk Letter/Label/Disk Size/File Data on the disk ate/time: 03-23-2 MBR 7.02GB E: (NTFS-Test) 7.02GB Hard Drive Properties WDC WD75AA-00BAA0 10.09K11 Total space 7.02GB Partition table MBR Empty space on the disk
Image with two logical disks on one hard drive	Source: D:WMAGES Disk Letter/Label/Disk Size/File System Image date/time: 03-23-20 MBR 7.02GB E: (NTF S-Test) 2.92GB NTFS 2.92GB NTFS 2.92GB VIFS 2.92
Image with two logical disks on two hard drives	Source: D:\IMAGES\RDI\Two-image.rdr Image date/time: 03-23-21

If the image file is password-protected, the **Password prompt...** message will appear. Enter the password and click the **OK** button.

3 Verify that the information on the **Processing** panel is correct and click the Start button

You may also create a <u>script</u> for this action. Click the **Script to Clipboard** button and paste the script to any text-processing utility

> R-Drive Image will start checking the data in the image file.

When the image is checked, the **Object checked successfully** message will appear if the image file is good. If it is corrupted, **R-Drive Image** will show the **Image corrupted** message.



■ More information...

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

III Advanced File Filtering

3.1 Filters

Filters can be used if it's necessary to show only files of certain types. For example, the required types are *.jpg and *.docx. Then such files can be searched for and marked accordingly. Complex filters can be created using the <u>Batch mode</u>.

Note that filters do not mark files, they filter out all other file types making **R-Drive Image** show only files matching the filter(s). File marking affects only those files that are matching the applied filters.

A filter can be specified on the Search window. The example below shows how this filter affects files that **R**-**Drive Image** shows on the **Select files...** panel.

Filt	er	spe	cifie	d
------	----	-----	-------	---

ain menu Sel	ect file	es for	new image			
ame	Туре	Size	Last modified		0	0
✓ □ Documents	Folder					
DOCXFile_500kb.docx	File	340.	*.jpg; *.docx			
easychair.docx	File	2.18		Case-sensitive	-	
file-sample-docx_100kB.docx	File	122.		Case-sensitive	-	
file-sample-docx_1MB.docx	File	1.01		All dates 🔻	-	
file-sample-docx_500kB.docx	File	565.				
MyDoc1.docx	File	13.5		V Use a	is filter	ш
Test_Arch.zip	File	3.39				,
✓ □ Music	Folder		12/22/21 9:16 PM		19	1
johnny-cash-cry-cry-cry.mp3	File	3.37MB	4/28/16 9:36 PM			
johnny-cash-san-quentin.mp3	File	3.61MB	4/28/16 9:32 PM			
Johnny_Cash-I_Got_Stripes.mp3	File	2.86MB	4/28/16 9:38 PM			
Johnny_Cash-Man_in_Black.mp3	File	6.61MB	4/28/16 9:29 PM			
Johnny_Cash-THE_GENERAL_LEE.mp3	File	3.35MB	4/28/16 9:22 PM			
johnny_cash_ghost_riders_in_the_sky.mp3	File	3.43MB	4/28/16 9:35 PM			
✓ □ Photos	Folder		12/22/21 9:16 PM			
🗌 🌞 MyPhoto6JPG	File	1.07MB	4/29/09 9:54 AM			
🗌 🌞 MyPhoto7JPG	File	842.7KB	4/29/09 9:55 AM			
🗌 🌞 MyPhoto8JPG	File	997.9KB	4/29/09 9:55 AM			
🗌 🌞 MyPhoto9JPG	File	3.36MB	4/29/09 9:56 AM			
> System Volume Information	Folder		11/19/21 9:01 PM			

After this field has been applied, **R-Drive Image** will show only *.jpg and *.docx files.

Filter applied

ain menu	Select file	s for	new image			
ame	Туре	Size	Last modified	1	0	^
D: (Data, NTFS, 638.5GB)	Volume		*.jpg; *.docx			וה
	Folder	232.	JP 91 Laborn			
Documents	Folder			Case-sensitive		4
DOCXFile 500kb.docx	File	340.			X	
easychair.docx		2.18		All dates		
file-sample-docx 100kB.docx	File		10/19/18 6:22 PM			
file-sample-docx 1MB.docx	File		10/19/18 6:21 PM			- 1
file-sample-docx 500kB.docx	File		10/19/18 6:23 PM			- 1
MyDoc1.docx	File	13.5MB	10/19/18 7:04 PM			
Music	Folder		12/22/21 9:16 PM			- 1
Y D Photos	Folder		12/22/21 9:16 PM			
🗌 🌞 MyPhoto6JPG	File	1.07MB	4/29/09 9:54 AM			- 1
🗌 🌪 MyPhoto7JPG	File	842.7KB	4/29/09 9:55 AM			
🗌 🌞 MyPhoto8JPG	File	997.9KB	4/29/09 9:55 AM			
🗌 🌞 MyPhoto9.JPG	File	3.36MB	4/29/09 9:56 AM			
>] System Volume Information	Folder		11/19/21 9:01 PM			
🛩 🔲 📕 Video	Folder		11/19/21 8:30 PM			
🛩 🔲 📜 Avi	Folder		11/19/21 8:27 PM			
Cops_Season_24_HDTV	Folder		11/19/21 8:28 PM			
Elv	Folder		11/19/21 8:28 PM			~

Note that folders that contain no *.jpg or *.docx files are show as empty.

Applied filters can be edited and saved to load them later.

Filter being edited

ain menu	Select file	es for	new image			•
ame	Туре	Size	Last modified	100 M	0	
✓ □ Documents	Folder	ſ				٦
DOCXFile_500kb.docx	File	340.	*.jpg; *.docx		- Ph	I
easychair.docx	File	2.18		Case-sensitive		J
file-sample-docx_100kB.docx	File	122.		- Ouse-sensitive	~	
file-sample-docx_1MB.docx	File	1.01		All dates 🔻	^	
file-sample-docx_500kB.docx	File	565.				
MyDoc1.docx	File	13.5MB	10/19/18 7:04 PM			
🗌 📒 Music	Folder		12/22/21 9:16 PM			
✓ ☐ Photos	Folder		12/22/21 9:16 PM			
🗌 🏪 MyPhoto6JPG	File	1.07MB	4/29/09 9:54 AM			
🗌 🌞 MyPhoto7JPG	File	842.7KB	4/29/09 9:55 AM			
🗌 🌪 MyPhoto8.JPG	File	997.9KB	4/29/09 9:55 AM			
🗌 🌞 MyPhoto9JPG	File	3.36MB	4/29/09 9:56 AM			
> System Volume Information	Folder		11/19/21 9:01 PM			
✓ □	Folder		11/19/21 8:30 PM			
🗸 🗌 📕 Avi	Folder		11/19/21 8:27 PM			
> Cops_Season_24_HDTV	Folder		11/19/21 8:28 PM			
Elv	Folder		11/19/21 8:28 PM			
🗌 📕 M4V	Folder		11/19/21 8:28 PM			
🗌 📕 Mov	Folder		11/19/21 8:29 PM			
MP4	Folder		11/19/21 8:30 PM			

Folders and their files may be marked/unmarked manually changing folder's marks accordingly. There are four mark types for folders:

 ✓ □ Documents □ ♥ My.Report_1.doc □ ♥ My.Report_2.doc □ ♥ My.Report_3.doc □ ♥ Report_Instructions.doc 	No files or folder matching the selection recursively have been marked in the folder.
✓ ✓	No files or folders matching the selection have been found, but they may appear in the future.
 ▼ ■ Documents ■ My_Report_1.doc ▼ ■ My_Report_2.doc ▼ ■ My_Report_3.doc ■ Report_Instructions.doc 	Some files match the selection and marked in this folder.
 ✓ MyPhoto ✓ MyPhoto1.jpg ✓ MyPhoto2.jpg ✓ MyPhoto3.jpg ✓ MyPhoto3.jpg ✓ MyPhoto5.jpg ✓ MyPhoto5.JPG ✓ MyPhoto7.JPG ✓ MyPhoto7.JPG 	The folder and all its files and folders recursively match the selection and are marked in this folder.

3.2 Batch Mode

Batch mode is a way to apply very complex sets of <u>file filters</u> for automated search for folders and files and marking them for backup or restore. Such sets can be saved for future use and loaded when necessary.

The simple way to specify such a set is to mark all necessary files and folders manually on the **Select Files to Restore** panel and click the **Batch mode** button. Depending whether files or folders are on a disk or in a image, their paths may look slightly different.

Select Files to Restore panel (image)

29 files selected - 283.3MB					~
me	Туре	Size	Last modified		O,
🔳 🧼 FAT32-TEST, FAT32	Volume	2.94GB			
> SRECYCLE.BIN	Folder		3/31/11 11:57 PM		
> 🗌 📙 .fseventsd	Folder		12/5/12 11:50 PM		
>Spotlight-V100	Folder		12/5/12 11:50 PM		
> 🗌 📕 . Trashes	Folder		12/5/12 11:50 PM		
🛩 🔽 📕 Files to Delete	Folder	208KB	7/1/05 4:06 AM		
File_2.pst	File	48KB	5/12/06 3:44 AM		
Outlook_recovered_by_R_Mail.pst	File	160KB	5/14/06 8:25 PM		
✓ ■ Files to Recover	Folder	196.9MB	7/1/05 3:50 AM		
🗌 🌞 IMG_6001.JPG	File	640.8KB	5/17/10 9:17 PM		
V 🌪 IMG_6002.JPG	File	915.1KB	5/17/10 9:18 PM		
🗌 🐐 IMG_6003.JPG	File	1.12MB	5/17/10 9:18 PM		
V R test1.arc	File	98MB	3/22/05 2:22 AM		
V R test3.arc	File	98MB	3/22/05 2:23 AM		
Wipe Test 2.doc	File	22KB	11/17/03 4:13 AM		
Wipe Test 3.doc	File	22KB	11/17/03 4:13 AM		
Wipe Test 6.doc	File		11/17/03 4:14 AM		
	Folder		12/5/12 12:53 AM		
Zerl Orff CarminaBurana			12/5/12 12:53 AM		
> Elton_John	Folder	0010110	12/5/12 12:55 AM		
Manu_Chao	Folder	25 2MP	12/5/12 12:53 AM		
> Arley	Folder	35,5110	12/5/12 12:54 AM		
			7/00/05 100 11		
Batch mode Options				Ok	Cance
Enter file filter specifications. Wildcards can be used iles to Delete" iles to RecoverlMG_6002.JPG" -file iles to Recoveritest1.arc" -file iles to Recoveritest3.arc" -file uisciCarl Orff CarminaBurana" usic/Carl Orff CarminaBurana				×	

0						
Main menu Se	elect file	es for	new image			
Name	Туре	Size	Last modified		C	2
 E: (New Volume, NTFS, 232.8GB) 	Volume	232.8GB				
> SRECYCLE.BIN	Folder		11/19/21 8:40 PM			
✓ ■ Documents	Folder	12.7MB	11/19/21 8:26 PM			
✓ ✓	Folder	9.61MB	11/19/21 8:26 PM			
> 🔽 📙 Calc-files	Folder	485.7KB	11/19/21 8:26 PM			
> 🔽 📕 Microsoft-files	Folder	5.31MB	11/19/21 8:26 PM			
> 🔽 📙 Writer-files	Folder	3.81MB	11/19/21 8:26 PM			
DS_Store	File	6KB	4/6/20 11:34 PM			
🌱 🔳 📙 pdf	Folder	3.10MB	11/19/21 8:26 PM			
🗌 🧰 file-sample-pdf_100kB.pdf	File	258.8KB	10/19/18 6:31 PM			
🗹 🧰 file-sample-pdf_1MB.pdf	File	1.15MB	10/19/18 6:28 PM			
🗹 🧰 file-sample-pdf_500kB.pdf	File		10/19/18 6:30 PM			
large_pdf.pdf	File		10/19/18 7:05 PM			
PDFFile_500kb.pdf	File		10/19/18 6:49 PM			
easychair.docx	File		6/22/18 6:08 PM			
Mac_mini_Early2009_UG.pdf	File		6/26/13 3:00 PM			
Mac_mini_Intel-based_Mid2007_UserGu			6/26/13 2:58 PM			
Mac_mini_Intel_User_Guide.pdf	File		6/26/13 2:56 PM			
MyDoc1.docx	File		10/19/18 7:04 PM			
 Test_Arch.zip Music 	File Folder	3.39MB	8/9/16 1:43 PM 11/19/21 8:26 PM			
Sack Batch mode				53 files sel 2.33GB	lected	Nex
Enter file filter specifications. Wildcards can be used				×		
:\Documents\OpenOffice-files :\Documents\pdf\file-sample-pdf 1MB.pdf -fi	le -file					

Select Files to Restore panel (image)

Sets are stored in the plain text format (the rdf file extension), and can be composed or edited in the **Batch** window or in any text editor capable of exporting text in this format. Below are the rules that should be followed while writing filter sets.

Every filter set consists of strings each representing a single filter. They are executed in the top to bottom order. If, for example, files are to be marked according to the first string, but unmarked according to the seventh string, they will eventually be unmarked.

Filters can include file names, file paths, and wildcards, like * and ?. They can also have some keys that modify their impact on the search results. If a path in the filter has a space in it, it should be enclosed in quotation marks.

Switches that modify file filters:

-no	This filter unmarks the folders or files it's applied to. I.g., C:\Photos*.jpg -no unmarks all jpg files
	in the C:\Photos folder.

68	R-Drive	Image	Manual
----	----------------	-------	--------

-	This filter is applied to files. May be shorten to -fino-file negates the filter, making it applied
file	not to files.
-dir	This filter is applied to folders. May be shorten to -dno-dir negates the filter, making it applied
	not to folders
-	This filter is case-sensitive. May be shorten to -cno-case makes the filter case-insensitive.
case	
-	This filter is applied to the current folder, not to its subfolders. May be shorten to -1no-local
loca	negates the filter making it applied to the folder and its subfolders.
1	
-	This filter is applied to the current folder and its subfolders. May be shorten to -rno-recursive
recu	negates the filter making it applied only to the folder.
rsiv	
е	
-	The initial date from which files will be marked. It may be either in the form of exact date: -
from	from: 20210101, or relative to the current date: -from:now-3week. Has no effect on folders. May
:	be shorten to -fr.
-to:	The final date to which files will be marked. It may be either in the form of exact date: -
	to:20211201, or relative to the current date: -to:now-1week. Has no effect on folders.

An exact date may be specified as a local time YearMonthDayHour24MinSec, or as a UTC time YearMonthDayHour24MinSecU.

Provided that there's no switches in the filter (i.g., -recursive), a file path in the file filter ending with a path separator is applied to the files in the folder and its subfolders. If not, only to the files in the folder.

The file filter $D: \forall E \in W$ will be applied to the files in the $D: \forall E \in V$.

The file filter D:\Files will be applied to the files in the D:\Files and in its subfolders.

Below is an example of filters recursively applied to files in the D:\Files\Pictures folder and its subfolders.

```
D:\Files\Pictures
D:\Files\Pictures\My_Photo -no
D:\Files\Pictures\My Photo\Home?????.jpg
```

Line 1: All files will be marked in the D:\Files\Pictures folder and its subfolders will be marked.

Line 2. All files in the D:\Files\Pictures\My Photo folder will be unmarked.

Line 3: Files named like Home210312.jpg in the folder D:\Files\Pictures\My Photo\ will be marked.

An importance notice about marking a folder.

If you mark all files in the folder but not the folder itself, its mark will be the following:

The folder was not marked)



The batch will look like:
Enter file filter specifications. Wildcards can be used	>
Oocuments\My_Report_1.doc -file	
ocuments\My_Report_2.doc -file	
Ocuments\My_Report_3.doc -file	
ocuments\Report_Instructions.doc -file	
Save 🗟 Load	Ok Cancel

And the folder will be restored only if there are marked files/folders in it. If you mark the folder, its mark will be the following:

The folder was marked)



The batch will look like:

R Enter file filter specifications. Wildcards can be used	×
Documents	
Save	Ok Cancel

And the folder will always be restored regardless whether there are marked files/folders in it.

IV RAIDs, and Various Disk and Volume Managers

R-Drive Image supports various RAIDs, and Disk/Volume Managers.

- Hardware RAIDs
- <u>BitLocker Drive Encryption</u>
- Windows Software RAIDs, Spanned, and Other Volumes
- <u>Windows Storage Spaces</u>
- Apple RAIDs
- <u>Apple CoreStorage/File Vault/Fusion Drive Volumes</u>
- Linux mdadm RAIDs
- Linux Logical Volume Manager Volumes

The **Disk Actions** chapter explains disk actions such as:

- Create an Image of a partition, logical disk, or entire hard drive
- Create an Image from Files
- Copy Files to a Folder
- Restore Data from an Image
- Copy Disk to Disk to make an exact copy of one disk on another
- Manage partition and logical disks
- Mount an Image as a Virtual Logical Disk (read-only)
- Unmount Virtual Logical Disks
- Check an Image File to check an existing image file

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup Version** such as:

- <u>Create Startup Disk</u>
- <u>Restoring Data to a System or Other Locked Disk</u>
- <u>Create an Image Using the Startup Disks</u>
- Disk to Disk Copy Using the Startup Disks

The <u>Scheduled Actions</u>, <u>Command Line Operations</u>, <u>and Scripting</u> chapter explains how to start disk actions automatically at scheduled times/events and create scripts that can be performed from a command line.

- <u>Scheduler and Unattended Actions</u>
- Scripting and Command Line Operations
- Rotation schemes (backup sets)

The **<u>Technical Information</u>** chapter gives technical information on

- Updates
- <u>Cloud Services</u>
- FTP/FTPS/SFTP Servers
- Network-Drives
- Image Replications
- Logging
- Creating consistent point-in-time backups
- <u>Support for Various Disk Partition Schemes and File Systems</u>
- <u>Supported Virtual Disk and Disk Image Formats:</u>
- Disk Wiping Algorithms
- Supported CD and DVD Recorders
- List of Hardware Devices Supported in the Startup Mode

The **<u>R-Drive Image OEM kit</u>** chapter explains how computer system integrators can create system recovery disks for their systems

- Create a Master Image
- <u>Create Startup Media</u>

71

Follow this link to obtain **<u>R-Drive Image Contact Information and Technical Support</u>**

4.1 Hardware RAIDs

R-Drive Image supports hardware RAIDs created by RAID controllers.

Hardware RAID

A 0: Marvell 0	ID	: 0
- Virtual Disks	Name	: Hard_RAID0
L Hard_RAID0	Status	
HDD 0: ST380013AS	Stripe Size	
L HDD 1: ST380817AS	RAID Mode	
L Free Physical Disks		: 152478MB
	BGA Status	
	Number of PDs	
	Members	:01
the second s		
Help	1 blacks wronged	d to an operating environment as

Actually, **R-Drive Image** treats them as single hard disks.

Hardware RAID

	eate Image		
🕜 Main menu	Select disk(s) to create image		Help
Source			
GPT 931.		D: (Data) 638.5GB NT	Una 1.69
GPT 111.7			
GPT 148.9		1.10	allocate MB
	148/36B (Used space 18.1 GPT		
Back	2 0	isks elected	▶ Next

Data Restore from an Image of a Hardware RAID

You may restore data from an image of a hardware RAID with the limitations described in the <u>Support for</u> <u>Various Disk Partition Schemes and File Systems</u> section.

Hardware RAID

🕄 Main m	enu	F	Restore disks/imag	les		0	Help
	Hardware			Selected Hard	Iware RAID0	4-07-202	
ource. r	. Indidiwaleri	AID0.10		V		H-07-202	4
	GPT 148.9GB	System Reserved 15.9MB	E: (Hardware RAID0) 148.8GB NTFS (GPT)		PAIDO (E) NITES	Unallo 1.10MB	
					Used space 24.6GB)		
estinatio	n						
	Drag her	e to restore files					
	GPT	e to restore files System Reserved	E: (Hardware RAID0)		:	Unallo	cat
			E: (Hardware RAIDO) 448.8GB NTFS (GPT)			Unallo 1.10MB	
	GPT 148.9GB	System Reserved 15.9MB	148.8GB NTFS (GPT)	lina Wind	* Win * D: (D	1.10MB	
	GPT	System Reserved 15.9MB	* 148.8GB NTFS (GPT)		Win D: (D 4501 638.5	1.10MB ata)	Una
	GPT 148.9GB GPT 931.5GB	System Reserved 15.9MB (Re) V Syst 300 10(128M	* 148.8GB NTFS (GPT) * C: (Syste * Wind * 291GB NT * 524ME			1.10MB ata)	Una
	GPT 148.9GB GPT	System Reserved 15.9MB (Re : U : Syst 300 : 101 : 128M System Reser : (H	148.8GB NTFS (GPT) 148.8GB NTFS (GPT) 291GB NT 524ME 148.4GB NT			1.10MB ata)	Una
	GPT 148.9GB GPT 931.5GB GPT	System Reserved 15.9MB (Re : U : Syst 300 : 101 : 128M System Reser : (H	* 148.8GB NTFS (GPT) * C: (Syste * Wind * 291GB NT * 524ME			1.10MB ata)	Una
	GPT 148.9GB GPT 931.5GB GPT	System Reserved 15.9MB (Re : U : Syst 300 : 101 : 128M System Reser : (H	148.8GB NTFS (GPT) C: (Syste Wind 291GB NT 524Me 17GB NTFS (GPT)	1MB 450ME		1.10MB ata)	Una
	GPT 148.9GB GPT 931.5GB GPT	System Reserved 15.9MB (Re : U : Syst 300 : 101 : 128M System Reser : (H	148.8GB NTFS (GPT) 148.8GB NTFS (GPT) 291GB NT 524ME 148.4GB NT	1MB 450ME		1.10MB ata)	Una
	GPT 148.9GB GPT 931.5GB GPT	System Reserved 15.9MB (Re : U : Syst 300 : 101 : 128M System Reser : (H	148.8GB NTFS (GPT) C: (Syste Wind 291GB NT 524Me 17GB NTFS (GPT)	1MB 450ME		1.10MB ata)	

4.2 BitLocker Drive Encryption

BitLocker Drive Encryption, or **BitLocker**, is a data protection feature introduced by Microsoft since Windows Vista. It implements some hard/software measures to encrypt either USB external flash drives or internal system SSD/HDD devices. You may read more about **BitLocker Drive Encryption** on the <u>Microsoft site</u> or <u>Wikipedia</u>.

There are following encryption methods (protectors in the Microsoft terms) that can be utilized in the **BitLocker** protection:

- A <u>TPM/TPM+PIN</u> chip
- A USB key (a flash drive containing a .bek file)
- A user's password (not to confuse with a user's logon password) / recovery key

These methods can be used either individually or as a combination thereof. If they are used as a combination, knowing the decryption information for only one method is enough to unlock the device.

R-Drive Image can unlock devices encrypted with **BitLocker** provided that all the necessary information is known.

Important: When you backup a **BitLocker** volume as a part of its hard drive, it will be backed up locked. When you back up the **BitLocker** volume form the **BitLocker** section, it will be backed up unlocked if the system has already unlocked it, or **R-Drive Image** will ask for its password/key to unlock the volume.

BitLocker ToGo

This is the method used to lock external removable devices. The password or a recovery key is necessary to know to unlock the device. A recovery key may be in the printed form or contained in a file. A name of such a file has the following pattern: BitLocker Recovery Key 600397A9-48AA-4DE4-B775-C71EB130EA1B.txt

, where the last characters is the **BitLocker** volume identifier. That file contains the **BitLocker** volume identifier and a recovery key.

Locked BitLocker ToGo volume example

R-Drive Image - Copy Disk		<u> </u>		×
0 0 +	🖉 🖥 🗃 😂 🗢 😑			•••
Source				
External USB device with a BitLocker ToGo volume 931.5GB		dows Recov AB NTFS	Unal 1.44N	
MBR 3.75GB	€ E: 3.75GB]
BitLocker	BitLocker 3.75GB			J
	The locked BitLocker ToGo volume			
Destination				
GPT 111.7GB	•	NTFS	Unal 1.44%	
Back	Show/hide disks 0 Operation(s)	Cancel all	Next	

Double-click the locked BitLocker volume and enter its password or recovery key.

BitLocker ToGo volume's password/key



> R-Drive Image will unlock the volume

BitLocker ToGo volume's password/key

R-Drive Image - Copy Disk		- 🗆 X
0 \$ +	1 🗟 🗃 🗟 全 🐴	
Source		
External USB device with a BitLocker ToGo	UUEFI Syste System R 100MB FAT32 16MB RAW partition (v BitLocker ToGo resides	volume 508MB NTFS 1.44V
931.5GB	D: (Data) 931.5GB NTFS	
MBR 3.75GB	E: 3.75GB	
BitLocker	BITLOCK_GO) 3.75GB FAT32 (BitLocker)	
	The unlocked B	litLocker
Destination	ToGo volu	me
MBR 3.75GB	E: 3.75GB	
Back	Show/hide disks	operation(s) Cancel all Next

BitLocker System Drive Encryption

This is the method used to lock internal system drives.

Depending on what methods are used, the following information is necessary to know to unlock the drive.

- A recovery key in the printed form or in a file. A name of such a file has the following pattern: BitLocker Recovery Key FDA7B96C-635E-45AA-BE63-00C3DB3771EE.txt, where the last characters is the **BitLocker** volume identifier. That file contains the **BitLocker** volume identifier and a recovery key.
- A password used to start the preboot process. It shouldn't be confused with the password for the user's logon.

To unlock a system drive with a BitLocker partition,

BitLocker System Drive Encryption

R-Drive Image - Mount Virtue An image with a BitLo System Drive Encryp Partition Source TubitLockerve	Select	t image to mount Hard Drive with BitLocker System Drive Encryption Partition		
GPT 119.2GB	UEFI Syste System R 100MB FAT32 16MB	BitLocker Container GPT 118.6GB		Inali 31N
BitLocker	La BitLocker	ocked BitLocker System live Encryption Partition		
G Back			-	Next

Double-click the locked BitLocker Partition and enter its password or recovery key.

BitLocker System Drive Encryption



> R-Drive Image will unlock the partition BitLocker System Drive Encryption

An image with a Bit System Drive Encry Partition	rption	t image to mount Hard Drive with BitLocker System Drive Encryption Partition		
<u> </u>	IBILLOCKErFullSys.rdr	\mathcal{V}	time: 8/24/2023 4:3	
GPT 119.2GB	UEFI Syste System R 100MB FAT32 16MB	BitLocker Container GPT 118.6GB	Windows Recov 530MB NTFS	Unall 1.31N
BitLocke	BitLocker 118.6GB NTFS			
	Un Di	locked BitLocker System ive Encryption Partition		

4.3 Windows Software RAIDs, Mirrors, and Spanned Volumes

R-Drive Image supports Windows software RAIDs, mirrors, and spanned volumes. Such objects can be managed using the **Disk Management** item in **Computer management**.

Windows software RAID0



Windows software mirror

Computer Management										<u>-</u>		×
Eile Action View Help												
Computer Management (Local	Volume	Layout		File System					Capacity	Free Span		Free
✓	(Disk 2 partition				Healthy (Recover				300 MB	300 MB		0 %
> 🕑 Task Scheduler	- (Disk 2 partition				Healthy (EFI Syste				100 MB	100 MB		0 %
> 🛃 Event Viewer	- (Disk 2 partition				Healthy (Recover				524 MB	524 MB		0 %
> 👔 Shared Folders	- (Disk 2 partition				Healthy (Recover				450 MB	450 MB		0 %
> 🜆 Local Users and Groups	- (Disk 2 partition				Healthy (Recover				450 MB	450 MB		0 %
> (Performance	- (Disk 3 partition Data (D:)			NITEC	Healthy (EFI Syste	em Partition)			200 MB 638.54 GB	200 MB	8 9	0 %
🛃 Device Manager	Images (F:)	Simple		Wind	ows Software RA	UD1 (ion)			038.54 GB			%
✓ Storage	System (C:)	Simple		NT	Healthy (Boot, Pa		_		291.06 GB	193,14 G		
T Disk Management	Test RAID1 (E:)	Mirror		NTES	Healthy (BOOL, Pa	ige rile, crasi	Parents of W		74.51 GB	56.38 GB	76	
> 🛃 Services and Applications	Test INAID I (C:)	WIITOF	Dynamic	NIFS	Healthy	L	Software	RAID1	74.31 08	J0.36 GB	70	70
							ν					
	Disk 0									N		
	Dynamic	Test RAID	4 (5)						-	1		
	74.51 GB	74.51 GB N										
	Online	Healthy	115									
		ricultity										
	= Disk 1											
	Dynamic	Test RAID	1 (E:)									
	74.51 GB	74.51 GB N	ITES									
	Online	Healthy										
										1		
				-		<i>.</i>						_
	- Disk 2											
	Basic			System					Data (I			
	931.39 GB Online	300 MB	100 MB	291.06 G		524 MB	450 MB	450 MB	638.54 0			
	Unine	Healthy (R	Healthy	Healthy	(Boot, Page File, Cr	Healthy (Rea	Healthy (Re	Healthy (R	e Healthy	(Basic Dat	a Parti	ition)
			21									
	Basic			_						-		
	111.79 GB	200 MB			Images (F:) 111.59 GB NTES							
	Online		FI System P	artition)	Healthy (Basic Dat	Partition)						
		r realting (c	in System P	articiony	ricolicity (basic bac	a Particion)						
< >	Unallocated	Primary par	tition 📕 M	irrored volu	ne							

Windows software spanned volume

Computer Management (Local	-		Туре	File System	Status			Capacity	Free Space
Computer Management Local Computer Management Local Signament Construction Signament Construction Signament Computer Management Storage Toick Management Services and Applications	Otek 2 partition 2) Otek 2 partition 2) Otek 2 partition 2) Otek 2 partition 2) Otek 2 partition 6) Otek 2 partition 6) Otek 2 partition 7) Otek 2 partition 7) Otek 2 partition 1) Data (D) Sottem (C) Otek 3 partition 1) Data (D) Test Spanned Volume (E) Onynamic Assist 6 Online Disk 1	anned Volu NTFS	Basic Basic Basic Basic Basic Basic Basic Dynamic	NTFS NTFS NTFS	Healthy (Recovery Parti Healthy (Recovery Parti))	tition) tion) tion) tion) mned mon; Cr Paren	is of Window Spanned Vol	300 MB 100 MB 524 MB 450 MB 200 MB 638.54 GB 111.59 GB 06 GB	rree spac 300 MB 524 MB 450 MB 450 MB 200 MB 47.91 GB 193.16 GB 130.89 GB

Windows Software RAIDs, Mirrors, and Spanned Volumes Imaging

R-Drive Image displays those objects similar to their representation in the Windows Disk Manager.

Windows software RAID0

🕜 Main r	menu	Sele	tet disk(s) to create image Selected Windows Software RAID0
ource			V
	LDM 74.5GB	System Reserved I 14.9MB	E: (Test_RAID0) 74.5GB NTFS (Dynamic Volume) Test RAID0 (E) NTFS
	LDM 74.5GB	System Reserved I 14.9MB	E: (Test_RAID0) 74.5GB NTFS (Dynamic Volume)
	GPT 931.5GB	(Rec) U Syst 300MI 100N 128N	
	GPT 111.7GB		(Images) 1.5GB NTFS (GPT)

Windows software mirror

🕜 Main r	nenu	Sel	ect disk(s) t	o create	image lected Windo RAID		are	🕜 Help
ource					V			
I all	LDM 74.5GB	System Reserved 14.9MB	E: (Test RA 74.5GB NTF			RAID1 (E:) N	1.0	allocate 8MB
	LDM 74.5GB	System Reserved 14.9MB	E: (Test RA 74.5GB NTF		74.50		ace 18.1GB)	allocate 8MB
	GPT 931.5GB	(Rec: UU Sys 300MI 100N 1281			Una Wind MB 450ME	Wind 450ME	D: (Data) 638.5GB NT	Una 1.69
	GPT 111.7GB		F: (Images) 111.5GB NTFS (GI	PT)				

Windows software spanned volume

🕜 Main r	menu	Sele	ect disk(s) to create image
ource			Spanned Volume
	LDM 74.5GB	System Reserved 14.9MB	E: (Test Spanned Volume) 74.5GB NTFS (Dynamic Volume) Test Spanned Volume (): NTFS
	LDM 74.5GB	System Reserved 14.9MB	E: (Test Spanned Volume) 74 5GB NTFS (Dynamic Volume)
	GPT 931.5GB	(Rec) U Syst 300MI 100N 128N	
	GPT 111.7GB		: (Images) 11.5GB NTFS (GPT)

When you select one parent of a Windows software RAID, mirror, or spanned volume, **R-Drive Image** selects the entire object.

Data Restore from an Image of a Software RAID, Mirror, and Spanned Volume

You may restore data from an image of a Windows software RAID, mirror, and spanned volume with the limitations described in the **Support for Various Disk Partition Schemes and File Systems** section.

Windows software RAID0

🕜 Main m	enu	Restore di S Win	elected Parents of dows Software RA	ID0	Help
Source: F	:\SoftRAID0	dr		Image date/time:	04-07-2021
	LDM 74.5GB	E: (Test_RAID0) 74.5GB NTFS (Dynamic Volume)	Test_RAID0 (E:) 149GB (Used sp		
	LDM 74.5GB	E: (Test_RAID0) 74.5GB NTFS (Dynamic Volume)	Dynamic Volur		
estinatio	n				
	LDM 74.5GB	System Reserved E: (Test_R 14.9MB 74.5GB NTF	AID0) ⁻ S (Dynamic Volum	e)	Unallocate 1.08MB
		14.9MB 74.5GB NTF System Reserved E: (Test_R	S (Dynamic Volum		
	74.5GB	14.9MB 74.5GB NTF System Reserved E: (Test_R	S (Dynamic Volum AIDO) S (Dynamic Volum Wind Una 524M 1M	e) With Wir D: (D Selected Target for	1.08MB Unallocati 1.08MB (1.08MB) (1.08
	74.5GB LDM 74.5GB GPT	14.9MB 74.5GB NTF System Reserved E: (Test_R 74.5GB NTF 14.9MB 74.5GB NTF : (Re :: U :: Syst :: C: (Syst ::	S (Dynamic Volum AIDO) S (Dynamic Volum Wind Una 524M 1M	e) Wint: Win: D: (D	1.08MB Unallocati 1.08MB (1.08MB) (1.08

Windows software mirror



Windows software spanned volume



4.4 Windows Storage Spaces

R-Drive Image supports Windows Storage Spaces created by Windows 8/8.1 and Windows 10/Threshold 2/Anniversary/Fall Creators updates. Storage pools and spaces is a new storage technology, first introduced in Windows 8 and Windows Server 2012, that allows the user to combine various (not always similar) hard drives into a kind of a RAID or compound volume. First, the hard drives are combined into a storage pool, then several storage spaces with striping (similar to RAID0), mirroring (similar to RAID1), and parity (similar to RAID5) can be created in that storage pool. You may read more about storage pools and spaces in the Microsoft's <u>Storage</u> <u>Spaces: FAQ</u>.

When drives from a storage pool are connected to a Windows computer, it automatically detects them and assembles storage spaces accordingly.



Windows storage spaces

Storage pools and spaces can be managed using the Storage Spaces item in the Control Panel.

Windows storage spaces



R-Drive Image can image Windows Storage Spaces and then restore data to them with some restrictions.

Windows Storage Space Imaging

R-Drive Image displays both Windows Storage Spaces and their parents on the Partition Selection panel.

R-Drive Ima	ge - Create Imag		
🕜 Main m	enu	Select disk(s) to create image	🕜 Help 🔻
ource			
	GPT 931.5GB	U Syst C: (Systen Wind- Una Wind Wind D: (Data) 300MI 1000, 2940B NTE 52446 1MB 450ME 450ME 638.5GB	
	GPT 931.5GB	System Rese Storage Space	nallocate 69MB
N.	GPT 29.2GB	System Reserv WSS Protective Partition GPT 128MB 29GB	
No.	GPT 29.2GB	System Reserver WSS Protective Partition GPT 128MB 29GB	
N il	GPT 29.2GB	System Reserv WSS Protective Partition GPT 128MB 29GB	
	GPT 56GB	System Reserv (Test_WSS) 128MB 55.8GB NTFS (GPT) Test_WSS NTFS 55.8GB (Used space 17.1GB)	
		GPT	
		ected Windows torage Space	
	<u> </u>		
de Back		2 Disks Selected	Next

Windows storage spaces

When you select a certain Windows Storage Space, R-Drive Image also shows its respective parents.

Data Restore from an Image of a Windows Storage Space

You may restore data from an image of a Windows Storage Space with the limitations described in the **Support** for Various Disk Partition Schemes and File Systems section.

Windows storage spaces

Main me	e - Restore Imi enu	Restore disks/images	Help
ource: Y	WSS-imag		c 04-03-2021
	GPT 56GB	System Reserv (Test, WSS) 128MB 55 8GB NTFS (GPT)	
estinatior	1		
	Drag her	re to restore files	
	GPT 931.5GB	300 101 128N 291GB NT 524ME 1MB 450ME 450P 6	D: (Data) Una
	GPT 931.5GB	System Reserver Y: (Images) 15.9MB 931.4GB NTFS (GPT)	Unallocate
W ill	GPT 29.2GB	System Reser WSS Protective Partition GPT 128MB 29GB	
Q:	GPT 29.2GB	System Reser WSS Protective Partition GPT 128MB 29GB	
Q :	GPT 29.2GB	System Reser WSS Protective Partition GPT 128MB 29GB	
	GPT 56GB	System Reser (Test_WSS) 128MB 55.8GB NTFS (GPT)	
		Selected Target for	

Please, note that **R-Drive Image** can restore data only to fixed-provisional Windows Storage Spaces if the Windows version doesn't support Windows Storage Spaces. The startup version of **R-Drive Image** can restore data only to fixed-provisional Windows Storage Spaces, too. You may read more about thin-provisioned or fixed Windows Storage Spaces in <u>Microsoft's Storage Spaces Overview</u>.

4.5 Apple RAIDs

R-Drive Image supports various software RAIDs that OS X can create from disks connected to a Mac computer: RAID1 (Mirror set), RAID0 (Stripe set), and Concatenated disk set.

Apple RAID0 example



Apple RAIDs Imaging

R-Drive Image displays both Apple RAIDs and their members on the Partition Selection panel.

Apple RAID0

K-Drive Ima	ige - Create Imi	age							-	_	
🕜 Main m	nenu		Sele	ect disk(s) f	to crea	te ima	ge			8	Help
Source											
	GPT 931.5GB	(Rec) U L 300MI 1000			Wind 524ME	Una 1MB	Wind 450ME	Wind 450ME	D: (Da 638.5G		Una 1.69
	bers of select Apple RAID0	tem Res	erved	E: (Images) 931.4GB NTFS	(GPT)					Unall 1.69M	ocate B
	GPT 3.75GB	UEFI System 200MB FAT3		(Test Mac RAI 3.43GB HFS+ (I		VD)	Test Mac	RAID 0 HI	S+		oot O! B HFS+
	GPT 3.75GB	UEFI System 200MB FAT3		(Test Mac RAI 3.43GB HFS+ (I		ND)		Used space	e 68.4MB)	(Boot 128ME	OS X HFS+
				[Selecte	d Apple	RAID0]			

You may select either the Apple RAID, or its members separately.

Data Restore from an Image of an Apple RAID

You may restore data from an image of an Apple RAID with the limitations described in the <u>Support for</u> <u>Various Disk Partition Schemes and File Systems</u> section.

Apple RAID0

Main menu			Restore disks/ima	iges	Help			
Source: E:W	acOSRAI	D0-image.rdr		Selected Ap	ple RAID0 4-02-2021			
	PT 75GB	(Test Mac RAID 3.43GB HFS+ (Mar						
	PT 75GB	(Test Mac RAID 3.43GB HFS+ (Mar						
Members of	f Selected	I Apple RAID0		6.86GB (Used s MacOS RAID	pace 68.4MB)			
Destination								
	Drag her	re to restore files						
9	PT 31.5GB	300 10(1	Syst C: (Syst Wind 281 291GB N 524M	Una Wind Wir 1MB 450M 4501				
	of Selecte Apple RAI	ed Target for D0 eserv 15.9MB	e E: (Images) 931.4GB NTFS (GPT)		Unallocate 1.69MB			
-	PT 75GB	200MB FAT32	(Test Mac RAID 0) 3.43GB HFS+ (MacOS RA	ND)	F: (Boot 128MB HF			
	PT	UEFI Syster	(Test Mac RAID 0)	(Boot OS : 128MB HF :				
			(Test Mac RAID 0)					

4.6 Apple CoreStorage/File Vault/Fusion Drive Volumes

The macOS operating system has the following disk management systems:

File Vault, is a disk encrypted utility;

Fusion Drive is an Apple's hybrid drive technology;

<u>CoreStorage</u> is a logical volume management system.

R-Drive Image supports all these technologies and can unlock their encrypted volumes (hard drives and images).

Apple CoreStorage/File Vault Volume Imaging

R-Drive Image displays both those volumes and their members on the Partition Selection panel.

Locked Apple CoreStorage

Main m	ge - Create Image	Select disk(s) to create image	- D
•	iona -	occorrange	• Holp
ource			
I.	GPT 931.5GB		(Data) Una 1.5GB NT 1.691
	GPT 931.5GB	System Reserve 15.9MB 931.4	Unallocate 1.69MB
N.	GPT 7.68GB	UEFI System E: 200MB FAT32 7.36GB (CoreStorage Protective Partition GPT)	F: (Boot O 128MB HFS
	CoreStorage	(E) 7/J3G8 HFS+ (CoreStorage) (CoreStorage 7/3568 (CoreStorage 7/3568	in in in its second sec
de Back	(3 Disks Selecte	ed Next

In the above case, the entire hard drive will be imaged.

You may unlock encrypted volumes and image only them. Click the locked volume and enter the password in the **Unlock encrypted drive** dialog box.



Unlocked Apple CoreStorage

🕜 Main m	enu	Select disk(s) to create image	() Help
Source			
	GPT 931.5GB		Data) Una SGB NT 1.69
I.	GPT 931.5GB	System Reserve Y: (Images) 15.9MB 931.4GE Apple Core Storage	Unallocate 1.69MB
Q:	GPT 7.68GB	UEFI System E: 200MB FAT32 7.36GB (CoreStorage Protective Partition GPT)	F: (Boot O 128MB HFS
	CoreStorage	Tile_Vault)	
		File_Vault HFS+ 7.03GB CoreStorage	
		CoreStorage volume	
- Back		1 Disk	Next

In this case the volume will be image without encryption

Data Restore from an Image of CoreStorage/File Vault Volumes

You may restore data from an image of an Apple CoreStorage/File Vault volume with the limitations described in the **Support for Various Disk Partition Schemes and File Systems** section.

Data restore from an image of an entire storage device to another storage device.

Apple CoreStorage



In this case the result will be the exact copy of the imaged storage device.

Data restore from an image of an unencrypted an Apple CoreStorage/File Vault volume device to the place of a locked encrypted volume.

R-Drive Imag	ge - Restore Image					-	
🕜 Main m	enu		Restore disks/	mages			Help •
Source: Y	:\CoreStorage_L	Unlocked Ap Core Storag			Image date/time	e: 04-04	2021
		ile_Vault) 03GB HFS+ (CoreSti	orage)	7.0	e_Vault HFS+ 3GB (Used space 978 reStorage	.6MB)	
Destinatio	n				restorage		
	Drag here to	restore files					
-	GPT 931.5GB			Winc Una 524M 1MB	Winc Wir 450M 450	D: (Data) 638.5GB N	
Į	GPT 931.5GB	System Reser	Ve Y: (Images) 931.4GB NTFS (GPT)			nallocate 69MB
	GPT 7.68GB	UEFI Syste		ge Protective F	Partition GPT)		(Boot 8MB HF
	CoreStorage	File_Vault) 7.03GB HFS+ (C	coreStorage)				
		Locked Apple Core Storage					

In this case the result will be an unencrypted volume on the place of the previous encrypted volume.

Data restore from an image of an unencrypted Apple CoreStorage/File Vault volume device to the place of an unlocked encrypted volume.

R-Drive Image - Restore Image × 🕜 Main menu 🕜 Help 🔻 Restore disks/images Unlocked Apple CoreStorage Image date/time: 04-04-2021 Source: Y:\CoreStorage Unlog T: GPT 7.68GB (File_Vault) 7.03GB HFS+ (CoreStorage File_Vault HFS+ 7.03GB (Used space 978.6MB) Destination T GPT 931.5GB (Re U Syst C: (Syst Win 300 10(1281 291GB N 5241 Una D: (Data) Una S. Unallocate GPT 931.5GB System Reserve Y: (Images) 15.9MB 931.4GB NTFS (GPT) UEFI Syste E: 200MB FAT32 7.36GB (CoreStorage Procective Partition GPT) F: (Boot 128MB HF "Li GPT 7.68GB File_Vault) and a CoreStorage Inlocked Apple CoreStorage Show/hide disks 1 Operation(s) Remove all Next de Back

In this case the result will be an encrypted volume on the place of the previous encrypted volume.

Apple CoreStorage

Apple Fusion Drive Imaging

R-Drive Image displays both this volume and its members on the Partition Selection panel.

Apple Fusion Drive



When you select a certain Fusion drive, R-Drive Image also shows its respective components.

Data Restore from an Image of Apple Fusion Drive Volumes

You may restore data from an image of an Apple Fusion Drive volume with the limitations described in the **Support for Various Disk Partition Schemes and File Systems** section.



Apple Fusion Drive

4.7 Linux mdadm RAIDs

mdadm is a Linux utility used to manage and monitor software RAID devices.

R-Drive Image supports such devices and when drives from a mdadm RAID are connected to a Windows computer, it automatically detects them and assembles mdadm RAIDs accordingly.

Linux mdadm RAIDs



mdadm RAIDs Volume Imaging

R-Drive Image displays both mdadm RAIDs and their components on the Partition Selection panel.

Linux mdadm RAID5



Data Restore from an Image of a mdadm RAIDs Volume

You may restore data from an image of a mdadm RAIDs with the limitations described in the <u>Support for</u> <u>Various Disk Partition Schemes and File Systems</u> section.

-	u	Re	store disks/ima	ages	Hel
Source: D:W	MAGES\R	DI\mdadm5.rdr		Image date/tir	me: 04-09-2021
	ndadm 29.2GB				
	ndadm 29.2GB				
	ndadm 29.2GB		Selected Li RAI	nux mdadm ID5	
	ndadm	(mdadm_RAID5) 58.4GB Ext4 (mdadm)		ß	
				mdadm_RAID5 Ext4 58.4GB (Used space 18 mdadm	3.2GB)
Destination	Drag her	e to restore files			
	Drag her 3PT 331.5GB	: (Re : : U : Syst :)	2: (Syste : Wind 291GB NT : 524ME	Una Wind ; Win ; 1MB 450ME 450 ;	D: (Data) Un: 638.5GB NTI 1.69
	GPT	(Re: U: Syst			
	3PT 931.5GB mdadm	(Re: U: Syst 300: 100: 128N	291GB NT 🕽 524ME		
	GPT 931.5GB ndadm 29.2GB ndadm	(Re: U: Syst	291GB NT \$ 524ME		
	GPT 031.5GB mdadm 29.2GB mdadm 29.2GB mdadm	(Re U Syst	291GB NT \$ 524ME		

Linux mdadm RAID5

4.8 Linux Logical Volume Manager Volumes

Linux LVM is a logical volume manager for the Linux OS that manages disk drives and other data storage devices. Using it, It is possible to create single logical volumes on several physical disks, add and replace them in a running system, resize logical volumes, create various RAID configuration, and so on. You may read more about Linux LVM on this Wikipedia article: Logical Volume Manager (Linux).

LVM volume example

90

				kvpm	(as superus	er)						
ile <u>V</u> olume Grou	ps <u>T</u> ools	Settings	Help									
Storage Devices	Group:	LVM_Test										
New volume N	ew pool		ie i Delete i	Rename	Snapshot		apshot Mer	ge Redu	ice logical v	volume I	Extend >	
Total: 7.5 GiB Allocatable: 0 B	Used: 7 Free: 0		Clustered: No Format: lvm2		size: 4.0 MiB normal		able: Yes 2 Used: 2	UUID: fi98 PFnH-77D	IEa-UauY-P Y-2EDsdZ	PKa-v07J-	Max pv: Max lvs	
Volume 🔻		Size	Remaining	Data/Cop					LVM_Test	t_Vol		
LVM_Test_Vo	linear	7.5 GiB	0 B (%0)		active		Extents: 1.9 Stripes: 2 o Filesystem: Access: r/w Policy: inhe	f 4.0 KiB ext4	D			
							/media/and	rew/8f434	Mount P fcd-f1e6-4b		15e6b497	563c
							/dev/sdd1 /dev/sdc1	Ρ	hysical Vo	olumes		
∢ Name ▼ S	ize R	emaining	Allocatable	Tags	Logical volu) mes			/dev/sc	lc1		
/dev/sdc1 3. /dev/sdd1 3.		0 B (%0) 0 B (%0)		S	LVM_Test_V LVM_Test_V	ol	Volume na LVM_Test_' Total exter	Vol	tart 0	End 9	Ext	ents 959
							MDA	Total: 1	1. In u	se: 1	Size: 1,02	20.0 KiB

LVM volume Imaging

R-Drive Image displays both LVM volumes and their components on the **Partition Selection** panel. **LVM Volume**

🕜 Main menu	Select disk(s) to create image	- D
U Main menu	Gelect disk(s) to create image	Theip
ource		
GPT	(Rec) U Syst C: (Systen Wind Una Wind Wind D: (D	Data) Una
931.5GB Components o		GB NTF 1.69
LVM volu	ume teservec Y: (Images)	Unallocate
- Voor	15.9MB 931.4GB NTFS (GPT)	1.69MB
MBR	(LVM_Test-LVM_Test_Vol)	
3.75GB	3.75GB Ext4 (LVM)	
MBR	(LVM Test-LVM Test Vol) 7.49GB (Used space 7.10GB)	
3.75GB	3.75GB Ext4 (LVM)	
	Selected LVM volume	

When you select a certain LVM volume, **R-Drive Image** also shows its respective members.

Data Restore from an Image of a LVM volume

You may restore data from an image of a LVM volumes with the limitations described in the <u>Support for</u> <u>Various Disk Partition Schemes and File Systems</u> section.

LVM Volume

R-Drive Image - Restore Image		
Main menu Components of LVM Volume (not s		nages 🕜 Help
Source: Y:\L c-image.i		Image date/time: 04-02-2021
	LVM_Test-LVM_Test_Vol)	(Used space 7.10GB)
	LVM_Test-LVM_Test_Vol)	(Used space /. (USB)
	Selected LVM Volume	
Destination		
Drag here	o restore files	
GPT 931.5GB	(Re	
Members of Sele LVM Vo		Unallocate
1.5GB	15.9MB 931.4GB NTFS (GPT)	1.69MB
MBR 3.75GB	(LVM_Test-LVM_Test_Vol) 3.75GB Ext4 (LVM)	
MBR 3.75GB	(LVM_Test-LVM_Test_Vol) 3.75GB Ext4 (LVM)	
		Selected Target for
		LVM Volume
- Back	Show/hide disks	1 Operation(s) X Remove all Next

V Startup Version

There are three types of the **R-Drive Image** startup mode: WindowsPE-based, Linux-based with the Graphic User Interface (GUI). and Linux-based with the Text User Interface (TUI). The interface of the later is actually pseudo-graphic. The Windows-based and Linux-based GUI types have the same interface as that of the Windows version and its operation is similar. You may refer to the respective help pages for detailed instructions. This chapter describes the operation of the TUI startup version.

Note: All startup versions do not work with cloud services.

This chapter explains how to perform disk actions using the R-Drive Image Startup Version such as:

- <u>Create Startup Disk</u>
- Load Computer into Startup Mode
- <u>Restore Data From an Image</u>
- Create an Image
- Disk to Disk Copy
- <u>Create an Image from Files</u>
- <u>Partition Manager</u>
- <u>Check an Image File</u>
- <u>Network Drives</u>

The **Disk Actions** chapter explains disk actions such as:

- Create an Image of a partition, logical disk, or entire hard drive
- <u>Create an Image from Files</u>
- Copy Files to a Folder
- <u>Restore Data from an Image</u>
- Copy Disk to Disk to make an exact copy of one disk on another
- <u>Manage partition and logical disks</u>

- Mount an Image as a Virtual Logical Disk (read-only)
- <u>Unmount Virtual Logical Disks</u>
- Check an Image File to check an existing image file

The **RAIDs**, and Various Disk and Volume Managers chapter explains how to perform disk actions with various compound volumes such as:

- Hardware RAIDs
- **<u>BitLocker Drive Encryption</u>**
- Windows Software RAIDs, Spanned, and Other Volumes
- <u>Windows Storage Spaces</u>
- Apple RAIDs
- <u>Apple CoreStorage/File Vault/Fusion Drive Volumes</u>
- Linux mdadm RAIDs
- Linux Logical Volume Manager Volumes

The <u>Scheduled Actions</u>, <u>Command Line Operations</u>, <u>and Scripting</u> chapter explains how to start disk actions automatically at scheduled times/events and create scripts that can be performed from a command line.

- <u>Scheduler and Unattended Actions</u>
- <u>Scripting and Command Line Operations</u>
- <u>Rotation schemes (backup sets)</u>

The Technical Information chapter gives technical information on

- Creating consistent point-in-time backups
- Support for Various non-MBR/GPT Partitioning Schemes
- Supported CD and DVD Recorders
- List of Hardware Devices Supported in the Startup Mode

The **<u>R-Drive Image OEM kit</u>** chapter explains how computer system integrators can create system recovery disks for their systems

- <u>Create a Master Image</u>
- Create Startup Media

Follow this link to obtain **<u>R-Drive Image Contact Information and Technical Support</u>**

5.1 Create Startup Disks

You need to create a startup CD/DVD disc, or USB removable storage device to restore data to a system or other locked disk. You may also create an ISO image of a startup CD disc and burn it using your favorite CD writing software.

You may create a Linux-based or WinPE based startup disk.

A Linux-based disk

If there is a non-IDE disk controller in your system, or you plan to use network disks or external hardware devices, first check the list of supported hardware.

If you have problems with starting you computer up from the **R-Drive Image** startup disks, select **configure startup media troubleshooting options**. Then the **Startup Media Troubleshooting Options** panel will appear. You may configure these options to eliminate those problems.

	inux-based 🔻		×
Startup media troubles	hooting options		
Trace drivers loading			
	75		
Disables SCSI device	s support s support		
Disables DMA for all II	DE disk drives		
PCI BIOS	Default	•	
Disable specified drivers			
	Startup media troubles Display kernel startup Trace drivers loading Disables ACPI (Advar Disables APIC (Advar Disables APIC (Advar Disables ASSI devices Disables PATA device Disables PATA device Disables DMA for all II IRQ poling mode Default clocksource PCI BIOS ACPI OSI	Bootable media type Linux-based Startup media troubleshooting options Display kernel startup messages Trace drivers loading Disables ACPI (Advanced Configuration and Power Disables APIC (Advanced Programmable Interrupt O Disables APIC (Advanced Programmable Interrupt O Disables SCSI devices support Disables PATA devices support Disables PCMCIA devices support Disables DMA for all IDE disk drives IRQ polling mode Default ACPI OSI	Bootable media type Linux-based Startup media troubleshooting options Display kernel startup messages Trace drivers loading Disables ACPI (Advanced Configuration and Power Interface) Disables APIC (Advanced Programmable Interrupt Controller) Disables SCSI devices support Disables PATA devices support Disables PCMCIA devices support Disables DMA for all IDE disk drives IRQ polling mode Default ACPI OSI

Those options will help you if you have problems with starting you computer up from the **R-Drive Image** startup disks.

∃ Startup Media Troubleshooting Options

Bootable media type	You may select either a Linux-based or WindowsPE based startup version.
Display kernel startup messages	if this checkbox is enabled, R-Drive Image displays all startup messages. That may be useful to locate the source of the problem when your system hangs during R-Drive Image startup.
Trace drivers loading	Select this checkbox when you want to see loading drivers to find which one may lock the system.
Disables ACPI Disables APIC	Select these checkboxes when your system detects some hardware incorrectly during R-Drive Image startup and displays messages like: hda: lost interrupt
Disables USB devices support	Select these checkbox if your system experiences problems with USB devices during R-Drive Image startup.
Disables SCSI devices support	Select these checkbox if your system experiences problems with SCSI devices during R-Drive Image startup.
Disables PATA devices support	Select these checkbox if your system experiences problems with Parallel ATA devices during R-Drive Image startup.
Disables PCMCIA devices support	Select these checkbox if your system experiences problems with PCMCIA

94

	devices during R-Drive Image startup.
Disables DMA for all IDE disk drives	Select these checkbox if your system experiences problems with IDE disks during R-Drive Image startup.
IRQ polling mode	Select this checkbox if R-Drive Image does not recognize a device although it is in the supported device list.
Default clocksource	Select this checkbox to select computer default clocksource.
PCI BIOS	Select an appropriate option if your system experiences problems with computer hardware.
ACPI OSI	An option informing the computer BIOS which OS type is going to start. Default is Linux, but it may cause the computer BIOS to drop support for some computer hardware. Change this option if the startup version cannot recognize some computer hardware, or it malfunctions.
Disable specified drivers	Enter the drivers that may cause system lock. Driver names should be separated by a space or comma.

To create a startup CD disc:

Supported CD and DVD Recorders

1 Select Create Startup Disks on the Action Selection panel and click the Next button

in menu	Create Startup Disks	
Name	Туре	Burn speed
ISO ISO	ISO Image File	
CD/DVD/BD Drive (E:)	PIONEER DVD-RW DVR-219L 1.00	7056 KB/Sec
Removable (F:)	7.19GB (WINPE)	_
A USB startup device must b	7.19GB (WINPE) e already connected, formatted as a FAT/FAT32	 disk and have sufficient free
A USB startup device must b space.		

- 2 Select the CD-recorder in the list of supported startup devices with removable storage on the Create Sturtup Disk panel and click the Next button
- 3 Click the Start button on the **Processing** panel
- > R-Drive Image will start creating the startup CD disc

When you click the **Start** button, **R-Drive Image** will open the CD-R/RW drive tray and the **Insert a blank CD-R/RW disc...** message will appear. Insert a blank CD-R/RW disc and click the **OK** button. When **R-Drive Image** finishes creating the startup CD disc, the **Startup disks created successfully** message will appear.

95

If you mistakenly insert a non-empty CD-R/RW disc, the **CD-R/RW disc is not empty...** message will appear. Change the disc to another empty CD-R/RW disc and click the **OK** button.



To create an ISO image:

- 1 Select Create Startup Disks on the Action Selection panel and click the Next button
- 2 Select ISO on the Create Sturtup Disk panel, specify a file name for the ISO image, and click the Next button
- 3 Click the Start button on the **Processing** panel
- > When R-Drive Image finishes writing the file with the ISO image, the Startup disks created successfully message will appear

🕞 R-Drive Image		×
0	Startup disks created successfully	
	Ok	

4 Create the startup CD using your favorite CD creation software

Load the created ISO image into the CD creation software. Consult documentation for the software for details.

To create a startup USB removable device:

It may be a USB flash disk, ZIP drive, etc. It should be FAT/FAT32 <u>formatted</u> and connected to the computer before selecting **Create Startup Disks** on the **Action Selection** panel. If there is some data on that device, it will not be overwritten.

- 1 Select Create Startup Disks on the Action Selection panel and click the Next button
- 2 Select the required removable device in the list of supported startup devices with removable storage on the **Create Sturtup Disk** panel and click the Next button
- 3 Click the Start button on the **Processing** panel
- > R-Drive Image will start creating the startup USB disc

When **R-Drive Image** finishes creating the startup USB disk, the **Startup disks created successfully** message will appear.

A WindowsPE-based disk

Note: R-Drive Image supports creating WindowsPE startup disks starting from Windows 8.1. It's possible to create such disk from **R-Drive Image** on earlier Windows versions if you yourself correctly install a workable copy of WindowsPE Assessment and Deployment Kit (Windows ADK). Microsoft recommends Windows ADK from Windows 10 version 2004 (20H1) for versions prior to Windows 10.

- 1 Select Create Startup Disks on the Action Selection panel and click the Next button.
- 2 Click the Configuration button and select Windows-based in the Bootable media type dropbox.

You may need to install additional Windows components.

Startup Media Configuration		
ootable media type Windows-based 🔻		
Required third-party components		
A Windows Assessment and Deploym	ent Kit is not installed	
You need to download and install Windows	Assessment and Deployment Kit to create a bootab	ble media
Click the button below to download it for yo	ur Windows version from its site and install it.	
	D	Download
Reset to default	Ok	Cance
to set to delduit		Cance

- 3 Click the Download button and follow the instructions.
- 4 Click the OK button on the message that will appear when the components have been downloaded.



5 Click the OK button on Startup Media Configuration panel

Startup Media Configuration	
Bootable media type WindowsPE-based 💌	
Required third-party components	
Vindows Assessment and Deployment Kit - Wi	indows 10, version 10.1.19041.1
Additional drivers	
➡Add▼ 🗑 Remove 🛛 🗙 Remove all	
Reset to default	Ok Cancel

You may add additional drivers if necessary. Click the Add button and select the required .inf file. Added drivers will appear on the window.

^{© 2025} R-Tools Technology Inc.

97



6 Return to the Create Sturtup Disk, and click the OK button.

R-Drive Image will format the disk before writing new data to it. Old data will be therefore deleted from the disk.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

5.2 Load Computer into Startup Mode

Sometimes you may need to start your computer into **R-Drive Image** startup mode, for example, to restore data to a <u>system disk</u>.

You may do that through the following methods:

■If you have a Mac computer...

The startup version of **R-Drive Image** can perform basic disk imaging operations for Mac computers. See the Support for Various Disk Partition Schemes and File Systems section for details.

To start a Mac computer with the R-Drive Image startup disk,

1. Insert a CD/DVD disc or connect a USB disk

- 2. Switch the Mac on.
- 3. While loading, press the **Option** key on the Mac keyboard (the **Alt** key if you use a non-Apple keyboard).



4. Select the EFI boot disk and press Enter.



From the R-Drive Image Graphical User Interface

Note: You cannot use this method if your computer uses <u>UEF</u>I to start up. Use external startup media, like a USB or CD disk instead.

If you try to restart an UEFI computer from the Windows, you'll get a **Cannot prepare to reboot...** message.



1. Select the file with the image, the object in the image file, select the system disk as the destination as it is described in the <u>Restore Data from an Image</u> topic. Do not pay much attention to the image file, as it will be eventually discarded. The only important option at this stage is the image destination. Select the system disk.

99

- 2. When you click the Next button on the Image Object Selection panel, the Disk not locked message will appear.
- 3. Select Restart computer (recommended) and click the OK button. The You are about to restart... message will appear. Click the Yes button. (If you click the Cancel button on the Disk not locked message, the Cannot lock the disk message will appear, and R-Drive Image will stay on the Image Object Selection panel.)

	Unable to obtain exclusive access for all required drives. Edit operations to resolve the issue
R-Drive Image	Copy/Restore disk (operation 1 of 1) Model: VBOX HARDDISK 1.0 Connected: Image #1 Size: 1206B
Restarting You are about to restart your computer to continue data restoring in the R-Drive Image startup mode. You will need to repeat the data restoring procedure R-Drive Image could not perform in the Windows mode. We recommend you to read Restoring Data to a System or other Locked Disk Help section before you proceed. Image: PLEASE PAY YOUR ATTENTION! THE LETTERS ASSIGNED TO LOGICAL DISKS IN STARTUP MODE CAN BE DIFFERENT FROM THE LETTERS ASSIGNED IN WINDOWS OS. A MISTAKE CAN LEAD TO LOGICAL DISK OVERWRITING AND DATA LOSS Restart now?	Target HDD: VBOX HARDDISK 1.0 (120GB #1) Copying mode: Copy all partitions onto original places Estimated duration: 6 minute(s) 13 second(s) Retry to lock the disk once again
Yes No	Ok Cancel

You computer will restart. The following text will appear on the screen:



4. Select **R-DriveImage Autopart v.2.0** and press the **Enter** button. You may select **Microsoft Windows XP Professional** to start Windows normally.

using the R-Drive Image startup USB disk or CD disc

- 1. Make sure that the first startup device in the system BIOS is the required drive. If you are going to use the Linux-based startup disk, disable "Secure boot" in the system BIOS if your computer is certified to run Windows 8 and later. Refer to your system documentation for details. The WindowsPE-based disk doesn't require this step.
- 2. Connect the USB disk or insert the CD disc and start your computer.
- R-Drive Image will start in the startup mode.and a startup screen will appear:



Select the **R-Drive Image GUI (Graphic Mode)** to run **R-Drive Image** in the graphic mode in which its user interface is similar to the Windows version. if **R-Drive Image** cannot run in this mode, restart the system in the Safe VGA mode (only VESA-compliant) which is compatible with most video cards and monitors. If it fails too, select the Text mode in which the **R-Drive Image** user interface is shown in the pseudo-graphic mode compatible with all video cards. The help below describes this pseudo-graphic mode.

Use the **Tab** key to switch between the control areas and the arrow keys to select options within the control areas. Press the **Enter** key to activate the selected button.

You may also activate a key by pressing the highlighted letter key. You may exit the program by pressing the x key.

Secure boot:

It may be impossible to start a Windows 8 and later certified computer with the R-Drive Image startup disk without some additional actions. This happens because any computer should use a so-called "Secure boot" procedure to comply with Windows 8 hardware certification from Microsoft. In brief, this procedure prevents computer from booting into any operating system that isn't digitally signed with an appropriate digital signature. "Secure boot" is claimed to prevent unauthorized modification of the boot sector by bootkits, viruses, trojans, and other malicious software. To the date, only Windows 8, Windows Server 2012, and selected Linux distributions support this feature. As a side effect, it also prevents most LiveCDs, rescue disks (Linux-based R-Studio and R-Drive Image included), and other OS from running.

Likely enough, the other requirement of Windows 8 hardware certification is to make it possible for the user to disable the Secure boot procedure. Those settings can be done through the system BIOS under the Boot options. Generally, it's enough to enable Legacy support in those options, but sometimes it may require additional actions. Please, refer to your system documentation to learn more about disabling/enabling Secure boot.

When Secure boot is disabled, it should be possible to start the computer with the Linux-based R-Drive Image startup disk.

Please note that you should enable this feature back after using the startup disks because these versions of Windows or Servers may not start properly without the Secure boot feature enabled.

Before R-Drive Image starts working, it will require activation. An activation window will appear.



You need to enter a Computer Activation Code to proceed further. You may obtain it by either going to <u>User Console</u> on another computer or by scanning the QR-code by your phone.

Please note that some license restrictions may apply. The License Transfer help page explains them in detail. When the **Action Selection** panel will appear.



Specifying video settings for the GUI startup version. You may specify video screen resolution when necessary.



1 Select Display settings in the shortcut menu



2 Select the required screen resolution and click the OK button



5.3 Restore Data from an Image

Restoring data to a system or other locked disk:

Note: This help page describes the operation of the TUI startup version. Go to the **<u>Restore Data from an</u>** <u>**Image**</u> help page for the GUI version and to the <u>network drives</u> help If necessary.

You cannot restore data to the system (the disk from which Windows starts) or other locked disk the same way you do that to any other disk. You need either to restart **R-Drive Image** in its startup mode, or start your computer from another computer local disk or from specially created startup <u>disk(s)</u>.

We recommended that you print out this topic and have the hardcopy on hand while you are performing this action.

If there is a non-IDE disk controller in your system, or you plan to use network disks or external hardware devices, first check the List of Hardware Devices Supported in the Startup Mode.

If you plan to use any external device, turn it on before starting the system.

If the image to restore is located on cloud services or other places that may be unavailable to the startup version, copy it to some other location that **R-Drive Image** can reach.

103

If the motherboard in your computer supports the Serial ATA (SATA) devices, but IDE disks are also present, only the SATA devices should be set to the Enhanced Mode in BIOS.

Please, note that the startup version of **R-Drive Image** can restore data only to fixed-provisional Windows Storage Spaces. You may read more about thin-provisioned or fixed Windows Storage Spaces in <u>Microsoft's</u> <u>Storage Spaces Overview</u>.

We recommend you stop all other programs before you start restoring data on a partition.

- 1 Restart your computer in the startup mode
- 2 Select Restore Image on the Action Selection panel and press the N key Action Selection Panel



Use the arrow keys to switch between the options.

3 Select the file with the image on the **Open an Image File** panel and press the Enter key Open an Image File Panel

C: D: CD0	Disk1/Part01 NTFS Backup II Disk2/Part05 NTFS <dismounted></dismounted>	100GB 4 465GB	F_H- image .rdr F_H- image2 .rdr	<pre><goto level="" up=""> 2.03GB 10.10.12 41.2MB 11.10.12</goto></pre>
			F_H-image3.rdr HDD_ST380215A3.AAD.rdr	
			Test.rdr	
			XP_Test.rdr	
File name:	D: Unmount		File name: XP_Test.rdr	Unmount

R/O Read-only disk. You cannot create images on such disks.

Use the **Tab** key to switch between the control areas and the arrow and **Enter** keys to navigate within the **File** area.

You may also connect <u>network drives.</u>

4 Select the object in the image file on the **Select an object** panel you want to restore data from and press the N key

Select an object inside the from which you want to restor		
VBOX HARDDISK1.0	Disk@Image	100GB
C: Active Partition	Active NTFS	100GB

Select Source Object Panel

Use the arrow keys to select the object.

- 5 Select time and data of the data to restore on the Select Image Date/Time panel and press the N key Use the arrow keys to select the object
- 6 Select the destination for the data on the **Select a target for copy/restore operation** panel and press the N key

	<goto level≻<="" th="" up=""></goto>
	2.03GB 10.10.12
	41.2MB 11.10.12
	50.8MB 12.10.12
	45.4GB 03.07.12
	5.04GB 03.07.13
le mame: XP_Test.rdr	Unmount 🛛 OK

Select Target Object Panel

Use the arrow keys to switch between the target objects.

Н	Hard drive
Ρ	Primary partition
L	Logical disk
U	Unallocated space
7 Specify restore parameters on the Copy/restore options panel and press the N key Copy/Restore Options Panel



For restoring/copying one or several partition(s):

Restore Options	
Free space before	You may specify the size of free space that will be left on the hard drive before the beginning of the partition.
Partition size	You may specify the size of the partition to be restored. Should be between the minimum and maximum partition size.
Partition type Primary(Active) Primary Logical	You may specify the type of the partition to be restored. Do not change this setting unless you have serious reasons to do so.

For restoring/copying an entire hard drive to another hard drive: HDD Copy/Restore Options Panel



HDD Copy Method	
Raw disk copy	R-Drive Image writes sector-by-sector the data from the original drive or its image to the target one making an exact copy of the original disk regardless of its
	partitioning method. Can be used if other methods create a non-bootable disk due to incorrect detection of drive's geometry or non-standard loader. Drawback: partition sizes cannot be changed.
Copy all partitions onto original places	R-Drive Image copies all partitions to their original places. If R-Drive Image detects the drive's geometry correctly, and there is no non-standard loader, it makes the same result as during Raw disk copy.

106

Realign partitions	R-Drive Image will copy the partitions on the disk with a 512KB alignment. This is very useful for SSD and advanced- <u>formatted</u> disks. If there are empty (non-
	used) spaces between partitions, those spaces will be removed taking into account the alignment.
Expand/Shrink partition to whole disk	If there are empty (not-used) places between the partitions or they occupy less or more space than the target drive, R-Drive Image proportionally expands/shrinks them to occupy the entire target drive. Otherwise it is similar to Copy all partitions onto original places.
Fixed active partition	R-Drive Image preserves the original offset/size of the active partition (in case the loader has links to it).

See Support for Various Disk Partition Schemes and File Systems for details.

When you restore data from an image of a <u>system disk</u>, a disk signature collision may occur. In this case, the **Disk Signature Collision** panel will appear. You may specify the way to resolve this collision on this panel.

Disk Signature Collision	Resolving
Same signature for	R-Drive Image will create an identical copy of the source disk with the same
both disk	signature. To avoid disk signature collision, you'll have to disconnect one of the
	disks and restart the computer, if necessary. Use this mode if you clone a system
	disk for another computer or only the target disk will be used in yours.
Different signature on the target disk.	R-Drive Image will write another disk signature to the target disk. Don't use this
	mode if you clone a system disk, Windows won't start from it. To get access to the
	target disk after cloning, you'll have to restart the computer or re-connect it if it's
	an external USB disk.
Change the disk	R-Drive Image will change the disk signature on the source disk. Use this mode if
signature on the	you want to start Windows from the target disk, but be warned: the computer
source disk.	won't start from the source disk anymore.

8 Verify that the information on the **Confirm operations** panel is correct and press the N key

- > R-Drive Image will start restoring the data from the image file to the selected destination The Progress window will show the progress of the current operation and overall process. When the image is restored, the Operation completed successfully message will appear.
- 9 Verify that the information on the **Processing** panel is correct and click the Start button
- R-Drive Image will start restoring the files from the image file to the selected destination. When the image is restored, the Files restored successfully message will appear.



The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

107

5.4 Create an Image

Note: You may read about <u>Support for Various Disk Partition Schemes and File Systems</u> to learn more about possible options for your specific case.

It is recommended that you print out this topic and have the hardcopy on hand while you are performing this action.

Note: This help page describes the operation of the TUI startup version. Go to the <u>Create an Image</u> help page for the GUI version and to the <u>network drives</u> help If necessary.

If there is a non-IDE disk controller in your system, or you plan to use network disks or external hardware devices, first check the <u>list of supported hardware</u>.

If you plan to use any external device, turn it on before starting the system.

If the motherboard in your computer supports the Serial ATA (SATA) devices, but IDE disks are also present, only the SATA devices should be set to the Enhanced Mode in BIOS.

1 <u>Restart your computer in the startup mode</u>

2 Select Create an Image on the Select an action and press the N key

Use the arrow keys to switch between the options.

Action Selection Panel



R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress. Then the **R-Drive Image: Select an object you want to archive/backup/copy** panel will show the configuration.

Н	Hard drive
Р	Primary partition
L	Logical disk
U	Unallocated space

3 Select an object which image you want to create on the Select source object panel and press the N key

Use the arrow keys to switch between the objects and the **SPACEBAR** to select the object.

Select Source Object Panel



4 Select the place on the Create an Image panel to which the image files will be written, specify the file name, and press the O key

C: D: CDO		iisk1/Part01 isk2/Part05		1006B 4656B	\$RECYCLE.BIN System Volume R-DriveImage_S	Information AystemDump-2021-07-30.txt	<goto up<br=""><folder> <folder> -391.5KB</folder></folder></goto>	30.07.21 30.07.21
file name: Sa∨e as type:	Specified (*.rdr)		Unmount	OK	File name: Save as type:	System_ Specified (*.rdr) inp Neti	Unmount	

Create an Image File Panel

R/O Read-only disk. You cannot create images on such disks

Use the **Tab** key to switch between the control areas.

External USB drives with the NTFS file system: the startup version of **R-Drive Image** can save image files on such disks if they are properly disconnected in a Windows system using the **Safely Remove Hardware** icon in the system tray or while shutting Windows down.

You may also connect <u>network drives</u>.

5 Specify image options on the Image Options panel and click the Next button

You may specify image options on this panel.

Image Options Panel

109

on sector ta only
ta onlu
La only

Image options

Options	
Image name:	Shows the file name for the image. You cannot change the file name on this panel.
Check the image file immediately upon its creation	Select this option if your want R-Drive Image to check the newly created file image for its consistency. This may be useful for storing image files with critical data. Please note that this operation requires additional time.
Image compression ratio	You may compress the data in the image to save space. Please note that the smaller size you select the more time will be spent to create the image file and vise versa.
Backup type	You may store in the image either the exact Sector by backup copy of the object or Backup useful information only, that is, you do not have to store empty space of the object in image files. See <u>Support for Various Disk Partition Schemes and</u> <u>File Systems</u> for the list of supported file systems.
Estimated size	Shows the estimated size of the image file. An actual image size depends on how much empty space is on the selected partition and what file types are there.
Image split size	You may set this option to Automatic and let Windows decide how to split the image file. This mostly depends on the file system on the destination disk. You may also either explicitly specify the split size, or choose a preset for various devices with removable storage. Select Fixed size for that.
Password	You may protect your image file with a password. Note: If you leave the Encrypt image option clear this feature will provide a relatively moderate protection against conventional unauthorized access. If this option is selected, R-Drive Image will encrypt the image using the AES-XTS algorithm.
Image description	You may attach a text description to the image for annotation. Maximum length of the description is 255 characters.

6 Verify that the information on the Confirm operations panel is correct and click the N key

> R-Drive Image will start creating the image file

The Progress window will show the progress of the current operation and overall process. If you selected a read-only disk as the target, you will see the **File is read-only. Press OK to retry**. message.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain <u>R-Drive Image Contact Information and Technical Support</u>

5.5 Disk to Disk Copy

It is recommended that you print out this topic and have the hardcopy on hand while you are performing this action.

Note: This help page describes the operation of the TUI startup version. Go to the <u>Copy a Disk to a Disk</u> help page for the GUI version and to the <u>network drives</u> help If necessary.

If there is a non-IDE disk controller in your system, or you plan to use network disks or external hardware devices, first check the <u>list of supported hardware</u>.

If you plan to use any external device, turn it on before starting the system.

If the motherboard in your computer supports the Serial ATA (SATA) devices, but IDE disks are also present, only the SATA devices should be set to the Enhanced Mode in BIOS.

- 1 <u>Restart your computer in the startup mode</u>
- 2 Select Disk to disk copy on the Action Selection panel and press the N key

R-Drive Image will start analyzing the computer disk configuration, the **Progress...** message showing the progress. Then the **R-Drive Image: Select an object you want to archive/backup/copy** panel will show the configuration.



Action Selection Panel

Н	Hard drive
Ρ	Primary partition
L	Logical disk
U	Unallocated space

Use the arrow keys to switch between the options.

111

3 Select an object you want to copy on the **Select an object you want to archive/backup/copy** panel and press the N key

Select an object you want to archive/backup/copy Panel R-Drive Image: Select source obi Select an object(s) you want to archive/backup/copy /BOX HARDDISK1.0 Active Partition Disk ATAPI@PriMs Active NTFS 1006 100GI SAMSUNGSP0411N0-11 Disk USB04:0 37GB 200MB 1024MB 128MB Disk Object Disk Öbject Boot OS X Disk2 HFS+ HFSX 102.4MB DISK3 HFSX 1024MB Disk Object FAT32 3361 Disk USB05:0 SB 2.0Storage Device0100 Primary NTF Ab

Use the arrow keys to switch between the objects.

4 Select the destination for the data on the **Select a target for copy/restore operation** panel and press the N key

Select a target for copy/restore operation Panel

Active Partition	Active NTFS	100GB
Unused Space	Unused	15MB
		37GB
Disk Object	FAT32	ZOOMB
Disk Object		102.4MB
Boot OS X	HFS+	128MB
Disk2	HFSX	1024MB
		128MB
DISK3	HFSX	1024MB
		128MB
Disk Object	FAT32	33GB
		37GB 🛛
USB2p0	Primary NTFS	37GB 🗸

Use the arrow keys to switch between the target objects.

5 Specify restore parameters on the Copy/restore options panel and press the N key Copy/restore options Panel



For restoring/copying one or several partition(s): Restore Options

Free space before	You may specify the size of free space that will be left on the hard drive before the beginning of the partition.
Partition size	You may specify the size of the partition to be restored. Should be between the minimum and maximum partition size.
Partition type Primary(Active) Primary Logical	You may specify the type of the partition to be restored. Do not change this setting unless you have serious reasons to do so.

For restoring/copying an entire hard drive to another hard drive: HDD Copy/restore options Panel



HDD Copy Method				
Raw disk copy	 R-Drive Image writes sector-by-sector the data from the original drive image to the target one making an exact copy of the original disk regardless partitioning method. Can be used if other methods create a non-bootable dis to incorrect detection of drive's geometry or non-standard loader. Drawback: partition sizes cannot be changed. 			
Copy all partitions onto original places	R-Drive Image copies all partitions to their original places. If R-Drive Image detects the drive's geometry correctly, and there is no non-standard loader, it makes the same result as during Raw disk copy.			
Realign partitions	R-Drive Image will copy the partitions on the disk with a 512KB alignment. This is very useful for SSD and advanced- <u>formatted</u> disks. If there are empty (non-used) spaces between partitions, those spaces will be removed taking into account the alignment.			
Expand/Shrink partition to whole disk	If there are empty (not-used) places between the partitions or they occupy less or more space than the target drive, R-Drive Image proportionally expands/shrinks them to occupy the entire target drive. Otherwise it is similar to Copy all partitions onto original places.			
Fixed active partition	R-Drive Image preserves the original offset/size of the active partition (in case the loader has links to it).			
Soo Support for Varia	us Disk Partition Schemes and File Systems for details			

See Support for Various Disk Partition Schemes and File Systems for details.

When you copy a <u>system disk</u>, a disk signature collision may occur. In this case, the **Disk Signature Collision** panel will appear. You may specify the way to resolve this collision on this panel.

Disk Signature Collision	Resolving
Same signature for	R-Drive Image will create an identical copy of the source disk with the same

both disk	signature. To avoid disk signature collision, you'll have to disconnect one of the
	disks and restart the computer, if necessary. Use this mode if you clone a system
	disk for another computer or only the target disk will be used in yours.
Different signature on	R-Drive Image will write another disk signature to the target disk. Don't use this
the target disk.	mode if you clone a system disk, Windows won't start from it. To get access to the
	target disk after cloning, you'll have to restart the computer or re-connect it if it's
	an external USB disk.
Change the disk	R-Drive Image will change the disk signature on the source disk. Use this mode if
signature on the	you want to start Windows from the target disk, but be warned: the computer
source disk.	won't start from the source disk anymore.

- 6 Verify that the information on the **Confirm operations** panel is correct and click the N key
- > R-Drive Image will start copying the data from the source disk to the selected destination

The Progress window will show the progress of the current operation and overall process. When the data is copied, the **Operation completed successfully** message will appear.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

5.6 Create an Image from Files

This action is available on the GUI version only. Go to the the <u>Create an Image from Files</u> help page for instruction and to the <u>network drives</u> help If necessary.

5.7 Partition Manager

This action is available on the GUI version only. Go to the the <u>Partition Manager</u> help page for instruction and to the <u>network drives</u> help If necessary.

5.8 Check an Image File

Note: This help page describes the operation of the TUI startup version. Go to the <u>Check an Image File</u> help page for the GUI version and to the <u>network drives</u> help If necessary.

To check an image file:

1 Click Check an Image File on the Action Selection panel



2 Select the file with the image on the **Open an Image File** panel and click the Next button Open an Image File Panel

:	►USB2p0	Disk1/Part01 Disk2/Part01	NTFS NTFS	100GB	 Sustem Un	lume Information	<goto level<br="" up=""><folder> 13.07.1</folder></goto>
D0	<dismounted></dismounted>		111.0	51.500	Test.rdr		4.12GB 03.07.1
				2 0			
le mame:	D:		Unmount 🔳	OK	File mame:	Test.rdr	Unmount - OK

You may also connect network drives.

115

- 3 Verify that the information on the **Processing** panel is correct and click the Start button
- > R-Drive Image will start checking the data in the image file.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

5.9 Network Drives

If your computer is on a local network, you may write image files or restore images to / from network drives. To do so, you need to map such a network drive.

To map a network drive,

1 Click the Map Network Drive button and enter required information

Map Network Drive



For the network drive' path //SERVER/Backups, Server IP address: The IP address of the SERVER computer Server share name: Backups.

Sometimes it may be necessary to manually configure network settings, if, for example, there is no DHCP server on the network. Click the **Configure network** button, select the required field, click the **Edit Address** button, and enter the required information.

ge 📕	eployment 7.0 (Build 7000) - Create Ima	nmercial System De	R-Drive Image Con
	ion X	Network configurat	Main menu
	dapter: eth0 (Intel(R) PRO/100+) 🔻		🕀 🎑 C: (System
		Configuration met	🕀 🎑 D: (Images
	-	Configure u	🕀 🎑 F: (FAT-TE
	nanually	O Configure n	
	igs	Adapter settin	E Z: (System
	10.0.2.15	IPv4 address	
	255.255.255.0	Network mask	
	10.0.2.2	Default gateway	👥 Map r
	10.0.2.2	Delauli galeway	
mage format	OK Cancel		File name:
	Options 3 Disks Selecte		

Network Settings

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain <u>R-Drive Image Contact Information and Technical Support</u>

VI Scheduled Actions, Command Line Operations, and Scripting

This chapter explains how to start disk actions automatically at scheduled times/events and create scripts that can be performed from a command line or command files.

- Batch Mode
- <u>Scheduler and Unattended Actions</u>
- <u>Rotation Options (Backup Sets)</u>
- <u>Scripting and Command Line Operations</u>

The **Disk Actions** chapter explains disk actions such as:

- Create an Image of a partition, logical disk, or entire hard drive
- <u>Create an Image from Files</u>
- Copy Files to a Folder
- <u>Restore Data from an Image</u>
- Copy Disk to Disk to make an exact copy of one disk on another
- Manage partition and logical disks
- Mount an Image as a Virtual Logical Disk (read-only)
- <u>Unmount Virtual Logical Disks</u>
- Check an Image File to check an existing image file

The **RAIDs**, and Various Disk and Volume Managers chapter explains how to perform disk actions with various compound volumes such as:

- Hardware RAIDs
- <u>BitLocker Drive Encryption</u>
- Windows Software RAIDs, Spanned, and Other Volumes
- <u>Windows Storage Spaces</u>
- Apple RAIDs
- <u>Apple CoreStorage/File Vault/Fusion Drive Volumes</u>
- Linux mdadm RAIDs
- Linux Logical Volume Manager Volumes

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup Version** such as:

- <u>Create Startup Disk</u>
- Load Computer into Startup Mode
- <u>Restore Data From an Image</u>
- Create an Image
- Disk to Disk Copy
- Create an Image from Files
- <u>Partition Manager</u>
- Check an Image File
- Network Drives

The **Technical Information** chapter gives technical information on

- <u>Updates</u>
- Cloud Services
- <u>FTP/FTPS/SFTP Servers</u>
- Network-Drives
- Image Replications
- Logging
- Creating consistent point-in-time backups
- Support for Various Disk Partition Schemes and File Systems
- Supported Virtual Disk and Disk Image Formats:
- Disk Wiping Algorithms
- Supported CD and DVD Recorders
- List of Hardware Devices Supported in the Startup Mode

The <u>**R-Drive Image OEM kit</u>** chapter explains how computer system integrators can create system recovery disks for their systems</u>

- Create a Master Image
- <u>Create Startup Media</u>

Follow this link to obtain **R-Drive Image Contact Information and Technical Support**

117

6.1 Scheduler and Unattended Actions

You may schedule some disk actions at a certain time or event, and **R-Drive Image** will perform them unattended. You may also execute a task manually. Right-click the task and select **Execute Now** in the context menu.

- Create a task
- Edit a task
- Delete a task
- Run a Task Manually

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

6.1.1 Create a Task

Generally, you may set a scheduled task the same way you set a regular action for creating an image of a disk, partition, or an entire hard drive.

To create a new task:

1 Click Scheduler/Create Script on the Action Selection panel

The **Scheduled Tasks** panel will appear.

You may create a task for creating an image, image from files, or verifying an image.

0 +	• 📀 •	× 🛗	Ì	5
Main menu Create ta	sk Create script	Edit task Edit event	Delete task	
Task name	Event	Last start	Result	Status
R-Drive Image Task #1	on the First Sunday of January, February, Ma	Never		Disabled
R-Drive Image Task #2	once on 2:49 PM at 1/17/20	Sun, Jul 25, 2021 2:59:53 PM	76%	Running

2 Click the Create Task button on the Scheduled Tasks panel

3 Select the objects you want to backup on the Partition Selection panel, image destination on the Image Destination panel, specify necessary parameters on the Image options, Notification options, Backup options panels, and on the Rotation options panel.

Go through these steps as if you were starting up an actual backup.

Right-click the selected partition and select **Backup selected files** if you want to backup only individual files on the partition.

Images can be replicated, that is, their copies may be saved to one or other different locations.

Attention: If you a going to use a network drive, please note that if this drive is connected under your account it will be inaccessible to the task run under the local system account unless this drive is also connected to the local system account using the same disk letter. To avoid this problem, you need either to run the task under your own account, or use a UNC path in the form: \\[[domain;]username[:password]@]hostname\share\path.

Go to the Create an Image topic for more details.

Please note that you may use <u>Rotation options (backup sets)</u> for creating complex data backup tasks and maintaining data files.

ask and scripts		Rotation o	ptions		
Rotation scheme		Simple	-		
Imaging mode		Differential	Differential		
Full image every		e	images 🌲		
Maximum number o	of full images		3 🔺		
Maximum age of ful	l images	2	21 day(s)		
Maximum number o	of image files				
Maximum size of all	l image files	2	30 + 20000MB +		
Apply quota Afte	r imaging	•			
Always keep firs	st fu <mark>ll</mark> image				
Tier	Mode	Keep images	Keep period	When exceeded	
On each 1 image	Differential	Unlimited	Forever	No action	
On each 6 images	Full	3 images	21 days	Delete	

4 Specify the time or event at which the task should start on the Task execution schedule panel and click the Next button

Perform this task	Monthly -	Month schedule
Task is Active	montany	Months January;February;March;April;May;Jt =
Vakeup computer t	o run this task	O Days 1
Run missed task as	soon as possible	
Start time	12:00:00 PM	● On First ▼ Sunday ▼
Repeat task every	15 minutes	
Delay task for up to	15 minutes	
Start date	8/1/2015	
End date	12/31/2015	
Run under user accour	nt	
🖌 Local system		
User name		Default
This task is s	cheduled to run on the	First Sunday of January, February, March,
		ember, October, November, December at

You may specify time/event options on this panel.

■*Task* execution schedule options

Task is active	If this options is not selected, the task will not start at its scheduled time/event
Wakeup the computer to run this task	If this checkbox is selected, your computer will automatically start up to perform this task. You need to check whether Windows is set to wake on all timers. (Control panel -> Hardware and Sound -> Power Options -> Change Plan Settings -> Change Advance Power Settings -> Sleep -> Allow Wake Timers - > Enable. Most computers have this setting to Important Wake Timers Only. Windows won't wake under this settings.)
Run missed task as soon as possible	If this checkbox is selected, this task will start as soon as it's possible.
Perform this task:	
Daily	The task will start repeatedly on a daily time interval
Start time:	Time at which the task will start
Repeat task every:	Time interval in which the task will be repeated within one day
Delay task up to:	Time interval in which the task will randomly start. May be useful when several images are being created simultaneously.
Start date:	Date from which the task will start
Run this task every:	Time interval in days in which the task will regularly start
End date: (optional)	Date from which the task will not start anymore
Weekly	The task will start repeatedly on a weekly time interval

Start time:	Time at which the task will start
Repeat task every:	Time interval in which the task will be repeated within one day
Delay task up to:	Time interval in which the task will randomly start. May be useful when several images are being created simultaneously.
Start date:	Date from which the task will start
Run this task every:	Time interval in weeks in which the task will regularly start
On days:	Days of the week on which the task will start
End date: (optional)	Date from which the task will not start anymore
Monthly	The task will start repeatedly on a monthly time interval
Start time:	Time at which the task will start
Repeat task every:	Time interval in which the task will be repeated within one day
Delay task up to:	Time interval in which the task will randomly start. May be useful when several
	images are being created simultaneously.
Start date:	Date from which the task will start
Month schedule	
On day of month	Day of the month on which the task will start
Or	Weekdays in the month on which the task will start
Months	Months when the task will start
Once	The task will start once or repeat it every certain time interval on one day
Start time:	Time on which the task will start
Repeat task every	Time interval in which the task will regularly start
Delay task up to	Time interval in which the task will randomly start. May be useful when several images are being created simultaneously.
Start date:	Date from which the task will start
At system startup	The task will start at every system startup
At user logon	The task will start every time a user will log on
Manually	This task should be started <u>manually</u> .
Run under user account	A username and password for a user from the Administrators user group.

> A new task will appear on the Scheduled Tasks panel

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

121

6.1.2 Edit a Task

You may edit a scheduled task.

To rename a task

- 1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks panel will appear.
- 2 Right-click the task which you want to rename on the Scheduled Tasks panel
- 3 Select in the context menu Rename and enter a new task name Note: You may also use a keyboard shortcut F2 to rename a task

To edit the time or event at which a scheduled task should start:

1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks namel will ennear

The Scheduled Tasks panel will appear.

2 Select a task which event you want to edit on the **Scheduled Tasks** panel and click the Edit an Event button

The Task execution schedule panel will appear.

Note: You may also right-click the task and select Edit an event in the context menu.

3 Edit the time or event at which the task should start on the Task execution schedule panel and click the Save button

Go to the Create a Task topic for details

> The task will appear on the Scheduled Tasks panel with the new starting Time/Event

To edit an entire scheduled task:

- 1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks panel will appear.
- 2 Select a task which you want to edit on the Scheduled Tasks panel and click the Edit button Note: You may also right-click the task and select Edit a task in the context menu.
- 3 Edit the objects you want to backup on the Partition Selection panel, image destination on the Choose destination of new image panel, necessary parameters on the Image options, Notification options, Backup options panels, and on the Rotation options panel.

Go to the Create an Image topic for more details.

4 Edit the time or event at which the task should start on the Task execution schedule panel, and click the Save button

Go to the <u>Create a Task</u> topic for more details.

> The task will appear on the Scheduled Tasks panel with the new options

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

6.1.3 Delete a Task

You may delete a scheduled task that you do not need any more.

To delete a scheduled task:

- 1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks panel will appear.
- 2 Select a task you want to delete on the Scheduled Tasks panel and click the Delete a Task button or Right-click the task and select Delete a Task in the context menu.

The **Delete selected task** message will appear.



- 3 Click the OK button
- > The task will disappear on the Scheduled Tasks panel

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

6.1.4 Run a Task Manually

You may run a task manually at any time.

To run a scheduled task manually:

- 1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks panel will appear.
- 2 Right-click a task you want to run and select Execute now on the context menu.

You may also create a script from a task and run it manually.

6.2 Rotation Schemes (Backup Sets)

<u>Rotation backup schemes</u> is a way to create sets of files (usually a file for a full image of an object and a number of its <u>incremental/differential</u> backups) which **R-Drive Image** treats as one unit. Those schemes may be used to create images of the same objects with the same filenames but with different parameters. Rotation schemes make it possible for you to flexibly control the parameters of complex backup tasks.

You may specify a total size allocated for the image files, a number of image files you want to keep, and the time for which you want to keep the data, etc. All this can be done on the **Rotation options** panel.

R-Drive Image supports the following types of rotation schemes:

• Simple Rotation Schemes

• <u>Custom Rotation Schemes</u> (available only in the Corporate, Technician, and Commercial licenses) And this page gives an example of the outcome of a rotation scheme:

• An example of a rotation scheme

6.2.1 Simple Rotation Schemes

These scheme types are available in all **R-Drive Image** licenses: The following simple rotation schemes can be used:

No rotation

No rotation

and scripts		Rotation optio
Rotation scheme	No rotation	T
Imaging mode	Differential	-
	Overwrite	
	Differential	
	Incremental	

Imaging mode

Specifies how the data will be written to an existing image file.

Incremental: Select this option to preserve the data in the existing image file and append only changes. Appended changes will be those between the last saved changes and the current state. You may restore data as they were on each time of data imaging.

Differential: Select this option to preserve the data in the existing image file and append only changes. Appended changes will be those between the first saved full image and the current state. You may restore data as they were on each time of data imaging.

Overwrite: Select this option if you want to completely replace the data in the image file.

Minimum file sizes: If you need to keep only the latest backup instant, you may use the Ddifferentially option and delete all previous differential files. If you need to keep all instances, you may use the Incrementally option to keep overall file sizes smaller.

Data safety: If any of the differential file is damaged, data will be lost only for that backup instant. If any of the incremental file is damaged, data will be lost for all subsequent backup instances starting from the damaged file until the next full of differential backup.

Rotation scheme outcome: the first image will be a full one, the rest images will be differential ones.

Simple

Simple rotation scheme

ask and scripts						
Rotation scheme		Simple		-		
Imaging mode		Differential	Differential 👻			
Full image every			6 images 🌲			
Maximum number o	of full images		3	A 7		
Maximum age of ful	l images		20 day(s)	* *		
Maximum number o	of image files		22	×		
Maximum size of al	l image files	5	00000MB			
	r imaging	*				
Always keep firs	st full image					
Tier	Mode	Keep images	Ke	ep period	When exce	eded
On each 1 image	Differential	Unlimited	F	Forever	No actio	n
On each 6 images Full		3 images	3 images 20 days		Delete	

□ Simple rotation schemes options

-	
Imaging mode	 Full: All data in the image file will be replaced with the current one. Differentially: Appended changes will be those between the saved full image and the current state. If there is no full image, it will be created instead. When restoring data, you will need the full image and ONLY the differential file created at the instant to which you want to restore data. Incrementally: Appended changes will be those between the last saved changes and the current state. If there is no full image, it will be created instead. When restoring data, you will need the full image and ALL files (both incremental and differential ones) created to the instant to which you want to restore data. Minimum file sizes: If you need to keep only the latest backup instant, you may use the Ddifferentially option and delete all previous differential files. If you need to keep all instances, you may use the Incrementally option to keep overall file sizes smaller. Data safety: If any of the differential file is damaged, data will be lost only for that backup instant. If any of the incremental file is damaged file until the next full of differential backup.
Full image every	Specifies the number of differential/incremental images after which a full image will be created.
Maximum number of full images	Specifies the number of full images. If it is exceeded, the older full backup files will be removed.
Maximum age of full images	Specifies the number of days for which R-Drive Image will keep full image files. Then the files will be removed.
Maximum number of image files	Specifies the number of image files. If it is exceeded, the older files will be removed.

Maximum size of all image files	Specifies the total size of all files. If it is exceeded, the older files will be removed.
Apply quota	 Before & After imaging: the settings will be applied before creating the image, but as if it's already been created. For example, if the number of files is set to 3, and there are already 3 files, the oldest file will be deleted before creation of the new image file. After imaging: R-Drive Image will create the image file first, then deletes the oldest file.
Always leave first full image	If this option is selected, the very first image will always be kept.

Note: when a full image file is deleted according to the specified options, **R-Drive Image** deletes all differential/incremental image files related to that full image.

Rotation scheme outcome: the first image will be a full one, then next 6 images will be differential ones, then another full image, followed by 6 differential images. One full image and all respective differential imaged will be deleted when 3 full images have been created, You may see the outcome of this scheme on the <u>An</u> example of a rotation scheme help page.

You may read more about next rotation schemes in Wikipedia: Backup rotation scheme.

Grandfather-Father-Son

Grandfather-Father-Son scheme

sks and scripts		Rotat	ion options		
Rotation schen	ne	GrandFath	er-Father-Son	•	
Imaging mode		Mixed		•	
Keep Daily ima	ges		7 days	×	
Keep Weekly ir	nages		4 weeks	A V	
Keep Monthly in	mages		3 months	*	
Maximum size	of all image files		unlimited	A T	
Apply quota	After imaging	-			
Always kee	p first full image				
Tier	Mode	Keep images	; Kei	ep period	When exceeded
On each 1 day	Incremental	Unlimited	7	days	Delete
On each 1 week	Differential	Unlimited	4	weeks	Delete
On each 1 month	Full	Unlimited	3.	nonths	Delete

Grandfather-Father-Son schemes options

Keep Daily images	Specifies the number of days for which R-Drive Image will keep Daily image files. Then the files will be removed.
Keep Weekly images	Specifies the number of weeks for which R-Drive Image will keep Weekly image files. Then the files will be removed.
Keep Monthly images	Specifies the number of months for which R-Drive Image will keep Monthly image files. Then the files will be removed.
Maximum size of all image files	Specifies the total size of all files. If it is exceeded, the older files will be removed.

Apply quota	Before & After imaging: the settings will be applied before creating the image,
	but as if it's already been created. For example, if the number of files is set to
	3, and there are already 3 files, the oldest file will be deleted before creation
	of the new image file.
	After imaging: R-Drive Image will create the image file first, then deletes the
	oldest file.
Always leave first full image	If this option is selected, the very first image will always be kept.

Rotation scheme outcome: the first image will be a full one, then every day a incremental image, every week a differential image, every month a full image. All incremental images will be deleted when a differential image has been created. All differential images will be deleted when a monthly image has been created. The oldest full image and respective differential / incremental images will be deleted in 3 months.

Tower-of-Hanoi

Tower-of-Hanoi



Tower-of-Hanoi schemes options

Number of tiers	Number of successive image creation steps/
Keep Monthly images	Specifies the number of months for which R-Drive Image will keep Monthly image files. Then the files will be removed.
Apply quota	Before & After imaging: the settings will be applied before creating the image, but as if it's already been created. For example, if the number of files is set to 3, and there are already 3 files, the oldest file will be deleted before creation of the new image file.After imaging: R-Drive Image will create the image file first, then deletes the oldest file.
Always leave first full image	If this option is selected, the very first image will always be kept.

Rotation scheme outcome: the first image will be a full one, the next image will be the differential one, then an incremental one. A full image will be created in 4 images. The rest of the images will be deleted.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain <u>R-Drive Image Contact Information and Technical Support</u>

6.2.2 Custom Rotation Schemes

These scheme types are available only in the Corporate, Technician, and Commercial licenses.

It gives much more flexibility to you in controlling the outcome of the rotation scheme.

Custom rotation scheme

Rotation	scheme			Disk E Monthly	P	0				
reduction	Scheme			Disk_C_Mondaly		-				
Maximum	n number of image	e files		10 🌲	On e	xcee	d			
Maximum	n size of all image	files		500000 MB	Dele	ete	-			
Apply quo	ota After imagi	ing	•							
		•	•							
	ota After imagi ys leave first full ir	•	•							
	ys leave first full in	•	▼ Mode	Keep Images		ł	Keep period		On Excee	d
Alway	ys leave first full in	nage	Mode	Keep Images		6	Keep period Day(s)	•	On Excee Delete	
Alway	ys leave first full in	mage + • Increr	Mode mental 💌	6					1000 (100) (100) (1000 (100) (1000 (1000 (100) (1000 (100) (1000 (1000 (1000 (100) (1000 (100) (1000 (100) (:d

Custom rotation schemes options

Rotation scheme	The name of the rotation scheme.
Maximum number of image files	Specifies the number of image files. If it is exceeded, the older files will be removed.
Maximum size of all image files	Specifies the total size of all files. If it is exceeded, the older files will be removed.
On exceed	Specifies the action that performs when the quota is exceeded. The following actions are available: No actions Delete Move Command
Apply quota	Before & After imaging: the settings will be applied before creating the image, but as if it's already been created. For example, if the number of files is set to 3, and there are already 3 files, the oldest file will be deleted before creation of the new image file. After imaging: R-Drive Image will create the image file first, then deletes the oldest file.
Always leave first full image	If this option is selected, the very first image will always be kept.

Note: when a full image file is deleted according to the specified options, **R-Drive Image** deletes all <u>differential/incremental</u> image files related to that full image.

Rotation scheme outcome: the first image will be a full one, then next 6 images will be incremental ones, then a differential image, the incremental images will be deleted. then next 6 incremental images and another differential image. A full image will be created once a month.

6.2.3 An example of a rotation scheme

Below is an example to illustrate creation of a rotation scheme. You need to enter your own data to create your own rotation scheme.

The scheme and settings

This scheme is shown on the <u>Simple Rotation Scheme</u> help page. It should create a full backup every Sunday and differential backups every other day. The task should start at 5:00 PM and 3 full backup images should always be kept.

	Simple
Imaging mode	Differential
Full image every	6 images
Maximum number of full images	3
Maximum image files age	20 days
Maximum number of image files	22
Maximum size of all image files	500000 MB
Apply quota	After imaging
Always leave first full image	No

It has the following parameters:

The setting should be the following:

On the Rotation options panel

The following setting should be specified:

Simple rotation scheme

	Always keep	Mode					When ex No ac	
Imaging mode Differential Full image every 6 images Maximum number of full images 3 ÷ Maximum age of full images 20 day(s) ÷ Maximum number of image files 22 ÷ Maximum size of all image files 500000MB ÷ Apply quota After imaging Always keep first full image *	Always keep		Keep im	ages K	eep p	period	When ex	ceede
Imaging mode Differential v Full image every 6 images * Maximum number of full images 3 * * Maximum age of full images 20 day(s) * * Maximum number of image files 22 * * Maximum size of all image files 500000MB * *		p first full image						
Imaging mode Differential v Full image every 6 images * Maximum number of full images 3 * * Maximum age of full images 20 day(s) * * Maximum number of image files 22 * * Maximum size of all image files 500000MB * *								
Imaging mode Differential Full image every 6 images Maximum number of full images 3 Maximum age of full images 20 day(s) Maximum number of full image files 22		After imaging	v l					
Imaging mode Differential Full image every 6 images 3 Annum number of full images 20 day(s) Annum number of image files 20 day(s) 20	Maximum size o	of all image files		500000MB	*			
Imaging mode Differential Full image every 6 images Maximum number of full images 3	Maximum numb	per of image files		22				
Imaging mode Differential Full image every Maximum number of full images 3	Maximum age o	of full images		20 day(s)	* *			
Imaging mode Differential v Full image every 6 images v				3	* *			
				6 images	*			
	Imaging mode		Differe	Differential				
		ie	Simple		-			
ask and scripts	sk and scripts							
Rotation options	sk and scripts		Ro	tation options				

On the Task execution schedule panel:

The following setting should be specified:

Task execution schedule

Perform this task	Daily	*	Day schedule	
Task is Active			Day 1	
Wakeup computer to	o run this task			
Start time	5:00 PM	<u>A</u>		
Repeat task every	15 minutes			
Delay task for up to	15 minutes			
Start date	8/2/21	1949		
End date	8/11/21	(171)		
Run under user accoun	t			
Local system				
Jser name	Default			

And the task should be activated on Monday, say, August 2, 2021.

File name convention:

```
Full backup:<FIleName>_<Date_of_First_Backup>_<Time_of_First_Backup>_1.rdrDifferential<FIleName>_<Date_of_First_Backup>_<Time_of_First_Backup>_1_N+1.rdrbackup:
```

 $\ensuremath{\mathbb{N}}$ is the number of differential backup

The scheme outcome

The files created

Date Day	Files created on the destination, the last is the newly created on;Comments
8/2/2021 Monday	<pre>Test_Image_08022021_05PM0000_1.rdr ;Full backup 1</pre>

8/3/2021	Test Image 08022021 05PM0000 1.rdr ;Full backup 1
	Test Image 08022021 05PM0000 1 1.rdr ;Differential backup 1:1
Tuesday	
8/4/2021	Test_Image_08022021_05PM0000_1.rdr ;Full backup 1
Wednesday	<pre>Test_Image_08022021_05PM0000_1_1.rdr ;Differential backup 1:1</pre>
	<pre>Test_Image_08022021_05PM0000_1_2.rdr ;Differential backup 1:2</pre>
8/5/2021	Test_Image_08022021_05PM0000_1.rdr ;Full backup 1
Thursday	<pre>Test_Image_08022021_05PM0000_1_1.rdr ;Differential backup 1:1</pre>
5	<pre>Test_Image_08022021_05PM0000_1_2.rdr ;Differential backup 1:2</pre>
	<pre>Test_Image_08022021_05PM0000_1_3.rdr ;Differential backup 1:3</pre>
8/6/2021 Friday	Test_Image_08022021_05PM0000_1.rdr ;Full backup 1
	<pre>Test_Image_08022021_05PM0000_1_1.rdr ;Differential backup 1:1</pre>
	Test_Image_08022021_05PM0000_1_2.rdr ;Differential backup 1:2
	Test_Image_08022021_05PM0000_1_3.rdr ;Differential backup 1:3
	Test_Image_08022021_05PM0000_1_4.rdr ;Differential backup 1:4
8/7/2021	Test_Image_08022021_05PM0000_1.rdr ;Full backup 1
Saturday	<pre>Test_Image_08022021_05PM0000_1_1.rdr ;Differential backup 1:1</pre>
	Test_Image_08022021_05PM0000_1_2.rdr ;Differential backup 1:2
	Test_Image_08022021_05PM0000_1_3.rdr ;Differential backup 1:3
	Test_Image_08022021_05PM0000_1_4.rdr ;Differential backup 1:4
	Test_Image_08022021_05PM0000_1_5.rdr ;Differential backup 1:5
8/8/2021 Sunday	Test_Image_08022021_05PM0000_1.rdr ;Full backup 1
	Test_Image_08022021_05PM0000_1_1.rdr ;Differential backup 1:1
	Test_Image_08022021_05PM0000_1_2.rdr ;Differential backup 1:2
	Test_Image_08022021_05PM0000_1_3.rdr ;Differential backup 1:3
	Test_Image_08022021_05PM0000_1_4.rdr ;Differential backup 1:4
	Test_Image_08022021_05PM0000_1_5.rdr ;Differential backup 1:5 Test Image 08082021 05PM0000 2.rdr ;Full backup 2
0/0/0001	
8/9/2021	Test_Image_08022021_05PM0000_1.rdr ;Full backup 1 Test Image 08082021 05PM0000 2.rdr ;Full backup 2
Monday	Test Image 08082021 05PM0000 2 1.rdr ; Differential backup 2:1
0/10/2021	
8/10/2021	Test_Image_08042021_05PM0000_1.rdr ;Full backup 1 Test Image 08082021 05PM0000 2.rdr ;Full backup 2
Tuesday	Test Image 08082021 05PM0000 2 1.rdr ; Full backup 2 Test Image 08082021 05PM0000 2 1.rdr ; Differential backup 2:1
	Test Image 08082021 05PM0000 2 2.rdr ;Differential backup 2:1
0/11/2021	Test Image 08042021 05PM0000 1.rdr ;Full backup 1
8/11/2021	Test Image 08082021 05PM0000 2.rdr ;Full backup 1 Test Image 08082021 05PM0000 2.rdr ;Full backup 2
Wednesday	Test Image 08082021 05PM0000 2 1.rdr ;Differential backup 2:1
	Test Image 08082021 05PM0000 2 2.rdr ;Differential backup 2:2
	Test Image 08082021 05PM0000 2 3.rdr ;Differential backup 2:3
8/14/2021	Test Image 08042021 05PM0000 1.rdr ;Full backup 1
	Test Image 08082021 05PM0000 2.rdr ;Full backup 2
Saturday	Test Image 08082021 05PM0000 2 1.rdr ;Differential backup 2:1
	Test Image 08082021 05PM0000 2 2.rdr ;Differential backup 2:2
	Test Image 08082021 05PM0000 2 3.rdr ;Differential backup 2:3
	Test Image 08082021 05PM0000 2 4.rdr ;Differential backup 2:4
	Test Image 08082021 05PM0000 2 5.rdr ;Differential backup 2:5
8/15/2021	Test Image 08042021 05PM0000 1.rdr ;Full backup 1
	Test Image 08092021 05PM0000 2.rdr ;Full backup 2
Sunday	Test Image 08152021 05PM0000 3.rdr ;Full backup 3
L	

8/16/2021	Test Image 08042021 05PM0000 1.rdr ;Full backup 1
	Test Image 08092021 05PM0000 2.rdr ;Full backup 2
Monday	Test Image 08152021 05PM0000 3.rdr ;Full backup 3
	Test Image 08152021 05PM0000 3 1.rdr ;Differential backup 3:1
8/17/2021	Test Image 08042021 05PM0000 1.rdr ;Full backup 1
	Test Image 08092021 05PM0000 2.rdr ;Full backup 2
Tuesday	Test Image 08152021 05PM0000 3.rdr ;Full backup 3
	Test Image 08152021 05PM0000 3 1.rdr ;Differential backup 3:1
	Test Image 08152021 05PM0000 3 2.rdr ;Differential backup 3:2
8/21/2021	Test Image 08042021 05PM0000 1.rdr ;Full backup 1
Saturday	Test Image 08092021 05PM0000 2.rdr ;Full backup 2
Saturday	Test Image 08152021 05PM0000 3.rdr ;Full backup 3
	Test_Image_08152021_05PM0000_3_1.rdr ;Differential backup 3:1
	Test_Image_08152021_05PM0000_3_2.rdr ;Differential backup 3:2
	<pre>Test_Image_08152021_05PM0000_3_3.rdr ;Differential backup 3:3</pre>
	<pre>Test_Image_08152021_05PM0000_4_4.rdr ;Differential backup 3:4</pre>
	Test_Image_08152021_05PM0000_5_5.rdr ;Differential backup 3:5
8/22/2021	;Full backup 1 is deleted
Sunday	Test_Image_08092021_05PM0000_2.rdr ;Full backup 2
Stilling	Test_Image_08152021_05PM0000_3.rdr ;Full backup 3
	Test_Image_08222021_05PM0000_4.rdr ;Full backup 4
8/23/2021	Test_Image_08092021_05PM0000_2.rdr ;Full backup 2
Monday	Test_Image_08152021_05PM0000_3.rdr ;Full backup 3
	Test_Image_08222021_05PM0000_4.rdr ;Full backup 4
	Test_Image_08222021_05PM0000_4_1.rdr ;Differential backup 4:1
• • • • •	

6.3 Scripting and Command Line Operations

You may create scripts for frequently repeated or unattended disk actions and execute them from a command line or file. The same script commands may be executed directly from a command line.

Currently, **R-Drive Image** supports scripts for **creating a new image file**, **appending data to an existing one**, **restoring data from an image**, **check an image**, and **mount/unmount images as virtual logical disk**.

To create a script

- Creating a script from R-Drive Image
- Creating a script manually

To execute a script:

1 Type in the command line:

r-driveimagecl [/switches] cmd="<ScriptName>.rdi"

where <scriptName> is the script name and its path, if necessary,

and press the Enter key

Note: if ScriptName contains no spaces, double quotes (") may be omitted. No characters in ScriptName should be escaped.

Incompatibilities with ver.3.x

Script name should be passed using the cmd key.		
Ver. 3.x	r-driveimagecl [/switches] <scriptname>.rdi</scriptname>	
Ver. 4.x	r-driveimagecl [/switches] cmd=" <scriptname>.rdi"</scriptname>	

Switc	Description
h	•
a	A non-interactive mode. R-Drive Image will not ask the user any questions. If it cannot perform
	the action, it will generate an error.
d	A debug mode. R-Drive Image will display all the information as it was performing the action,
	but will not perform the actual action.
f	If an error occurs, R-Drive Image will not exit the script and continue perform it from the
	following command. Inapplicable to actions started from the command line
i	Not functioning since version 4.7!
	The s and d parameters will use disk indexes rather than disk numbers. Disk indexes are disk
	serial numbers and can be seen either on the R-Drive Image Partition Selection panel or
	Windows Disk Management.
0	If a file with a specified filename exists, R-Drive Image will overwrite it quietly.
off	will shut down the computer when it finishes the command.

Switches set in the command lines also is used as default values for parameters in scripts.

> R-Drive Image will start executing the script showing the operation parameters and progress.

When **R-Drive Image** completes the operation, the Commit OK message will appear in the command prompt.

You may include this command to a command file and automatically run such command file either manually or using any scheduling software for unattended disk actions.

To perform an action from the command line:

1 Type in the command line:

R-DriveImage [/<u>switches</u>] <u>command <params></u> to start **R-Drive Image** application or r-driveimagecl [/<u>switches</u>] <u>command <params></u> to start **R-Drive Image** console application **and press the Enter key**.

> R-Drive Image will start executing the command showing the action's progress.

When **R-Drive Image** completes the action, the Commit OK message will appear in the command prompt. **Note:** the /f switch is not applicable to the actions performed from the command prompt.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information.

Follow this link to obtain **<u>R-Drive Image Contact Information and Technical Support</u>**

6.3.1 Create a Script from R-Drive Image

You may create scripts directly from **R-Drive Image** the same way you set a regular action for creating an image of a disk, partition, or an entire hard drive.

To create a script from a disk action

- 1 Click Create an Image on the Action Selection panel and specify all the options and parameters as it is described on the Create an Image topic.
- 2 Click the Script to Clipboard button on the **Processing** panel and paste the script to any text-processing utility
- 3 Save the script in a file

The default extension for **R-Drive Image** scripts is .rdi. Go to the <u>Scripting and Command Line Operation</u> topic to learn how to use scripts

To create a script from an existing task

- 1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks panel will appear.
- 2 Right-click the task the Scheduled Tasks panel
- 3 Select Save as Script in the shortcut menu and specify the name of the script
- > R-Drive Image will save the script in the specified file

The default extension for **R-Drive Image** scripts is .rdi. Go to the <u>Scripting and Command Line Operation</u> topic to learn how to use scripts

To create a new script from the Scheduler

- 1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks panel will appear.
- 2 Click the Create a Script button on the Scheduled Tasks panel
- 3 Select the objects you want to backup on the Select disk(s) to create image panel, image destination on the Choose destination of new image panel, specify necessary parameters on the Image options, Notification options, Backup options panels, and on the Rotation options panel.

Images can be replicated, that is, their copies may be saved to one or other different locations.

Go to the Create an Image topic for more details.

Please note that you may use <u>rotation schemes (backup sets)</u> for creating complex data backup tasks and maintaining data files.

- 4 Verify that the information on the Processing panel is correct and click the Save button You may also click the Script to Clipboard button to copy this script into the Clipboard and paste the script to any text-processing utility.
- > R-Drive Image will save the script in the specified file The default extension for R-Drive Image scripts is .rdi. Go to the <u>Scripting and Command Line Operation</u> <u>topic</u> to learn how to use scripts

To create a script from a scheduled task

- 1 Click Scheduler/Create Script on the Action Selection panel The Scheduled Tasks panel will appear.
- 2 Right-click the task from which you want to create a script on the Scheduled Tasks panel
- 3 Select in the context menu either Save as script to save the script in a file or Script to Clipboard (Ctrl+C) to copy and paste the script to any text-processing utility.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information.

Follow this link to obtain **<u>R-Drive Image Contact Information and Technical Support</u>**

6.3.2 Create a Script Manually

R-Drive Image has a very powerful and versatile script language that enables you to create scripts for all your needs. A script consists of commands and their parameters. All commands, parameter, and their values are case-sensitive.

Incompatibilities with ver.3.x

	Ver. 3.x	Ver. 4.x
File names with " Escaping of the " character has been changed		"
File names with a	۵	&

Escaping of the $\&$ character has been changed		
Partition list Several partitions should be set in one list	-s="part1" -s="part2" - s="part3"	-s="part1 part2 part3"

General:

The default extension for R-Drive Image script files is .rdi.

Parameter values may be inclosed in single (') or double (") quotes. if the value does not contain spaces, the quotes may be omitted.

R-Drive Image ignores spaces in the beginning of a line. **R-Drive Image** treats multiple spaces as one space, except when they are in a parameter value enclosed in quotes.

Examples:

Below are equal lines:

```
create -a = "c:\archive.rdr"
    create -a = "c:\archive.rdr"
Below are not equal lines:
```

create -a = "c:\archive 1.rdr"
create -a = "c:\archive 1.rdr"

Comments:

R-Drive Image treats lines which the first non-space character is ; or the first non-space character is [and the last one is], as comments.

Examples:

```
; This is a comment line
[This is a comment line]
```

Multiple lines:

If the last non-space character in a line is \, R-Drive Image appends the next line to it:

Example:

```
Lines:
```

```
create -a = "c:\archive.rdr" -s = "1:1" \
  c = "5"
are equal to the line:
```

```
create -a = "c:\archive.rdr" -s="1:1" c= "5"
```

Disk size units

Values specifying disk sizes may be in units.

b	bytes	
Kb	kilobytes	2^10 = 1,024 b
Mb	megabytes	2^20 = 1,024
		Kb
Gb	gigabytes	2^30 = 1,024
		Mb

If the units are used, enclose the value in quotes. Default values are Mb (megabytes).

© 2025 R-Tools Technology Inc.

Characters to substitute

If the following characters are to appear in the parameter values, they should be substituted by the following rules:

Character	String to substitute
"	"
T	'
æ	&
carriage	&cr
return	
new line	&nl

Note: This is the incompatibility with scripts created for the earlier versions of **R-Drive Image**.

URL paths

For remote hosts, **R-Drive Image** supports URL of two types:

\\[[domain;]username[:password]@]hostname\share\path

smb://[[domain;]username[:password]@]hostname[:<port>].share/path

They can be used instead local paths.

Script commands and parameters:

Command Its Parameters	Optional/ Mandatory	Description and examples	
list		Returns a partition list for local drives or an image file. If the drive contains an APFS container, the command will show both the APFS container and its APFS volumes.	
- a= <pathofnewa rchiveFile></pathofnewa 	Mandatory	<pre>Specifies a path (including its file name) to the image file. Examples: -a=C:\Images\Test.rdr or -a="C:\Image Files\Test 1.rdr"</pre>	
-p= <password></password>	Mandatory/Not used	Specifies an image password. Mandatory if the image file has been already encrypted. It there is a space in the password, the password should be in quotes. Examples: -p=Password or -p='My Password'	
- t= <timeslicen umber></timeslicen 	Optional	Specifies which incremental data will be used to list the partitions in the image. If the TimeSliceNumber is not specified, the first data in the image will be used. -1 specifies the last incremental data in the image. first: R-Drive Image will use the first incremental data in the image. last: R-Drive Image will use the last incremental data in the image. + <n>: R-Drive Image will use the last incremental data in the image. -<n>: R-Drive Image will use the n-th incremental data from the beginning in the image. Examples: $-t="+2"$ specifies the second incremental data from the beginning in the image.</n></n>	

Example:

list -a=C:\Images\Test.rdr -p="mY pasSsworRrd"

This script command	l returns a list of pa	rtitions stored in the C:\Images\Test.rdr image file protected by the	
password my passs			
sysdump		Creates a system dump that may be necessary to obtain technical support. An image file can be included into that system dump. In this case, the keys -a, -p, -t from the list command should be used.	
- sysdump=" <sys DumpFile>"</sys 	Mandatory	Specifies the filename for the system dump.	
Example:			
		-a=C:\Images\Test.rdr -p="mY pasSsworRrd"	
-		n the system dump, its name is MySysDump. The system dump includes protected by the password my pasSsworRrd.	
register		Registers R-Drive Image from the command line.	
-reg- user=" <userna me>"</userna 	Mandatory	Specifies the user name for registration.	
-reg- key=" <registr ationKey>"</registr 	Mandatory	Specifies the register key for registration.	
-reg- company=" <use rCompany>"</use 	Optional	Specifies the company for registration.	
Example:			
		" -reg-company=R-TT Testing Team" -reg-	
key="fafaasert			
-	This script command registers R-Drive Image for the user Tester 1 from the company R-TT Testing Team using the key fafaasertghzfvasfje134.		
Disk descriptors us			
-		Drive Image uses to identify hard drives, logical disks, and partitions. It	
	-	om the most important descriptor to the least important one. If there are	
	-	riptors, R-Drive Image identifies them using the most important disk	
descriptor with differ			
-		real : a basic disk	
		dynamic : a dynamic disk	
hdd_vtype	HDD type.	pure : disk objects like USB pendrives with only one logical disk on	
		it.	
		Example: hdd_vtype=real	
hdd_size	HDD size	Disk size should be specified in bytes, no KB or MB are allowed. Example: hdd_size=40060403712	
hdd_name	HDD name	Example: hdd_name=SAMSUNG SP0411NTW100-11 (denotes a space)	
hdd_serial	HDD serial number	Example: hdd_serial=S01JJ30X912841	
hdd_bus_type	Type of the HDD bus	Can be: none, ata, atapi, scsi, floppy, usb, firewire, ssa, fibre, raid, smart, abios, sata, sata2. Example: hdd_bus_type=ata	

hdd_port_num	Port number for HDD	Example: hdd_port_num=0
hdd_target_id	Target ID for HDD	Example: hdd_target_id=1
hdd_num	Disk number, coincides with the disk number used in the old notations.	Example: hdd_num=1
part_free_spa ce	Free space mark	1 if this object is a disk free space, 0 if not. Example: part_free_space=1
part_ofs	Partition offset in bytes.	Partition offset should be specified in bytes, no KB or MB are allowed. Example: part_ofs=16778264576
part_size	Partition size	Partition size should be specified in bytes, no KB or MB are allowed. Example: part_size=23279435776
part_fs	Partition file system	Can be: none, ntfs, fat12, fat16, fat32, exfat, ext2fs, ext3fs, ext4fs, ufs1, ufs2, hfs ,hfsplus ,hfsx, iso9660 Example: part fs=ntfs
part label	Disk label	Example: part label=Test Data
part_mounted	Disk letter of folder	Example: part_mounted=G: \
part_num	Partition number, coincides with the partition number used in the old notations. Free space is considered as a partition.	Example:part_num=2
part_id	Partition identifier.	Example: part_id=2
vol_id	APFS volume identifier in an APFS container	Example: vol_id=3
used_id	Partition identifier when free space is omitted.	Example: used_id=2
unused_id	Free space identifier when	Example: unused_id=1

	partitions are omitted.		
A partition may be identified using its descriptors:			
A partition may be identified using its descriptors: hdd_size=40060403712+part_num=2+hdd_num=1+hdd_target_id=0+hdd_bus_type=ata+part_lab el=Part2+part_ofs=16778264576+part_mounted=G:\+hdd_name=SAMSUNG			
SP0411NTW100-	LS=10//82045/04	-part_mounted=G:\+ndd_name=SAMSONG	
	279435776+hdd p	port_num=0+hdd_serial=S01JJ30X912831+part_fs=ntfs+hdd_	
vtype=real			
create			
append		Differentially appends data to an existing image file. If such file does not exist, it will be created.	
- s= <sourcedisk ></sourcedisk 	Mandatory	Specifies a source object to create the image or append to it. The <sourcedisk> parameter consists of one or several disk descriptors written in the form: descriptor_name1=value[+descriptor_name1=value]. The disk descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid: Old notation examples: for hard drive 1: -s=1 for the second partition on hard drive 1 (empty space is treated as a partition): -s=1:2 for the second partition on hard drive 1 skipping empty spaces: - s=1:p2 for the first empty space on hard drive 1 skipping partitions: - s=1:f1 for a logical disk: -s=D: for several logical disks: -s="D: F:"</sourcedisk>	
- a= <pathofnewa rchiveFile></pathofnewa 	Mandatory	Specifies a path (including its file name) to the image file. Examples: -a=C:\Images\Test.rdr or -a="C:\Image Files\Test 1.rdr"	
- c= <compressio nLevel></compressio 	Optional	Specifies <u>compression level</u> (111). Example: -c=3	
-u	Optional	Backups useful information only. May be used as a <u>Boolean</u> parameter.	
- v= <archivesiz e></archivesiz 	Optional	Specifies image split size. May be in the float-point format. Example: $-v=650$ or $-v='4.5$ Gb'	
-append-inc	Optional	Creates an incremental backup.	
-p= <password></password>	Mandatory/Not used	Specifies an image password. Mandatory if the append command is used and the image file has been already encrypted. It there is a space in the password, the password should be in quotes. Examples: -p=Password or -p='My Password'	
- r= <descriptio n of archive></descriptio 	Optional	Specifies an image description. It there is a space in the description, the description should be in quotes.	
		Examples: -r=Description or -r="Image Description"	
---	----------	---	
-s-xw	Optional	Makes R-Drive Image not to use the Windows snapshot provider.	
-s-xr	Optional	Makes R-Drive Image not to use the R-TT snapshot provider.	
-s-n	Optional	Notifies system application that a snapshot is being taken.	
-s-		Specifies an application that will start before the backup operation	
b0= <appbefore< td=""><td>Optional</td><td>starts. The application should return a 0 exit code.</td></appbefore<>	Optional	starts. The application should return a 0 exit code.	
Back>		Example:-s-b0="C:\commands\start.exe"	
-s-		Specifies an application that will start after the backup operation	
b1= <appafterb< td=""><td>Optional</td><td>completes. The application should return a 0 exit code.</td></appafterb<>	Optional	completes. The application should return a 0 exit code.	
ack>		Example:-s-b1="C:\commands\end.exe"	
-s-		Specifies an application that will start before the snapshot is taken.	
s0= <appbefore< td=""><td>Optional</td><td>The application should return a 0 exit code.</td></appbefore<>	Optional	The application should return a 0 exit code.	
SnapShot>		Example:-s-s0="C:\commands\startsnapshot.exe"	
-s-		Specifies an application that will start after the snapshot is taken. The	
s1= <appafters< td=""><td>Optional</td><td>application should return a 0 exit code.</td></appafters<>	Optional	application should return a 0 exit code.	
napShot>		Example: -s-s1="C:\commands\endsnapshot.exe"	
		Specifies a command line that will start an application if R-Drive	
-	Ontional	Image fails to perform the specified action. If there is a space in the	
xe= <appiferro r></appiferro 	Optional	command line, the command line should be in quotes.	
17		Examples: -xe=error.exe or -xe="winamp C: \sounds\error.mp3"	
		Specifies a command line that will start an application if R-Drive	
		Image successfully performs the specified action. If there is a space in	
_ xs= <appifsucc< td=""><td>Optional</td><td>the command line, the command line should be in quotes.</td></appifsucc<>	Optional	the command line, the command line should be in quotes.	
>	Optional	Examples: -xs=success.exe or -xs="winamp C:	
		\sounds\success.mp3"	
h	Ontional	Specifies that R-Drive Image will use rotation schemes (backup	
-bs	Optional	sets).	
		May be used only if the -bs is set. Specifies the total size in MB on	
-bs- size=" <quota< td=""><td>Optional</td><td>the disk allocated for the backup set. If it is exceeded, the backup set</td></quota<>	Optional	the disk allocated for the backup set. If it is exceeded, the backup set	
in_MB>"	Optional	(all its files) will be removed.	
_		Example: -bs-size="20000"	
h a		May be used only if the -bs is set. Specifies the number of rotation	
-bs-num- b=" <number of<="" td=""><td>Optional</td><td>schemes (backup sets) If it is exceeded, the older rotation schemes</td></number>	Optional	schemes (backup sets) If it is exceeded, the older rotation schemes	
backs>"	Optional	(backup sets) (all their files) will be removed.	
_		Example:-bs-num-b="10"	
-bs-num-		May be used only if the -bs is set. Specifies the number of files in all	
f=" <number of<="" td=""><td>Optional</td><td>rotation schemes (backup sets). If it is exceeded, the older rotation</td></number>	Optional	rotation schemes (backup sets). If it is exceeded, the older rotation	
_files>"	1	schemes (backup sets) (all their files) will be removed.	
		Example: -bs-num-f="30"	
		May be used only if the -bs is set. Specifies the number of days for	
-bs-	Optional	which R-Drive Image will keep the backup set. Then the backup set	
age=" <days>"</days>		will be removed.	
		Example: -bs-age="14"	

	Optional	Used when an image file is written to CD discs. R-Drive Image
-cd-cache		creates an ISO image of the CD disc and then copies it to the CD
		disc. Without it R-Drive Image writes data directly to the CD disc.
- 4		Used when an image file is written to CD discs. Specifies burning
-cd- speed= <speed></speed>	Optional	speed in KB/sec.
speed- <speed></speed>	_	Example: -cd-speed="1200"
		Used when an image file is written to DVD discs. R-Drive Image
-dvd-cache	Optional	creates an ISO image of the DVD disc and then copies it to the DVD
		disc. Without it R-Drive Image writes data directly to the DVD disc.
-dvd-speed		Used when an image file is written to DVD discs. Specifies burning
	Optional	speed in KB/sec.
		Example: -dvd-speed="3324"

Example:

create -

s="hdd_size=40060403712+part_num=1+hdd_num=2+hdd_target_id=0+hdd_bus_type=ata+part _label=Part1+part_ofs=1048576+part_mounted=F:\+hdd_name=SAMSUNG SP0411NTW100-11+part_size=16777216000+hdd_port_num=0+hdd_serial=S01JJ30X912831+part_fs=ntfs+hdd _vtype=real,hdd_size=40060403712+part_num=2+hdd_num=2+hdd_target_id=0+hdd_bus_type =ata+part_label=Part2+part_ofs=16778264576+part_mounted=H:\+hdd_name=SAMSUNG SP0411NTW100-

11+part_size=23279435776+hdd_port_num=0+hdd_serial=S01JJ30X912831+part_fs=ntfs+hdd
_vtype=real" -a="I:\Test Image.rdr" -c=3 -u = true -p="My Password" -r="This is a
test image" -xe="winamp C:\sounds\error.mp3" -xs="winamp C:\sounds\success.mp3"

This script command creates an image of logical disks F: and H: on the Samsung HDD. The path and filename for this image file is I:\Test Image.rdr, with compression level 3, and only useful information on this disk will be written to the image. This image is protected with the password "My Password", and its description is "This is a test image". If the script action has been performed successfully, the winamp application will play the success.mp3 file, and if an error occurs, it will play the error.mp3 file.

restore		Restores data from an image to a specified disk place
сору		Copies a disk to a disk.
- s= <sourcedisk ></sourcedisk 	Mandatory	<pre>Specifies a source object to copy. The <sourcedisk> parameter consists of one or several disk descriptors written in the form: descriptor_name1=value[+descriptor_name1=value]. The disk descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid: Old notation examples: for hard drive 1:-s=1 for the second partition on hard drive 1 (empty space is treated as a partition): -s=1:2 for the second partition on hard drive 1 skipping empty spaces: - s=1:p2 for the first empty space on hard drive 1 skipping partitions: - s=1:f1 for a logical disk: -s=D: for several logical disks: -s="D: F:"</sourcedisk></pre>

		Specifies a destination disk:partition on which the data is to be restored.The <destinationdisk> parameter consists of one or several diskdescriptorswrittenintheformdescriptor name1=value[+descriptor name1=value].Thedisk</destinationdisk>
- d= <destinatio nDisk></destinatio 	Mandatory	<pre>descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid: Old notation examples: for hard drive 1: -d=1 for the second partition on hard drive 1 (empty space is treated as a partition): -s=1:2 for the second partition on hard drive 1 skipping empty spaces: - s=1:p2 for the first empty space on hard drive 1 skipping partitions: - s=1:f1 for a logical disk: -d=D:</pre>
- a= <pathofarch iveFile></pathofarch 	Mandatory	Applicable to restore only. Specifies a path (including its file name) to the image file from which data is to be restored. It there is a space in the path, the path should be in quotes. Examples: -a=C:\Images\Test.rdr or -a="C:\Image Files\Test.rdr"
- k=<"Partition Status">	Optional	 Specifies a status (primary/active) for a partition to be restored. Settings: +p is a primary partition -p is a secondary partition +a is an active partition -a is a non-active partition Please note that the combination "-p +a" is invalid. If this parameter is not specified, the data from the image will be used. Examples: -k="+p+a" the partition will be primary and active. -k="+p" the partition will be primary. Information in the image will be used to make the partition either active or non-active.
-ou	Optional	Copy/restore useful information only. May be used as a Boolean parameter.
- t= <timeslicen umber></timeslicen 	Optional	Applicable to restore only. Specifies which incremental data will be used to restore data from the image. If the TimeSliceNumber is not specified, the first data in the image will be used1 specifies the last incremental data in the image. first: R-Drive Image will use the first incremental data in the image. last: R-Drive Image will use the last incremental data in the image. + <n>: R-Drive Image will use the last incremental data in the image. -<n>: R-Drive Image will use the n-th incremental data from the beginning in the image. -<n>: R-Drive Image will use the n-th incremental data from the end in the image.</n></n></n>

	1	
		Examples: $-t="+2"$ specifies the second incremental data from the beginning in the image will be used to restore data.
- lr= <diskletter ></diskletter 	Optional	Specifies a disk letter. This parameter is case-insensitive. Examples: -lr="K" or -lr=K.
- sz= <partitions ize></partitions 	Optional	Specifies a partition size. May be in the float-point format. The following predefined values may be used: min: shrink the partition to the minimum possible size, max: expand the partition to the maximum size. Example: $-sz=512$ or $-sz='0.5$ Gb'
- of= <partitiono fset></partitiono 	Optional	Specifies an offset from the beginning of the destination. May be in the float-point format. Default is 0. Example: -of=512 or -of='0.5 Gb'
-bs- use=" <paramet er>"</paramet 	Optional	Applicable to restore only. Specifies the backup set R-Drive Image will use to restore data. Parameter may be: first: R-Drive Image will use the first backup set. last: R-Drive Image will use the last backup set. + <n>: R-Drive Image will use the n-th backup set from the beginning. -<n>: R-Drive Image will use the n-th backup set from the end. <date>: R-Drive Image will use the n-th backup set from the date in its name. Examples: -bs-use="+3": R-Drive Image will use the 3-rd backup set from the beginning. -bs-use="20080521": R-Drive Image will use the backup set from the backup set from the backup set from the beginning.</date></n></n>
-p= <password></password>	Mandatory / Not used	Applicable to restore only. Mandatory for password-protected files. Specifies a password for the archive. Example: -p="my password"
-hdd- mode=" <modety pe>"</modety 	Optional	 Applicable to copy/restore entire hard drives only. Specifies an HDD copy mode when copying entire hard drives. Parameter may be: 0: The default method 1: Raw disk copy 2: Copy all partitions onto original places 19: One partition after another 20: One partition after another (Fixed active partition) 51: Expand/Shrink partition to whole disk 52: Expand/Shrink partition to whole disk (Fixed active partition)
Example:		

restore -a="I:\Test Image.rdr" s="hdd_size=40060403712+part_num=1+hdd_num=1+hdd_target_id=0+hdd_bus_type=ata+part
_label=Part2
+part_ofs=16778264576+part_mounted=G:\+hdd_name=SAMSUNG SP0411NTW10011+part_size=23279435776+hdd_port_num=0+hdd_serial=S01JJ30X912831+part_fs=ntfs+hdd
_vtype=real"
d="hdd_size=40060403712+part_num=2+hdd_num=1+hdd_target_id=0+hdd_bus_type=ata+part
_label=Part2+part_ofs=16778264576+part_mounted=G:\
+hdd_name=SAMSUNG SP0411NTW10011+part_size=23279435776+hdd_port_num=0+hdd_serial=S01JJ30X912831+part_fs=ntfs+hdd
_vtype=real"
-p="My Password" -xe="winamp C:\sounds\error.mp3" -xs="winamp C:
\sounds\success.mp3"

This script command restores data to the logical disk G: on the Samsung HDD, the source image is stored in the "I:\Test Image.rdr", the data is taken from the first partition in the image. This image is protected with the password "My Password". If the script action has been performed successfully, the winamp application will play the success.mp3 file, and if an error occurs, it will play the error.mp3 file.

restorefiles		Restores individual files from images to a specified destination
- s=" <sourcedis k>"</sourcedis 	Mandatory	Specifies a source object to restore. The <sourcedisk> parameter consists of one or several disk descriptors written in the form: descriptor_name1=value[+descriptor_name1=value]. The disk descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid: Old notation examples: for hard drive 1:-s=1 for the second partition on hard drive 1:-s=1:2 for a logical disk:-s=D:</sourcedisk>
- a=" <pathofarc hiveFile>"</pathofarc 	Mandatory	Specifies a path (including its file name) to the image file from which data is to be restored. It there is a space in the path, the path should be in quotes. Examples: -a=C:\Images\Test.rdr or -a="C:\Image Files\Test.rdr"
- filelist=" <li stOfFilesToRe store>"</li 	Mandatory	Specifies list of files from the image that should be restored. Example: -filelist="MyPhoto/*,Photo/Picture 001.jpg,Photo/Picture 003.jpg"
- outdir=" <outp utFolder>"</outp 	Mandatory	Specifies the folder to which files will be restored. Example: -outdir="D:\1111"

Example:

```
restorefiles -
s="hdd_size=7509196800+part_num=1+hdd_num=1+hdd_target_id=0+hdd_bus_type=ata+part
_label=NTFS-Test+part_ofs=64512+part_mounted=F:\+hdd_name=WDC WD75DA-
00AWA107.21L07
+part_size=3141991936+hdd_port_num=0+hdd_serial=WD-
WMA1J1262876+part_fs=ntfs+hdd_vtype=real"
-a="I:\Test_Image.rdr" -t="+1" -filelist="MyPhoto/*,Photo/Picture 001.jpg,
```

Photo/Picture 003.jpg,Photo/Picture 005.jpg,Photo/Picture 007.jpg,Photo/Picture 009.jpg,Photo/Picture 010.jpg,Photo/Picture 011.jpg, Photo/Picture 013.jpg,Photo/Picture 015.jpg,Photo/Picture 016.jpg,Photo/Picture 017.jpg,Photo/Picture 018.jpg,Photo/Picture 019.jpg,Photo/Picture 020.jpg, Photo/Picture 021.jpg,Photo/Picture 022.jpg,Photo/Picture 023.jpg, Photo/Picture 024.jpg,Photo/Picture 025.jpg,Photo/Picture 026.jpg,Photo/Picture 027.jpg,Photo/Picture 028.jpg" -outdir="D:\1111" This script command restores the specified files to the destination path D:\1111 from the source image of the first partition of the hard drive stored in the file I:\Test_Image.rdr.			
check		Checks consistency of the archive	
- a= <pathofarch iveFile></pathofarch 	Mandatory	Specifies a path (including its file name) to the image which integrity is to be checked. It there is a space in the path, the path should be in quotes. Examples: -a=C:\Images\Test.rdr or -a="C:\Image Files\Test.rdr"	
Example:			
check -a="I:\T	-		
This script command	checks the image	file I:\Test Image.rdr for its consistency.	
mount		Mounts an image file as a read-only virtual disk.	
- a= <pathofnewa rchiveFile></pathofnewa 	Mandatory	Specifies a path (including its file name) to the image file. Examples: -a=C:\Images\Test.rdr or -a="C:\Image Files\Test 1.rdr"	
- s= <sourcedisk ></sourcedisk 	Mandatory	Specifies an object in the image to mount. The <sourcedisk> parameter consists of one or several disk descriptors written in the form: descriptor_name1=value[+descriptor_name1=value]. The disk descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid: Old notation examples: for the second partition on hard drive 1:-s=1:2 for a logical disk: -s=D:</sourcedisk>	
- lr= <diskletter ></diskletter 	Mandatory	Specifies a disk letter. This parameter is case-insensitive. Examples: -lr="K" or -lr=K.	
- t= <timeslicen umber></timeslicen 	Optional	Specifies which incremental data in the image will be used to mount a disk. If the TimeSliceNumber is not specified, the first data in the image will be used1 specifies the last incremental data in the image. first: R-Drive Image will use the first incremental data in the image. last: R-Drive Image will use the last incremental data in the image. + <n>: R-Drive Image will use the last incremental data in the image. -<n>: R-Drive Image will use the n-th incremental data from the beginning in the image. -<n>: R-Drive Image will use the n-th incremental data from the end in the image. Examples: -t="+2" specifies the second incremental data from the beginning in the image will be used to mount a disk.</n></n></n>	

-bs- use=" <paramet er>"</paramet 	Optional	Specifies the backup set R-Drive Image will use to mount as a logical disk. Parameter may be: first: R-Drive Image will use the first backup set. last: R-Drive Image will use the last backup set. + <n>: R-Drive Image will use the n-th backup set from the beginning. -<n>: R-Drive Image will use the n-th backup set from the end. <date>: R-Drive Image will use the backup set containing the date in its name. Examples: -bs-use="+3": R-Drive Image will use the 3-rd backup set from the beginning. -bs-use="20080521": R-Drive Image will use the backup set containing the "20080521" string in its name.</date></n></n>
Example:		
		-s=1:2 lr=F: -t=-1
-		I have the Exlatter
Image.rdr. The vir	tual logical disk wil	
unmount		Unmounts a mounted virtual disk.
lr= <diskletter< td=""><td>Mandatory</td><td>Specifies a disk letter. This parameter is case-insensitive. Examples: -lr="K" or -lr=K.</td></diskletter<>	Mandatory	Specifies a disk letter. This parameter is case-insensitive. Examples: -lr="K" or -lr=K.
Example:		
unmount lr=F:		
This script command	unmounts the virtu	
activate		Sets a specified partition active. The required partition should be specified
- s= <sourcedisk ></sourcedisk 	Mandatory	Specifies the partition on the disk to set active. The <sourcedisk> parameter consists of one or several disk descriptors written in the form: descriptor_name1=value[+descriptor_name1=value]. The disk descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid: Old notation examples: for the second partition on hard drive 1:-s=1:2 for a logical disk:-s=D:</sourcedisk>
Example: activate -s=1:		
This script command	set the first partition	on of the first hard drive active.
delete		Deletes a partition on a drive The required partition should be specified
- s= <sourcedisk ></sourcedisk 	Mandatory	Specifies a partition to delete. The <sourcedisk> parameter consists of one or several disk descriptors written in the form: descriptor_name1=value[+descriptor_name1=value]. The disk descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid:</sourcedisk>

		Old notation examples:
		for the second partition on hard drive $1:-s=1:2$
		for a logical disk: $-s=D$:
Example:		
delete -s=F:		
This script command	l deletes the logical	disk F:.
clear		Deletes all partitions on a drive
- s= <sourcedisk ></sourcedisk 	Mandatory	Specifies the hard drive where all partitions should be deleted. The <sourcedisk> parameter consists of one or several disk descriptors written in the form: descriptor_name1=value[+descriptor_name1=value]. The disk descriptors are presented in the <u>Disk descriptors</u> section of this table. Old notation is also valid: Old notation examples: for hard drive 1: -s=1</sourcedisk>
		Specifies a partitioning scheme type to be created on the hard drive.
-part-		<partitiontype> may be:</partitiontype>
type= <partiti< td=""><td>Optional/Mandat</td><td>0</td></partiti<>	Optional/Mandat	0
onType>	ory	gpt: R-Drive Image will create the GPT schemes.
		If omitted, the existing partitioning schemes table will be cleared.
		Mandatory if no partitioning schemes exists on the hard drive.
Example:		
clear -s=2	l deletes ell nontition	as on the second hand drive
fixmbr	Optional	ns on the second hard drive. Installs a default boot loader on a hard drive
	Optional	
- s= <sourcedisk< td=""><td>Mandatory</td><td>Specifies the hard drive where the boot loader will be installed. Example:</td></sourcedisk<>	Mandatory	Specifies the hard drive where the boot loader will be installed. Example:
>	Mandatory	for hard drive $1: -s=1$
Evenuela		
Example: fixmbr -s=1		
	l installs the default	boot loader to the first hard drive.
mail	Optional	Specifies all mail options globally for the entire script
Example:		
-	.example.com -m	a=rtt1@example.com -mr=rtt2@example.com -
	ord -me -mx -mz	
This script comman	d sends e-mails co	onfirming success or error of the action from rttl@example.com to
rtt2@example.com	m via the mail.exam	ple.com SMTP server using the default (25) port with the rtt1 login
and password pass	word. The SSL opt	tion is SSL.
Parameters applic	able to all comma	unds
These parameters ca	an be used in all con	nmands
- log=" <logoptio ns>"</logoptio 	Optional	Controls the way R-Drive Image logs its command-line activity. By default, it outputs its activity into WinNT event log if started from Windows scheduler, but can create its own xml-type log files. LogOptions may be: #nodefault: disables the default log output into syslog
		"near and a show and a show and a show and a show a

		<pre><filename>: writes the log to the specified file name and path. Example: c:\mylogs\mylog.txt. The "," character in the file name should be doubled. <filepath>: writes the log files (a separate one to each session) to the specified folder. Each file name will have the following filename: date_time.rdl. Examples: c:\mydir file name: 20081003_215302.rdl. #syslog: output logs into WinNT event log. #sysdir: outputs logs into C:\Documents and Settings\All Users\Application Data\R-TT\R-Drive Image\Logs\. Example:log="#nodefault,c:\mylog.txt,c: \mydir#sysdir" This will make R-Drive Image write its logs to the c:\mylog.txt file, and to the c:\mydir\ and C:\Documents and Settings\All Users\Application Data\R-TT\R-Drive Image\Logs\ folders without writing to WinNT event log.</filepath></filename></pre>
mail options	Optional	Sends e-mail messages if the action fails or succeeds and specifies e- mail parameters. If a personal firewall is installed on your computer, you should allow the r-driveimagecl.exe application to get access to the e-mail server.
-me	Optional	Sends an e-mail message when R-Drive Image fails to perform the specified action. May be used as a <u>Boolean parameter</u> .
-mx	Optional	Sends an e-mail message when R-Drive Image successfully performs the specified action. May be used as a <u>Boolean parameter.</u>
- ms= <smtpserve r[:port]></smtpserve 	Mandatory/Not used	Mandatory if the -me or/and -mx option is used. Specifies an SMTP server and port (optional). Examples: -ms=mail.example.com or - ms=mail.example.com:25
- ma= <senderema il></senderema 	Mandatory/Not used	Mandatory if the -me or/and -mx option is used. Specifies a sender's e-mail address. Example: -ma=rttl@example.com
- mr= <recepient Email></recepient 	Mandatory/Not used	Mandatory if the -me or/and -mx option is used. Specifies a recipient's e-mail address or addresses. Example: -ma=rtt2@example.com
- ml= <login:pas sword></login:pas 	Optional	Specifies a login and password at the SMTP server. Example: -ml=rtt1:password
- mz= <ssloption s></ssloption 	Optional	Specifies the SSL options. Can be auto, no, ssl, tls. Default is auto Example: -mz=ssl
- mn= <sendernam e></sendernam 	Optional	Specifies the sender name. Example: -mn="Jhon Smith"
- mc= <mailsubje ct></mailsubje 	Optional	Specifies the mail subject Example: -mc="Backup Result"

Boolean parameters

Those are parameters that may have Boolean values:

true, 1, yes, false, 0, no.

They may be used as keys (example: -u) or as parameters with values (example: -u=true).

Entities or Variables.

Entities may be used as variables to create various text strings. They are start with & and end with ; .

Version Entities.

In the examples below, the **R-Drive Image** version is assumed as 4.1.67

Entity	Description
&rdi.ver	The R-Drive Image version. Example: "4.1"
&rdi.ver.build	The R-Drive Image build. Example: "4167"
;	
&rdi.ver.major	The R-Drive Image major version. Example: "4"
;	
&rdi.ver.minor	The R-Drive Image minor version. Example: "1"
;	
&rdi.ver.submi	The R-Drive Image sub-minor version. Example: "67"
nor;	

Result Entities

Entity	Description
	Returns the last result of R-Drive Image operation. May be undefined, success,
lt;	failed.

Time Entities.

In the examples below, the system time is assumed as 11:10:04 AM

Entity	Description						
&sys.time	System time in the locale format. Example: "11:10:04". Please note that it is impossible						
	se this entity in file names because it contains an invalid character :.						
&sys.time.m	Minutes						
&sys.time.h	Hours in the 24 h format						
&sys.time.h12	Hours in the 12 h format						
&sys.time.h24	Hours in the 24 h format						
&sys.time.s	Seconds						
&sys.timem	PM or AM						

Date Entities.

In the examples below, the system date is assumed as February 1, 2007, Thursday

Entity	Description
&sys.date	System date in the locale format. Example: "29/01/07". Please note that it is not
	recommended to use this entity in file names because that will create a chunk of folders.
&sys.date.d	Month day. Example: "01"
&sys.date.m	Month. Example: "02"
&sys.date.y	Short year. Example: "07"

&sys.date.yyyy	Long year. Example: "2007"
;	
&sys.date.m.na	Month name. Example: "February"
me;	
&sys.date.m.nm	Short month name. Example: "Feb"
;	-
&sys.date.wd	Week day number, starting from Sunday. Example: "5"
&sys.date.wd.n	Week day name. Example: "Thursday"
ame;	
&sys.date.wd.n	Short week day name. Example: "Th"
m;	

Enumeration Entities

Entity	Description
&rdi.enum	Defines the number of calls to this entity. Starts from 0.
&rdi.enum. <num< td=""><td>Defines the number of calls to this entity. Starts from 0. Num specifies the format of the</td></num<>	Defines the number of calls to this entity. Starts from 0. Num specifies the format of the
>;	number. Example: &rdi.enum.3 will return 001 for the second calls to this entity.

User-defined entities

You may create your own entities using the set command. Example:

set creat_date = "&sys.date.m.name;-&sys.date.d;-&sys.date.y;"

You may use this entity, for instance, set a command creating files with their date of creation as the file name:

create -a="D:\archive\&creat date;.rdr" -s="c:"

If the date when the script has been run is February 1, 2007, Thursday, this command will create an image of the logical disk C: and write it to the D:\archive\February-01-07.rdr file.

Please note that the set command defines the entities rather than specifies their value. The actual value of an entity will be determined each time the entity is used. Example:

```
set creat_time = "&sys.time.h24;-&sys.time.m;-&sys.time.s;"
```

and the creat time entity is used in two commands in a script:

```
create -a="D:\archive\&creat_time;.rdr" -s="c:"
```

create -a="D:\archive\&creat_time;.rdr" -s="c:"

R-Drive Image will create two different files with different file names, each representing the time of file creation.

The unset command deletes entities. Example:

```
unset creat_date creat_time
```

After this command the creat_date and creat_time entities cannot be used and cause **R-Drive Image** to generate an error if they appear further in the script.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

VII Technical Information

This chapter gives technical information on

- <u>Updates</u>
- Cloud Services
- FTP/FTPS/SFTP Servers
- Network-Drives
- Image Replications
- Logging
- <u>Creating consistent point-in-time backups</u>
- Support for Various Disk Partition Schemes and File Systems
- <u>Supported Virtual Disk and Disk Image Formats:</u>
- Disk Wiping Algorithms
- Supported CD and DVD Recorders
- List of Hardware Devices Supported in the Startup Mode

The **Disk Actions** chapter explains disk actions such as:

- Create an Image of a partition, logical disk, or entire hard drive
- Create an Image from Files
- Copy Files to a Folder
- <u>Restore Data from an Image</u>
- Copy Disk to Disk to make an exact copy of one disk on another
- Manage partition and logical disks
- Mount an Image as a Virtual Logical Disk (read-only)
- Unmount Virtual Logical Disks
- Check an Image File to check an existing image file

The **RAIDs**, and Various Disk and Volume Managers chapter explains how to perform disk actions with various compound volumes such as:

- Hardware RAIDs
- <u>BitLocker Drive Encryption</u>
- Windows Software RAIDs, Spanned, and Other Volumes
- <u>Windows Storage Spaces</u>
- Apple RAIDs
- <u>Apple CoreStorage/File Vault/Fusion Drive Volumes</u>
- Linux mdadm RAIDs
- Linux Logical Volume Manager Volumes

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup Version** such as:

- <u>Create Startup Disk</u>
- Load Computer into Startup Mode

- <u>Restore Data From an Image</u>
- Create an Image
- Disk to Disk Copy
- Create an Image from Files
- <u>Partition Manager</u>
- Check an Image File
- Network Drives

The <u>Scheduled Actions</u>, <u>Command Line Operations</u>, <u>and Scripting</u> chapter explains how to start disk actions automatically at scheduled times/events and create scripts that can be performed from a command line.

- <u>Scheduler and Unattended Actions</u>
- <u>Scripting and Command Line Operations</u>
- <u>Rotation schemes (backup sets)</u>

The **<u>R-Drive Image OEM kit</u>** chapter explains how computer system integrators can create system recovery disks for their systems

- Create a Master Image
- <u>Create Startup Media</u>

Follow this link to obtain **<u>R-Drive Image Contact Information and Technical Support</u>**

7.1 Updates

Automatic update

R-Drive Image may automatically check for available updates. When it finds an update it shows a widget on its panel. You may start updating by clicking this widget.



R-Drive Image Action selection panel

Manual update

You may manually update **R-Drive Image** either on the **About R-Drive Image** dialog box, or on the **Action** selection panel.



R-Drive Image Action selection panel

7.2 Cloud Services

Please note: Because **R-Drive Image** software uses cloud storage provider APIs, **R-Tools Technology, Inc** cannot be held responsible for any issues related to the APIs and any services provided by cloud storage companies.

R-Drive Image can save images in cloud services and restore them from those services. The following services are currently supported:

- Google Drive® (Note that for this cloud service, R-Drive Image can view, delete, and download only those files that it has created. If you upload an R-Drive Image file to your Google Drive account by yourself, R-Drive Image will not be able to see it and download.)
- Microsoft OneDrive® (for home and private use)
- Microsoft OneDrive® for Business (for organizations, especially if they use Microsoft 365 or SharePoint)
- Dropbox®
- Amazon S3[®] (for Amazon S3[®] and compatible systems)
- Google Cloud Storage® (available in the Corporate, Technician, and Commercial licenses)
- Microsoft Azure® (available in the Corporate, Technician, and Commercial licenses)
- WebDav® (OwnCloud and NextCloud extensions).

You need to connect to the service before you'll be able to use the service. We'll show how to do that using Google Drive as an example.

To connect to the Google Drive:

1 Click the **Connection to cloud button**

Connect to cloud

R-Drive Image - Create Image	- 🗆 X
Select the destina	ation for the new image ····
✓ Desktop > OneDrive - Personal > Tester 1 ✓ This PC > 30 Objects > Desktop > Downloads > Music > Pictures > Videos > System (C:) > Deta (D:)	Existing image details
	Imaging mode Create a new full image
Map network drive Connect to cloud File name: Enter file name	R-Drive Image format
- Back	Options 1 Disk Selected Next

2 Select the service you want to connect to and double-click it Connect to cloud window

> OneDrive - Person		×
> 🔏 Tester 1 Y 🐖 This PC > 🧊 3D Objects	Google Drive	
> E Desktop > 🔮 Documents > 🕹 Downloads	Alicrosoft OneDrive	
> 🚺 Music > 📰 Pictures > 🎆 Videos	Microsoft OneDrive for Business	
> 🏪 System (C:) > 👝 Data (D:) > 📷 Libraries	Tropbox	
> 💣 Network > 📙 New folder	Amazon S3	
	Soogle Cloud Storage	full image
	Soogle Cloud Storage	full image

A default browser window will appear.

3 Select your Google account and log in to it Google account



4 Review the permissions for R-Drive Image and click Continue



5 Make sure that R-Drive Image successfully authorized and close the browser R-Drive Image authorized



> R-Drive Image will connect to GoogleDrive GoogleDrive connection

🕞 R-Drive Image - Create Image	- 🗆 X
G Select	the destination for the new image
➤ This PC ><	Existing image details MBR C: (FAT-TEST) 7.02GB 2GB FAT16 Dates of included archives 2/8/2024 10:21:59 AM
GOOGLE DRIVE: (Google Drive, rtttestu Gorinage.rdr Finitionais Wetwork New folder	Imaging mode Differential V
Map network drive Arive Con File name: drive://rtttestuser87%40gmai	Il.com@/G-image.rdr Replications R-Drive Image format v Options 1 Disk Selected Next

You may adjust **Cloud options** if necessary.

GoogleDrive options

Options			
Image options	Cloud timeout		
inage options	Operations timeout (sec)	Default	*
Notifications	I/O timeout (sec)	Default	*
Backup options	Primary cloud upload cache folder		
Cloud options	Folder path D:\111\		
Replications			
Repircations			

> Now you may save/download image files on/from the cloud service as it was a local drive These connections will be automatically re-activated upon a new **R-Drive Image** start.

You may manage cloud service connection in Connection Manager.

You may delete existing and create new connections, and deactivate active connections.

Connection manager

Main menu	Connection manager				×
✓ Image This P > Image This P	Add connection -	Disconnect			
> 🗎 Do > 🖶 Do > 👆 M	Provider	Connected as	Connected to	Connected on	
 ▷ Pi ▷ Vi ▷ Vi ▷ Vi ▷ Pi <l< td=""><td>Google Drive</td><td>rttlestuser87@g</td><td></td><td>11/4/2024 1:09:2. 11/4/2024 1:13:2.</td><td></td></l<>	Google Drive	rttlestuser87@g		11/4/2024 1:09:2. 11/4/2024 1:13:2.	
ile name:				Close	ge format

You may create another account in the same cloud service using **Connection manager**.

1 Click the Add connection button and select the service you want to connect to Add connection window

Main menu	Connection manager Add connection Discon	stination for the new	x x	
> ■ C > ⊕ C >	 Google Drive Microsoft OneDrive Dropbox Amazon S3 Google Cloud Storage Microsoft Azure WebDav FTP 	d as Connected to	Connected on 11/4/2024 1:09:2 11/4/2024 1:17:4	

2 Log in to another Google account Another Google account

R-Drive I	G Sign in - Google Accounts x + -		×) o x
Main mer	\leftrightarrow \rightarrow C \Rightarrow accounts.google.com/o/oauth2/au \Rightarrow \bigcirc \bigtriangleup	ß	:	
✓ ■ De: > ● > & ↓ ■	G A new look is coming soon Google is improving its sign-in page with a more modern look and feel	smiss		
> > > > > > > > > > > > > > > > > > > >	Choose an account to continue to R-Drive Image			
>	R-TT Test User rtttestuser131@gmail.com			
	R-TT Test User rtttestuser87@gmail.com Use another account			
File nar	Before using this app, you can review R-Drive Image's privacy policy and terms of service.		-	ormat 💌

Another connection will appear in Connection manager Connection manager with two Google accounts

	Connection manager	the destination for the		×		
 Desktop OneDrive Tester 1 This PC 	Add connection -	XDisconnect				
> 🧊 3D OL	Provider	Connected as	Connected at			
> 🔜 Deskt > 🔮 Docu	lacktriangle Google Drive	rtttestuser131@gmail.com	1/16/2024 1:40:29 PM			
> 🔶 Down > 🍌 Music	🐴 Google Drive	rtttestuser87@gmail.com	2/8/2024 10:18:45 AM			
 Pictu Video Systei Data NTFS: FAT3: FAT3: FAT-1 GOO GOO GOO 	A Microsoft OneDrive	raptorbck@gmail.com	2/7/2024 10:54:51 AM			
ile name:			Close	R ge f	format	
Back			Options 1 Disk Select	ed be	Nex	t

Then you may close **Connection manager**

> Connection to cloud will also show multiple connections

Connection to cloud window with multiple Google accounts



Connection to cloud will also show multiple connections Connection to cloud window with multiple Google accounts R-Drive Image - Create Image

	Connect to cloud	×
CORDJ OneDrive - Person CondDrive - Person This P C Destop Destop Downloads Downl	Google Drive (connected as multiple users) Microsoft OneDrive (connected as raptorbck@gmail.com Dropbox	m) Jil image
<u><</u>	Connection manager	
ile name: Enter file	name 📃 🖿	Replications R-Drive Image format

Now you may chose the cloud service and the account to save/load images.

Accounts of cloud services

Main menu	
 Music Pictures Videos System (C.) Data (D;) NTFS-Test (E;) FAT-TEST (G;) FAT-TEST (G;) GOGGLE_DRIVE: (Google Drive, rtttestuser131@gmail.) GOGGLE_DRIVE_2: (Google Drive, rtttestuser87@gmail.) GOGGLE_DRIVE_2: (Google Drive, rtttestuser87@gmail.) GOGGLE_DRIVE_2: (Google Drive, rtttestuser87@gmail.) GOGGLE_DRIVE_2: (Google Drive, rtttestuser87@gmail.) Gougle_DRIVE_2: (Google Drive, rtttestuser87@gmail.) Gougle_DRIVE_2: (Google Drive, rtttestuser87@gmail.) Gougle_DRIVE_2: (Google Drive, raptorbck@gmail.co) Documents Pictures 	Existing image details MBR 7.02GB C: (FAT-TEST) 2GB FAT16 Dates of included archives 2/8/2024 10:21:59 AM
Augustates Augustates New folder Map network drive Source to cloud File name: google_drive://rttlestuser87%40gmail.com@	/G-ime CReplications R-Drive Image format

Google Drive® is a trademark of Google Inc. Use of this trademark is subject to Google Permissions. Microsoft OneDrive® is a trademarks of the Microsoft group of companies. Dropbox® is a trademark of Dropbox, Inc.

7.3 FTP/FTPS Servers

R-Drive Image can save images on FTP/FTPS/SFTP servers and restore them from those servers. Note that incremental/differential imaging modes are disabled for such servers.

You need to connect to the FTP/FTPS/SFTP server before you'll be able to use it.

To connect to an FTP/FTPS/SFTP server:

1 Click the Connection to cloud button

Connect to cloud

🕞 R-Drive Image - Create Image	– 🗆 X
Select the	destination for the new image ····
Desktop > OneDrive - Personal > ■ This PC > ■ 30 Objects > ■ Desktop > ■ Desktop > ■ Desktop > ■ Desktop > ■ Downloads > ■ Music > ■ Pictures > ■ Videos > ■ System (C:) > ■ Data (D:) > ■ NTFS-Test (E:) > ■ FAIT-TEST (G:) > ■ Libraries	Existing image details
> # Network > New folder Map network drive Annect File name: Enter file name	
Back	Options 1 Disk Selected Next

2 Select FTP and double-click it

Connect to FTP

G	Calast the destination for	
Main menu	Connect to cloud	×
 Desktop OneDrive - Personal Tester 1 Desktop Tester 1 	Amazon S3	8
 ✓ Inis PC > 20 Objects > ■ Desktop 	Soogle Cloud Storage	
 Documents Downloads Music 	Microsoft Azure	
> 📰 Pictures > 📓 Videos	WebDav	
> ' System (C:) > _ Data (D:) > _ Libraries > / Network > _ Network	FTP	
	S Connection manager	Connect Close
File name: Enter file nan		R-Drive Image format
H Back		Options 1 Disk Selected Next

3 Enter the FTP parameters and click the OK button Connect to FTP

 Desktop OneDrive - Personal Tester 1 	Connect to cloud X
Image: This PC Image: This PC Image: This PC Image: Desktop Image:	FTP authorization parameters X Protocol FTPS (Explicit) Host ftp.example.com Poiler Vert User User1 Password Image: Common Parameters Anonymous logon Image: Common Parameters
	Import URL Ok Cancel

You may select either the FTP, or FTPS, or SFTP protocols.

FTPS has two modes:

FTPS (Explicit)default port: 21, a plain connect elevated to an SSL/TLS connection.FTPS (Implicit)default port: 990, an SSL/TLS connect is immediately provided.

Do not use prefixes like ftp:// or ftps:// in the host field.

You may import an ftp url in the following form

Import FTP parameters

 ✓ Decktop > OneDrive - Personal > 2 Tester 1 ✓ This PC > 3 D Objects > Documents > Downloads > Music > Pictures > Videos > System (Cc) > Data (Dc) > Libraries > Network > New folder 	Connect to cloud ×
	Import URL Ok Cancel

163

> Now a connection to the FTP server appears in the folder tree An FTP connection

	estination for the new image 🔹 💀
Alain menu	Existing image details MBR 7.02GB E: (NTF S-Test) 2.92GB NTFS Dates of included archives 12/16/2024 8:49:26 AM
E-image.rdr E-image.rdr F-image.rdr Eubin	

7.4 Network Drives

You may map (connect) network drives directly from **R-Drive Image** and save/restore images to/from those drives.

To map a network drive,

1 Click the Map Network Drive button and enter required information

Map network drive

Server IP address	192.168.1.5	-
Server share name	D	
Login	Tester 1	
Password		
Permanent map	ping	

Select Permanent mapping if you want R-Drive Image to automatically map the drive next time R-Drive Image starts.

> The mapped network drive will appear.

Mapped network drive



7.5 Image Replications

R-Drive Image can save several copies of the same image during one single imaging process. Such process is called "replication". This greatly increases safety of the imaged data. Image replicas can be saved in various locations: in other folders on the same disk (not very safe!), on other local disks, on network drives, or <u>cloud</u> <u>services</u>.

R-Drive Image first creates the main image file in the Main copy folder and then replicates in to other specified places. That is why it's important to create the main image on the fastest location, like a local disk.

To create image replicas:

1 Click the Replications button

Replications



2 Specify folders to save image replicas on the **Replications** tab. Replications options

Options				
Image options	Main image file File name: D:\RDH	mages\F-image.rdr		
Notifications	Add replication			
Backup options	Replicate to folder:	D:\Backups		
Replications	Replicate to folder:	D:\Backups1		🗙
			Ok	Cance

> R-Drive Image will save image replicas in these folders.

Replications options tab for differential file copy has another look:

Replications options for differential file copy

O ptions			
Image options	Main image file		
initige optione	File name: D:\Ba	ickups\E_files-image.rdr	
Notifications	+ Add replication		
Backup options	Replicate to folder:	D:\Backups1	····) 🔀
Replications	Replicate to folder:	D:\Backups2	🗙

Replications options tab for rotation schemes has additional items.

Replications options for rotation schemes

Q Options		
Image options	Main image file File name: D:\111\H-image.rdr	
Notifications	Add replication	
Backup options	Replicate to folder: D.\Backups	
Replications	Replicate whole rotation Delete extraneous image files from destination path	

Replicate whole rotation	If this checkbox is selected, R-Drive Image will replicate all images included in the rotation. If it's clear, it will replicate the last full image and all its differential / incremental images.
Delete extraneous image files from destination path	If this checkbox is selected, R-Drive Image will delete those image files in the destination folder which have been removed/deleted among those that are set for replication.

If you set file deletion by various limits on the **Rotation options** tab and want those files deleted in the replications, you need to select both these checkboxes.

7.6 Logging

R-Drive Image stores logs of several last actions. You may see them on the **Executed operation(s) log** panel. The default internal log file extension is .rdl. **R-Drive Image** exports logs in this format when executing the **Save log**... / **Save all logs** command from the **Executed operations(s) log** panel. You may view such a file by double-clicking it.

When **R-Drive Image** finishes its work it can show you a brief descriptions and result of the performed operations.

Click the Open logs button and the Operation details window will appear.

Operation details	5	>	ipt
Туре	Date/time	Message	10.0
 Application 	7/2/21 8:42 AM	List of operations: Append to an Image: Y:\RDI- Images\Partition1-1 Partition1-3-image.rdr Backup partition [QUANTUM FIREBALL CR8.4A (7.87GB #1)] F: NTFS-Test (NTFS 2.92GB #1) H: FAT-TEST (FAT 16 2GB #3)Backup disk partition	
Debug	7/2/21 8:42 AM	Before backup operation	
Debug	7/2/21 8:48 AM	After backup operation)
1 Application	7/2/21 8:48 AM	1 file has been added to the image, currently the i	s)
1 Application	7/2/21 8:48 AM	930.8GB free of 1.81TB on volume Y:	
1 Application	7/2/21 8:48 AM	Operation completed successfully	1
			e B
Save log	Print log	Send log via email)

You may save the log, print the log, or send it somewhere via email.

R-Drive Image keeps a log of all performed operations on the Executed operation(s) log panel.

You may turn on saving the log into a file.

To turn logging on:

- 1 Click the About button
- 2 Select Logging and specify a log file name and its path on the About R-Drive Image dialog box.



7.7 Creating Consistent Point-in-Time Backups

Some programs may write some data on the disk while **R-Drive Image** is creating a data backup. To avoid data inconsistency, **R-Drive Image** uses two mechanisms for creating consistent point-in-time backups.

Windows XP, Windows Server 2003, Windows Vista, and later

R-Drive Image uses Microsoft Volume Shadow Copy Service (VSS) to notify other applications supporting this service that it is going to start a data backup process in order for them to flash all necessary data to the disk. Most applications like Microsoft Exchange Server, Microsoft SQL Server, and Oracle software support this service.

Options Windows Volume Snapshot Service and Notify system application on the **Backup Options** panel enable/disable the use of this service.

If a software that does not support VSS runs on your computer, you may use Backup AUX applications and Snapshot AUX applications on the **Backup Options** panel (and their respective commands/parameters in <u>scripts</u>) to send special commands to your application that will make that application flush its data to the disk before the backup process starts.

Windows 2000 and earlier

R-Drive Image uses its own driver to create a file system snapshot but it does not notify other applications that it is going to start a backup process. Therefore, if an application stores some of its data in memory, they will not be saved in the backup file. To avoid data inconsistency, we recommend you to use Backup AUX applications and Snapshot AUX applications on the Backup Options panel (and their respective commands/parameters in <u>scripts</u>) to send special commands to your application that will make that application flush its data to the disk before the backup process starts.

Option R-TT Volume Snapshot Service on the **Backup Options** panel enables/disables the use of this service.

Backup Options	
Snapshot provider	A snapshot provider is a service R-Drive Image uses to read the disk content while creating its image. R-Drive Image uses the snapshot providers in the order specified on the tab. If it fails to use the first one selected, it tries to use the second one, and so on.
Windows Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use the Windows native snapshot provider. This snapshot provider is able to notify system applications that a snapshot is being taken. If this option is selected, pagefile.sys and hibernate.sys files are excluded from the image of the system disk.
R-TT Volume Snapshot Service	If this check box is selected, R-Drive Image will try to use R-TT snapshot provider. This snapshot provider is not able to notify system applications that a snapshot is being taken.
Notify system applications	If this check box is selected, the snapshot provider, if it supports this feature, notifies system applications that a snapshot is being taken.
Limit I/O rate	Specifies the rate limits for reading/writing data from/to disks
Limit read	The rate limit for reading from the source disk
Limit write	The rate limit for writing to the destination disk
Process priority	These options specify how much computer resources R-Drive Image will consume during a backup process.

Backup Options

Priority Task Manager. Use CPU cores Specifies how many processor cores R-Drive Image will use for the backup process. Ignore disk read errors (bad sectors) If this check box is selected, R-Drive Image will ignore possible read error when it tries to read data from bad sectors. R-Drive Image works with disks with bad sectors in the following way: It reads a certain part of disk (predefined by Windows) and If read errors are ignored, the entire part with bad sectors will be filled wit zeros. If fread errors are not ignored, R-Drive Image reads that part sector by secto and shows a warning message for every bad sector with two options: skip th sector or try to read it again. In this case only the bad sectors will be filled wit zeros, but all that requires manual actions and extremely slows the imagin process. Please note that R-Drive Image is developed for the work with normall functioning disks. If you need to image a malfunctioning disk, use R-Studio , id data recovery utility. It has more controls for imaging, and can create R-Drive Image -compatible images even in its demo mode, that is, without registering. Backup AUX applications R-Drive Image is able to make applications should return a 0 exit code. Leave these fields blank if in doubt. Before An application R-Drive Image starts before the backup operations completes. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat." Snapshot AUX applications R-Drive Image is able to make applications run before and after taking th snapshot of one or several v		
Ignore disk read errors (bad sectors) If this check box is selected, R-Drive Image will ignore possible read error when it tries to read data from bad sectors. R-Drive Image works with disks with bad sectors in the following way: It reads a certain part of disk (predefined by Windows) and • If read errors are ignored, the entire part with bad sectors will be filled wit zeros. • If read errors are not ignored, R-Drive Image reads that part sector by secto and shows a warning message for every bad sectors will be filled wit zeros, but all that requires manual actions and extremely slows the imagin process. Please note that R-Drive Image is developed for the work with normall functioning disks. If you need to image a malfunctioning disk, use <u>R-Studio</u> , idata recovery utility. It has more controls for imaging, and can create R-Drive Image-compatible images even in its demo mode, that is, without registering. Backup AUX applications R-Drive Image is abe to make application should return a 0 exit code. Leave these fields blank if in doubt. Before An application R-Drive Image starts before the backup operations completes. I you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat" After An application R-Drive Image is able to make applications run before and after taking th snapshot AUX applications Before An application R-Drive Image starts after the backup operations completes. I you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat" Before An application R-Drive Image is able to make applications run befor	-	Specifies the priority of the backup process. Similar to that specified in Windows Task Manager.
(bad sectors) when it tries to read data from bad sectors. R-Drive Image works with disks with bad sectors in the following way: It reads a certain part of disk (predefined by Windows) and If read errors are ignored, the entire part with bad sectors will be filled with zeros. If read errors are not ignored, R-Drive Image reads that part sector by sector and shows a warning message for every bad sector with two options: skip th sector or try to read it again. In this case only the bad sectors will be filled with zeros, but all that requires manual actions and extremely slows the imagin process. Please note that R-Drive Image is developed for the work with normall functioning disks. If you need to image a malfunctioning disk, use <u>R-Studio</u> ; data recovery utility. It has more controls for imaging, and can create R-Drive Image-compatible images even in its demo mode, that is, without registering. Backup AUX applications R-Drive Image is able to make applications run before and after all backup operations. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt. Before An application R-Drive Image starts before the backup operations starts. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat" Snapshot AUX applications R-Drive Image is able to make applications run before and after taking th snapshot of one or several volumes. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt. Before An application R-Drive Image starts before the backup operations completes. I you need to start several applications,	Use CPU cores	Specifies how many processor cores R-Drive Image will use for the backup process.
Backup AUX applications R-Drive Image is able to make applications run before and after all backup operations. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt. Before An application R-Drive Image starts before the backup operations starts. If you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat" After An application R-Drive Image starts after the backup operations completes. I you need to start several applications, you may use a command file. Example: "cmd.exe /c example.bat" Snapshot AUX applications R-Drive Image is able to make applications run before and after taking the snapshot of one or several volumes. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt. Before An application R-Drive Image starts before it takes the snapshot of one o several volumes. If you need to start several application, you may use a command	-	 R-Drive Image works with disks with bad sectors in the following way: It reads a certain part of disk (predefined by Windows) and If read errors are ignored, the entire part with bad sectors will be filled with zeros. If read errors are not ignored, R-Drive Image reads that part sector by sector and shows a warning message for every bad sector with two options: skip the sector or try to read it again. In this case only the bad sectors will be filled with zeros, but all that requires manual actions and extremely slows the imaging process. Please note that R-Drive Image is developed for the work with normally functioning disks. If you need to image a malfunctioning disk, use <u>R-Studio</u>, a data recovery utility. It has more controls for imaging, and can create R-Drive
Init application if is into thing to this order the order properties of the properties of		R-Drive Image is able to make applications run before and after all backup operations. Please note that those application should return a 0 exit code. Leave
Image in application in the provention of the proventin of the provention of the provention of the proventi	Before	
applicationssnapshot of one or several volumes. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.BeforeAn application R-Drive Image starts before it takes the snapshot of one o several volumes. If you need to start several application, you may use a command	After	An application R-Drive Image starts after the backup operations completes. If you need to start several applications, you may use a command file.
several volumes. If you need to start several application, you may use a command		R-Drive Image is able to make applications run before and after taking the snapshot of one or several volumes. Please note that those application should return a 0 exit code. Leave these fields blank if in doubt.
Example: "cmd.exe /c example.bat"	Before	An application R-Drive Image starts before it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"
After An application R-Drive Image starts after it takes the snapshot of one or several volumes. If you need to start several application, you may use a command file. Example: "cmd.exe /c example.bat"	After	

If any of Backup AUX applications and Snapshot AUX applications are executed, the following environment variables are set:

R_CALLBACK_UID	A unique digital backup id used in all calls for external commands pertaining to that
	backup process.
R_CALLBACK_STAGE	Takes the following values:

	BEFORE_BACKUP
	AFTER_BACKUP
	BEFORE_SNAPSHOT
	AFTER_SNAPSHOT
R_VOLUME_NAMES	A comma-separated name list of partitions to be processed.
R_VOLUME_GUIDS	A comma-separated GUID list of partitions to be processed

Therefore, the same command may be used for all the fields provided it will determine using R CALLBACK STAGE in which context it is called.

Below is an example of the variables when disks c: and D: are being backed up:

```
R CALLBACK UID=2008
R CALLBACK STAGE=BEFORE BACKUP
R VOLUME NAMES=C:, D:
R VOLUME GUIDS={d5f570a1-2978-11dc-83bf-005056c00008}, {9636e065-f75e-11dc-981a-
829328f78201}
R CALLBACK UID=2008
R CALLBACK STAGE=BEFORE SNAPSHOT
R VOLUME NAMES=C:
R VOLUME GUIDS={d5f570a1-2978-11dc-83bf-005056c00008}
R CALLBACK UID=2008
R CALLBACK STAGE=AFTER SNAPSHOT
R VOLUME NAMES=C:
R VOLUME GUIDS={d5f570a1-2978-11dc-83bf-005056c00008}
R CALLBACK UID=2008
R CALLBACK STAGE=BEFORE SNAPSHOT
R VOLUME NAMES=D:
R VOLUME GUIDS={9636e065-f75e-11dc-981a-829328f78201}
R CALLBACK UID=2008
R CALLBACK STAGE=AFTER SNAPSHOT
R VOLUME NAMES=D:
R VOLUME GUIDS={9636e065-f75e-11dc-981a-829328f78201}
R CALLBACK UID=2008
R CALLBACK STAGE=AFTER BACKUP
R VOLUME NAMES=C:,D:
R VOLUME GUIDS={d5f570a1-2978-11dc-83bf-005056c00008},{9636e065-f75e-11dc-981a-
829328f78201}
```

Note: If the system settings permit, several disks may appear in one snapshot. Then the following calls will appear:

```
R_CALLBACK_UID=2008
R_CALLBACK_STAGE=BEFORE_BACKUP
R_VOLUME_NAMES=?:,D:
R_VOLUME_GUIDS={d5f570a1-2978-11dc-83bf-005056c00008},{9636e065-f75e-11dc-981a-
829328f78201}
R_CALLBACK_UID=2008
```

R_CALLBACK_STAGE=BEFORE_SNAPSHOT

```
R_VOLUME_NAMES=?:,D:
R_VOLUME_GUIDS={d5f570a1-2978-11dc-83bf-005056c00008}, {9636e065-f75e-11dc-981a-
829328f78201}
R_CALLBACK_UID=2008
R_CALLBACK_STAGE=AFTER_SNAPSHOT
R_VOLUME_NAMES=?:,D:
R_VOLUME_GUIDS={d5f570a1-2978-11dc-83bf-005056c00008}, {9636e065-f75e-11dc-981a-
829328f78201}
R_CALLBACK_UID=2008
R_CALLBACK_STAGE=AFTER_BACKUP
R_VOLUME_NAMES=?:,D:
R_VOLUME_GUIDS={d5f570a1-2978-11dc-83bf-005056c00008}, {9636e065-f75e-11dc-981a-
829328f78201}
```

7.8 Support for Various Disk Partitioning Schemes and File Systems

R-Drive Image supports various non-MBR/GPT disk partition schemes: Dynamic disk, BSD Slice, Apple Partition Map with the following restrictions:

- Changes in disk partitioning schemes are supported for basic (regular) and dynamic MBR/GPT disks. **R-Drive Image** can change partitioning schemes (the number of partitions and their sizes) while restore the data.
- The other partitioning schemes may be backed up and then restored only on their original places or other partitions of the same size. For example, a backup of dynamic disk D: may be restored on disk D:, or on any other dynamic partition provided that its size matches exactly that of disk D:.
- A basic partition may be restored on another partition of another scheme with the above limitation, and a partition of another scheme may be restored as a basic one without limitations.

Partitions with various file systems are supported by R-Drive Image differently:

File system	Imaging/Copy	Restore	Partition Resizing*	Virtual Disk Mount	Imag e creati on from files
FAT (16/32), NTFS	Byte-by-byte and Useful Information Only	Entire partition and Selected folders and files.	Yes.	Yes	Yes
exFAT, ReFS	Byte-by-byte and Useful Information Only	Entire partition and Selected folders and files.	No	Yes (if the Windows version supports)	Yes
HFS/HFS+	Byte-by-byte and Useful Information Only	Entire partition and Selected folders and files	Yes	No (Yes, if third- party file system drivers are installed)	No (Yes, if third- party

17	73
----	----

					file syste m driver s are installe d)
APFS	Byte-by-byte and Useful Information Only	Entire partition and Selected folders and files	No	No (Yes, if third- party file system drivers are installed)	No (Yes, if third- party file syste m driver s are installe d)
Ext2/Ext3/Ext4 FS (Linux) XFS, and Little and Big Endian variants of UFS1/UFS2	Byte-by-byte and Useful Information Only	Entire partition and Selected folders and files.	No	No (Yes, if third- party file system drivers are installed)	No (Yes, if third- party file syste m driver s are installe d)
Unknown	Byte-by-byte	Entire partition	No	No	No

* For non-MBR/GPT disk partition schemes, partition resizing can be done within existing disk partitioning schemes.

7.9 Supported Virtual Disk and Disk Image Formats

Along with file formats used for purely disk backup and imaging purposes, there are file formats for virtual disks. Virtual disks are software components that emulates data storage devices in virtual machines. A the same time, virtual disks can be used for disk backup and imaging, too. That is why it's expedient for disk backup and imaging software to support various file formats for virtual disks. This is especially important for system interoperability, when it's necessary to use disk backup/image files on other machines where the disk backup and imaging software isn't installed.

Currently R-Drive Image supports the following virtual disk and disk image formats:

RDR: A proprietary disk image format developed by **R-Tools Technology, Inc (R-TT)**. It is the main format in **R-Drive Image**, **R-Studio**, **R-Linux**, and **R-Undelete**. RDR files are interchangeable, that is, any **R-TT** program may load and process, within its capabilities, any rdr file created in another **R-TT** program.

VHD/VHDX: A virtual disk file format built into Windows. It's a native virtual hard drive for Hyper-V, the Windows virtual machine. You may read more about these file formats in Wikipedia: <u>VHD (file format</u>). **R**-**Drive Image** creates a special file with some metadata for the VHD file format, its extension is vhr. The VHDX file format contains this metadata within its main file.

VMDK: A virtual disk file format for the most virtual machines like VMware Workstation, VirtualBox, Parallels Desktop for Mac, etc. You may read more about these file format in our Glossary: <u>What is a VMDK Virtual Disk</u>. Available only in **Corporate, Technician**, and **Commercial** licenses.

VDI: A virtual disk file format for the VirtualBox virtual machine. **R-Drive Image** creates a special file with some metadata for the VDI file format, its extension is vdr. You may read more about these file format in Wikipedia: <u>VDI</u>. Available only in **Corporate, Technician**, and **Commercial** licenses.

Features	RDR	VHD/VHDX	VMDK	VDI
Several objects from different physical drives in one image	Yes	No	No	No
<u>Compression</u>	Yes	No	Yes	No
Encryption	Yes	No	No	No
Image Split	Yes	No	Yes	No
Native mounting on Windows	No	Yes	No	No
Mounting on Windows using R-Drive Image	Yes	Yes	Yes	Yes

The main features of these file formats are presented in the table below:

Unlike the image in the RDR format which may contain not only entire hard drives, but also separate disk objects (partitions and free spaces), all other formats can contain only images of entire hard drives. Therefore, **R-Drive Image** uses some special tricks to bypass this restrictions. Those objects still must be on the same hard drive.

Method	
Replicate source disk	The image will contain all objects on the source disk. Objects that are not selected for imaging will be replaced with unallocated space. Unallocated spaces in such images are purely virtual objects and will not increase the size of the resulting file. Such images can be bootable when they contain all necessary partitions for bootable devices, but Windows 11 cannot mount such images by a double click.
Create synthesized disk	A new virtual hard drive will be created. It will contain only the selected disk objects. Windows 11 will be able to mount such images by double clicking the entire hard drive with the selected objects.
Auto	R-Drive Image will automatically select the method. If the image is to contain only one non-bootable object, Create synthesized disk will be selected. Otherwise, R-Drive Image will select Replicate source disk.

The method can be selected on the Image options tab

Disk mode

	Image compression level		Image split size		
Image options	Faster	Smaller	Automatic		
Notifications	speed •	size	C Fixed Size	MB	
Backup options	Estimated image size: 18.4GB				
	Password protection				
Replications	(Er	icrypt image			
	VHD disk mode Replicate source d	isk		 	
	VHD disk mode Replicate source d	isk			
		isk			
		isk		 	
		isk		 	
		isk		 	
		isk		 	
		isk		 	
		isk			
	Image description				

Imaging results

Disk objects to image

	MBR 111.7GB	E: (Partition1) 39GB NTFS	F: (Partition2) 36.1GB NTFS	G: (Partition3) 36.5GB NTFS
ha Pa	nlicato	sourco dis	Selected pa	rtition
		e source dis		/2024 11:17:17 AM
0	MBR	Unallocated		Unallocated
	111.7GB		36.1GB NTFS	
		unthesized c	lisk method	36.5GB //2024 10:53:08 AM

Such images may have the following peculiarity: when an additional object is added to an existing image differentially or incrementally, the second image file will have a virtual unallocated space on the places of the

objects already existing in the image. That may sometimes results in the fact that the total free space in the image exceeds the overall disk space.

Extensions	Description	Licenses
dmg	Apple Disk Image	All
e01/(ewf)	Expert Witness File Format	Commercial
aff	Advanced Forensic Format	Commercial

Additional file formats that can be opened "read-only"

7.10 Disk Wiping Algorithms

Data wiping is necessary only for files stored on conventional hard drives. Data stored on SSD storage devices cannot be effectively <u>wiped</u> out due to the principles of operation of these devices.

Currently R-Drive Image supports 5 wiping algorithms:

Wipe an object panel

💽 Wipe an object		×
You have selected to wipe the followin	g disk:	
WDC WD3200BEVT-08A23	3T1 298GB	
All existing data on this disk will be Are you want to proceed?	overwritten and lost!	
Wiping algorithm		
C Zeroes (1 pass. Fast)		
Pseudo-random (1 pass. Fast)		
ODD 5220.22.M (3 passes. Slow	. Secure)	
ODD 5200.28.STD (7 passes. V	ery slow. Very secure)	
	slow Verv secure)	
Bruce Schneier (7 passes. Very)		

■Wiping algorithms

Zeroes	The disk is filled with zeroes through 1 pass. The fastest but the least secure	
	algorithm. Also it does not conceal the fact that the disk or file has been wiped.	
Pseudo-random	The disk is filled with pseudo-random numbers through 1 pass. A slower but little bit	
numbe rs	more secure algorithm than the Zeroes algorithm and it also conceals to some degree	
	the fact that the disk or file has been wiped.	
DoD 5220.22-	The disk is wiped using Department of Defense standard 5220.22-M(3). Provides	
M(3)	high-grade data wiping filling the unused space or file with a special digital pattern	
	through 3 passes This algorithm is very secure, but slow.	
DoD 5200.28-	The disk is wiped using Department of Defense standard 5200.28-STD(7). Provides	
STD(7)	high-grade data wiping filling the unused space or file with a special digital pattern	
	through 7 passes. This algorithm is very secure, but very slow.	
Bruce	The disk is wiped using the Bruce Schneier's algorithm. Provides high-grade data	
Schneier(7)	wiping filling the unused space or file with a special digital pattern through 7 passes.	
	This algorithm is very secure, but very slow.	
Peter Gutmann	The disk is wiped using the Peter Gutmann's algorithm. Provides high-grade data	
---------------	---	
(35)	wiping filling the unused space or file with a special digital pattern through 35 passes.	
	This algorithm is military-level secure, but horribly slow.	

What algorithm is to choose, depends on your specific needs. All of these wiping algorithms make recovery of wiped data with any software-based data recover utility impossible. So if you want to protect your information from a casual snooper, you may safely choose either the **Zeroes** or **Pseudo-random numbers** algorithm. The latter also conceals the fact that you wiped the data.

If you want more security, you need to know the following:

There are some techniques for recovery of wiped data. These techniques are based on the fact that magnetic medium on the hard drive's platters "store" some information about previously written data. Such information cannot be completely removed. Wiped data may be recovered even from mechanically damaged platters. So the only safe way to completely remove data from a hard drive is to mechanically grind the magnetic medium off the drive platters or dissolve them in special chemical solvents.

But in order to recover the wiped data using one of these techniques, a hard drive must be disassembled, its platters placed in a precise magnetic field measurement system, and the results of such measurement statistically processed. All that is very expensive and requires a very qualified and experienced personnel and a specially developed equipment. Only a very advanced organization such as a law enforcement or intelligence agency of a developed nation, or a special high-tech firm can afford this. Moreover, each successive wiping pass makes such data recovery much and much harder. So, the **DoD 5220.22-M(3)** clearing and sanitizing standard overwriting the data with a special pattern through 3 passes is a rather reliable and safe choice for this case.

If you need the ultimate security, use the **DoD 5220.22-M(7)** clearing and sanitizing standard, or even the **Peter Gutmann (35)** wiping algorithm. They render data almost unrecoverable, but they are extremely slow.

7.11 Supported CD and DVD Recorders

Supported CD recorders

All IDE/SCSI/USB/FireWire (IEEE1394) CD recorders compatible with the MMC specification.

Supported DVD recorders

Any DVD+R/RW or DVD-R/RW drives for which packet (UDF) record software is installed (DirectCD/InCD/DLA). DVD discs should be <u>formatted</u>.

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

7.12 List of Hardware Devices Supported in the Startup Mode

In the startup mode, **R-Drive Image** supports the following hardware devices:

Data Storage Devices

Networking Devices

Serial ATA and Parallel ATA drivers	3Com 3c574 PCMCIA
ACPI firmware driver for PATA	3Com 3c589 PCMCIA
ACard AHCI variant (ATP 8620)	3c501 `EtherLink`
AHCI SATA	3c503 `EtherLink II`
ALiPATA	3c505 `EtherLink Plus`
AMD/NVidia PATA	3c507 `EtherLink 16`
ARTOP 6210/6260 PATA	3c509/3c529 (MCA)/3c579 `EtherLink III`
ARTOP/Acard ATP867X PATA	3c515 ISA `Fast EtherLink`
ΑΤΙ ΡΑΤΑ	3c590/3c900 series (592/595/597)
CMD / Silicon Image 680 PATA	`Vortex/Boomerang`
CMD640 PCI PATA	3cr990 series 'Typhoon'
CMD64x PATA	AMD 8111 (new PCI LANCE)
CS5510/5520 PATA	AMD LANCE and PCnet (AT1500 and NE2100)
CS5530 PATA	AMD PCnet32 PCI
CS5535 PATA	AT1700/1720
CS5536 PATA	Adaptec Starfire/DuraLAN
Compaq Triflex PATA	Alteon AceNIC/3Com 3C985/NetGear GA620
Cypress CY82C693 PATA	Gigabit
EFAR SLC90E66	Ansel Communications EISA 3200
Generic ATA	Apricot Xen-II on board Ethernet
HPT 343/363 PATA	Asix AX88190 PCMCIA
HPT 366/368 PATA	Atheros L1C Gigabit Ethernet
HPT 370/370A/371/372/374/302 PATA	Atheros L1E Gigabit Ethernet
HPT 371N/372N/302N PATA	Atheros L2 Fast Ethernet
IT8211/2 PATA	Atheros/Attansic L1 Gigabit Ethernet
IT8213 PATA	Broadcom 440x/47xx ethernet
Initio 162x SATA	Broadcom CNIC
Intel ESB, ICH, PIIX3, PIIX4 PATA/SATA	Broadcom NetXtremeII
Intel PATA MPIIX	Broadcom NetXtremeII 10Gb
Intel PATA old PIIX	Broadcom Tigon3
Intel SCH PATA	Brocade 1010/1020 10Gb Ethernet Driver
JMicron PATA	CS89x0
Legacy ISA PATA	Cabletron E21xx
Marvell PATA support via legacy mode	Chelsio 10Gb Ethernet
Marvell SATA	Chelsio Communications T3 10Gb Ethernet
NETCELL Revolution RAID	Chelsio Communications T4 Ethernet
NVIDIA SATA	Chelsio Communications T4 Virtual Function Ethernet
Nat Semi NS87410 PATA	Cisco VIC Ethernet NIC Support
Nat Semi NS87415 PATA	DECchip Tulip (dc2114x) PCI
Ninja32/Delkin Cardbus ATA	DL2000/TC902x-based Gigabit Ethernet
	Dave ethernet support (DNET)

OPTI FireStar PATA OPTI621/6215 PATA Older Promise PATA controller PCMCIA PATA Pacific Digital ADMA Pacific Digital SATA QStor Platform AHCI SATA Promise PATA 2027x Promise SATA SX4 Promise SATA TX2/TX4 **QDI VLB PATA** RADISYS 82600 PATA **RDC PATA** SC1200 PATA SERVERWORKS OSB4/CSB5/CSB6/HT1000 PATA ServerWorks Frodo / Apple K2 SATA SiS 964/965/966/180 SATA SiS PATA Silicon Image 3124/3132 SATA Silicon Image SATA Toshiba Piccolo ULi Electronics SATA VIA PATA VIA SATA VITESSE VSC-7174 / INTEL 31244 SATA Winbond SL82C105 PATA Winbond W83759A VLB PATA SCSI low-level drivers 3ware 5/6/7/8xxx ATA-RAID

3ware 97xx SAS/SATA-RAID 3ware 9xxx SATA-RAID 7000FASST SCSI ACARD SCSI ARECA (ARC11xx/12xx/13xx/16xx) SATA/SAS RAID Host Adapter Adaptec AACRAID Adaptec AHA152X/2825 Adaptec AHA1542 Adaptec AIC79xx U320

Davicom DM910x/DM980x Early DECchip Tulip (dc2104x) PCI EtherExpress 16 EtherExpressPro support/EtherExpress 10 (i82595) Exar X3100 Series 10GbE PCIe Server Adapter Exar Xframe 10Gb Ethernet Adapter Fujitsu FMV-J18x PCMCIA Generic DECchip & DIGITAL EtherWORKS PCI/EISA HP 10/100VG PCLAN (ISA, EISA, PCI) HP PCLAN (27245 and other 27xxx series) HP PCLAN+ (27247B and 27252A) ICL EtherTeam 16i/32 IP1000 Gigabit Ethernet Intel(R) 10GbE PCI Express adapters Intel(R) 82575/82576 PCI-Express Gigabit Ethernet Intel(R) 82576 Virtual Function Ethernet Intel(R) PRO/100+ Intel(R) PRO/1000 Gigabit Ethernet Intel(R) PRO/1000 PCI-Express Gigabit Ethernet Intel(R) PRO/10GbE JMicron(R) PCI-Express Gigabit Ethernet LP486E on board Ethernet Marvell Yukon 2 Marvell Yukon Gigabit Ethernet Mellanox Technologies 10Gbit Ethernet Micrel KS8851 MLL Micrel KSZ8841/2 PCI Myricom Myri-10G Ethernet Myson MTD-8xx PCI Ethernet NE2000 compatible PCMCIA NE2000/NE1000 NI5210 NI6510 National Semiconductor DP8381x series PCI Ethernet National Semiconductor DP83820 NetXen Multi port (1/10) Gigabit Ethernet NIC New Media PCMCIA OKI SEMICONDUCTOR IOH(ML7223/ML7831) GbE

Adaptec AIC7xxx Adaptec AIC7xxx Fast -> U160 Adaptec AIC94xx SAS/SATA Adaptec I2O RAID AdvanSys SCSI Always IN2000 SCSI BusLogic SCSI DMX3191D SCSL DTC3180/3280 SCSI EATA ISA/EISA/PCI (DPT and generic EATA/DMA-compliant boards) Emulex LightPulse Fibre Channel Support Future Domain 16xx SCSI/AHA-2920A Generic NCR5380/53c400 SCSI MMIO Generic NCR5380/53c400 SCSI PIO HP Smart Array SCSI driver HighPoint RocketRAID 3xxx/4xxx Controller IBM Power Linux RAID adapter IBM ServeRAID Initio 9100U(W) Initio INI-A100U2W Intel(R) C600 Series Chipset SAS Controller Intel/ICP (former GDT SCSI Disk Array) RAID Controller LSI Logic Legacy MegaRAID Driver LSI Logic Management Module LSI Logic MegaRAID Driver LSI Logic MegaRAID SAS RAID Module LSI MPT Fusion SAS 2.0 Device Driver Marvell 88SE64XX/88SE94XX SAS/SATA Microsoft Hyper-V virtual storage driver NCR53c406a SCSI PAS16 SCSI PMC SIERRA Linux MaxRAID adapter PMC-Sierra SPC 8001 SAS/SATA Based Host Adapter driver Promise SuperTrak EX Series QLogic ISP4XXX and ISP82XX host adapter family QLogic QLA2XXX Fibre Channel Support Qlogic FAS SCSI

OpenCores 10/100 Mbps Ethernet MAC PCI NE2000 and clones support (see help) QLOGIC QLCNIC 1/10Gb Converged Ethernet NIC Support QLogic QLA3XXX Network Driver Support QLogic QLGE 10Gb Ethernet Driver Support RDC R6040 Fast Ethernet Adapter RealTek RTL-8129/8130/8139 PCI Fast Ethernet Adapter RealTek RTL-8139 C+ PCI Fast Ethernet Adapter Realtek 8169 gigabit ethernet Realtek PCIe GBE Family Ethernet Adapter SEE08005 SMC 9194 SMC 91Cxx PCMCIA SMC EtherPower II SMC Ultra SMSC LAN9420 PCI ethernet adapter STMicroelectronics 10/100/1000 Ethernet driver ServerEngines' 10Gbps NIC - BladeEngine SiS 900/7016 PCI Fast Ethernet Adapter SiS190/SiS191 gigabit ethernet Silan SC92031 PCI Fast Ethernet Adapter driver Solarflare SFC4000/SFC9000-family Sun Cassini Sun GEM Sun Happy Meal 10/100baseT Sun Neptune 10Gbit Ethernet Sundance Alta TI ThunderLAN Tehuti Networks 10G Ethernet ULi M526x controller VIA Rhine VIA Velocity WD80*3 Winbond W89c840 Ethernet Xircom 16-bit PCMCIA Zenith Z-Note nForce Ethernet

Qlogic QLA 1240/1x80/1x160 SCSI SYM53C8XX Version 2 SCSI Symbios 53c416 SCSI Tekram DC390(T) and Am53/79C974 SCSI Tekram DC395(U/UW/F) and DC315(U) SCSI Trantor T128/T128F/T228 SCSI UltraStor 14F/34F UltraStor SCSI VMware PVSCSI driver Workbit NinjaSCSI-32Bi/UDE iSCSI Boot Sysfs Interface

USB support

CF/PCMCIA support for SL811HS HCD ChipIdea Highspeed Dual Role Controller Cypress C67x00 HCD Datafab Compact Flash Reader Freecom USB/ATAPI Bridge ISD-200 USB/ATA Bridge **ISP 1760 HCD** ISP116X HCD ISP1362 HCD Lexar Jumpshot Compact Flash Reader OXU210HP HCD Olympus MAUSB-10/Fuji DPC-R1 R8A66597 HCD SL811HS HCD SSB usb host driver SanDisk SDDR-09 (and other SmartMedia, including DPCM) SanDisk SDDR-55 SmartMedia **USB 2.0 USB** Mass Storage **USB** Monitor USBAT/USBAT02-based storage xHCI HCD (USB 3.0)

Block devices

Compaq SMART2 Compaq Smart Array 5xxx Mylex DAC960/DAC1100 PCI RAID Controller Normal floppy disk

USB Network Adapters

ASIX AX88xxx Based USB 2.0 Ethernet Adapters CDC EEM CDC Ethernet support (smart devices such as cable modems) CDC NCM Conexant CX82310 USB ethernet port Davicom DM9601 based USB 1.1 10/100 ethernet devices GeneSys GL620USB-A based cables Host for RNDIS and ActiveSync devices Intellon PLC based usb adapter MosChip MCS7830 based Ethernet adapters NetChip 1080 based cables (Laplink, ...) **Option USB High Speed Mobile Devices** Prolific PL-2301/2302/25A1 based cables SMSC LAN75XX based USB 2.0 gigabit ethernet devices SMSC LAN95XX based USB 2.0 10/100 ethernet devices Samsung Kalmia based LTE USB modem Sharp Zaurus (stock ROMs) and compatible Simple USB Network Links (CDC Ethernet subset) USB CATC NetMate-based Ethernet device USB KLSI KL5USB101-based ethernet device USB Pegasus/Pegasus-II based ethernet device USB RTL8150 based ethernet device

Promise SATA SX8

IEEE 1394 (FireWire) support

Legacy alternative FireWire driver stack

Storage devices (SBP-2 protocol)

Other devices

Microsoft Hyper-V Utilities driver

Microsoft Hyper-V client drivers

Microsoft Hyper-V virtual block driver

Microsoft Hyper-V virtual network driver

Microsoft Hyper-V virtual storage driver

The **Disk Actions** chapter explains basic disk actions.

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup** Version.

The <u>Technical Information</u> chapter gives technical information on <u>Supported CD and DVD Recorders</u> and <u>List of Hardware Devices Supported in the Startup Mode</u> and another useful technical information. Follow this link to obtain R-Drive Image Contact Information and Technical Support

VIII R-Drive Image OEM kit

Available in the **Commercial** license.

R-Drive Image OEM kit allows system integrators, consultants, and computer assemblers to create special system recovery disks/devices and include them with their fully assembled computer systems. The license for **R-Drive Image OEM** kit allows its licensee to distribute unlimited number of those system recovery devices with its computers provided that a an unregistered copy of **R-Drive Image OEM** is pre-installed on each distributed computer and the **R-Drive Image** software icon is placed on the end-user desktop.

The end user of such computer systems can use those system recovery disks to restore the system files, registry keys, installed programs, etc., to a state the computer system or hardware was initially set up (a fresh setup).

R-Drive Image OEM kit is intended only to restore the original <u>system disk</u> configuration as part of a service or maintenance procedure. Use of this kit to install software on any other computer or system is strictly prohibited.

R-Drive Image OEM kit consists of three components:

R-Drive Image System Recovery Media Creator (R-Drive Image SRMC)

It can create a special **R-Drive Image System Recovery OEM** media device, that is, startup disk(s) that may be used to restore a computer system after a complete failure when it requires a complete fresh setup (system recovery disks). It may be a CD/DVD/USB disk, ZIP drive or any other removable media device.

R-Drive Image System Recovery OEM

Actually, **R-Drive Image System Recovery OEM** is a startup device containing a special **R-Drive Image** startup version with a master disk image. This **R-Drive Image** startup version restores data from a master image only to a hard drive or logical disk of a target system.

R-Drive Image OEM

This is a **R-Drive Image** license similar in its functionality to a conventional **R-Drive Image**. Note: with one exception: it does not work with cloud services, including copying the OEM message from a cloud service.

Note: You need to obtain an OEM license to activate the OEM functionality in **R-Drive Image**. You may obtain a free demo key on the <u>R-Drive Image site</u> to test that functionality. **OEM System Recovery Media** created in the demo mode will perform all the required operations but without actual data recovery. If you want to disable the OEM functionality after tests, simply enter that free demo key once again. The the OEM functionality will disappear.



When you enter the OEM registration key, this message disappears and the OEM recovery system can be created.

R-Drive Image SRMC Features:

- The master image can be placed on the startup disk(s) or on a separate device.
- Flexible data restoring: **R-Drive Image** may automatically find the disk to restore data to, or the user can manually select places for data recovery.
- Creating OEM System Recovery Media consists of two steps:
 - 1. Creating the master image of the system
 - 2. Creating the startup media

When the user will start the system up with such disk(s), **R-Drive Image** will either restore the system automatically, or ask the user to specify the source and target for system requirement, depending on the options specified during the disk creation.

The **Disk Actions** chapter explains disk actions such as:

- Create an Image of a partition, logical disk, or entire hard drive
- Create an Image from Files
- Copy Files to a Folder
- <u>Restore Data from an Image</u>
- Copy Disk to Disk to make an exact copy of one disk on another
- Manage partition and logical disks
- Mount an Image as a Virtual Logical Disk (read-only)
- Unmount Virtual Logical Disks
- Check an Image File to check an existing image file

The <u>Startup Version</u> chapter explains how to perform disk actions using the **R-Drive Image Startup Version** such as:

- <u>Create Startup Disk</u>
- Load Computer into Startup Mode
- <u>Restore Data From an Image</u>
- Create an Image
- Disk to Disk Copy
- <u>Create an Image from Files</u>
- Partition Manager
- Check an Image File
- Network Drives

The <u>Scheduled Actions, Command Line Operations, and Scripting</u> chapter explains how to start disk actions automatically at scheduled times/events and create scripts that can be performed from a command line.

- <u>Scheduler and Unattended Actions</u>
- <u>Scripting and Command Line Operations</u>
- Rotation schemes (backup sets)

The **<u>R-Drive Image Features</u>** topic tells more about **R-Drive Image**.

Follow this link to obtain **<u>R-Drive Image Contact Information and Technical Support</u></u>.**

8.1 Create a Master Image

A master image is the image of the hard drive/logical disk or partition which you will used to restore the system. The safest way to create a master image for a system rescue disk is to set the system up, turn it off, then start it up with the <u>R-Drive Image startup version</u> and <u>write the master image file</u> either to a network drive or to a USB disk. Please note that you have to connect the USB disk before you start up the system.

If you are going to create the master image in the same way as a <u>regular image</u>, it is necessary to understand how **OEM System Recovery Media** searches for the target drives/partitions to restore data to.

Hard drives: OEM System Recovery Media identifies drives by their identity info (vendor+model+revision). So, when creating the master image, avoid connecting the source drive to a non-standard drive controller. It may change the drive name and/or size, making it impossible for OEM System Recovery Media to identify the target drive correctly when restoring data.

Partitions: OEM System Recovery Media identifies partitions by their offset+size and, with lesser priority, by their file system information (file system type and label). if **OEM System Recovery Media** find one object which properties coincide with those in the master image, it believes that it has found the target partition. If there are several same partitions on different drives, **OEM System Recovery Media** selects the target partition by its HDD identity info.

Note: When creating the master image, specify the Image split size option on the **Image Options** panel according to the requirements of the target where you want to store the master image and do not pay attention to the size requirements of the media type you plan to use. When producing the startup disk, **R-Drive Image** will split the image accordingly.

Do not leave the master image on a cloud service, it will not be available to R-Drive Image OEM.

8.2 Create Startup Media

When the master image of the system is created, you may create the startup data recovery disk(s).

To create a startup data recovery disk(s):

- 1 Click Create OEM System Recovery Media on the Action Selection panel
- 2 Select the file with the master image on the Master image file panel and click the Next button

R-Drive Image - Create OEM	- D X
Maste	er image file ····
Main menu	
Last used images g-drive:// Igmail.com@/G-image.rdr D:\MAGES\RDI\F_H-image.rdr	Image details MBR [2] (\$ C: 238.4GB Prim 50MI 238.4GB [2] (\$ C: 50MI 237.9GB NT
 Image_Bad.rdr Partition1-1_Partition1-3-image.rdr Partition1-1_Partition1-3-image3.rdr Partition1-1_Partition1-3-image3.rdr Partition1-1_Partition1-3-image4.rdr R-DriveImage-7000.iso SoftRAIDD.rdr SoftRAID1.rdr SoftRAID1.rdr 	
SystemDisk.rdr	Dates of included archives
 DEFISystemPartitionGPT2-2-image.rdr Windows_10.rdr Recycle Bin 	7/28/2021 4:56:28 PM
📰 Map network drive 🖉 Connect to cloud	
File name: Y:\RDI-Images\SystemDisk.rdr	All supported images
- Back	➡ Next

When you click the file, you may view its content below.

3 Select the device you want to use to create the the system recovery disks on the Create OEM System Recovery Media panel and click the Next button

~		
Main menu	Create OEM System Recovery M	1edia ···
Name	Туре	Burn speed
ISO	ISO Image File	
Removable (E:)	14.9GB (RDI)	
 AllSR startup device should be a st	uld be already connected formatted as a EAT/EAT22 di	sk and has anough amount of free space
A USB startup device shou available	IId be already connected, formatted as a FAT/FAT32 di	sk and has enough amount of free space
A USB startup device shou available ISO file name	ild be already connected, formatted as a FAT/FAT32 di	sk and has enough amount of free space

If you have problems with starting the computers up from the **R-Drive Image** startup disks, select **configure startup media troubleshooting options**. Then the **Startup Media Troubleshooting Options** panel will appear. You may configure these options to eliminate those problems.

Those options will help you if you have problems with starting you computer up from the **R-Drive Image** startup disks.

Bootable media	You may select either a Linux-based or WindowsPE based startup version.
type	Tou may select entrer a Linux-based of windowsr E based startup version.
Display kernel startup messages	if this checkbox is enabled, R-Drive Image displays all startup messages. That may be useful to locate the source of the problem when your system hangs during R-Drive Image startup.
Trace drivers	
loading	Select this checkbox when you want to see loading drivers to find which one may lock the system.
Disables ACPI	Select these checkboxes when your system detects some hardware incorrectly
Disables APIC	during R-Drive Image startup and displays messages like: hda: lost interrupt
Disables USB	Select these checkbox if your system experiences problems with USB devices
devices support	during R-Drive Image startup.
Disables SCSI	Select these checkbox if your system experiences problems with SCSI devices
devices support	during R-Drive Image startup.
Disables PATA	Select these checkbox if your system experiences problems with Parallel ATA
devices support	devices during R-Drive Image startup.
Disables PCMCIA	Select these checkbox if your system experiences problems with PCMCIA
devices support	devices during R-Drive Image startup.
Disables DMA for	Select these checkbox if your system experiences problems with IDE disks during
all IDE disk drives	R-Drive Image startup.
IRQ polling mode	Select this checkbox if R-Drive Image does not recognize a device although it is
	in the supported device list.
Default clocksource	Select this checkbox to select computer default clocksource.
PCI BIOS	Select an appropriate option if your system experiences problems with computer hardware.
ACPI OSI	An option informing the computer BIOS which OS type is going to start. Default
	is Linux, but it may cause the computer BIOS to drop support for some computer
	hardware. Change this option if the startup version cannot recognize some
	computer hardware, or it malfunctions.
Disable specified	Enter the drivers that may cause system lock. Driver names should be separated
drivers	by a space or comma.

Startup Media Troubleshooting Options

4 Specify the options for the system recovery disks on the **OEM System Recovery Media Options** panel and click the Next button

ain menu	OEM Syst	tem Recovery Media Options		•
Master image file: Destination (Remo		s\SystemDisk.rdr		
Options				
Create media in demo mode		Don't copy the master image Client will search image on all disks		
Automatically reboot on succ	essful restore	Disable target (and source) disk selection		
GUI mode User select 🔻	nfirmation	Disable source disk selection		

OEM System Recovery Media Options

Media:	Select.the media type you would like to have. R-Drive Image will automatically split the data accordingly.		
Options			
If this check box is selected			
Create media in demo mode	R-Drive Image will create a demo recovery disk. During the recovery process, it will be possible to perform all the required operations without actual data recovery. The license count will not be decremented.		
Don't copy the master image	R-Drive Image will create the startup version only without copying the master image to the media. Select this option if you want to store the master image separately from the R-Drive Image startup version. The master image may be stored on a hidden partition of the hard drive. Do not store the master image on a cloud service, it will not be available.		
Client will search image on all disks	R-Drive Image will search for the master image on all disks (in their root only) in the system rather than on the startup disk only.		
Disable target (and source) disk selection	the user will not be able to specify the target object to which the data will be restored if R-Drive Image could not find the target for data recovery automatically. If this option is clear, the user could click the Back button on the Confirm Operation panel and manually select the target to which the data will be restored. When this option is selected, the Disable source disk selection option will also be selected.		
Disable source disk selection	the user will not be able to select the source disk/partition in the master image manually. If this option is clear, the user could click the Back button on the		

© 2025 R-Tools Technology Inc.

	Confirm Operation panel and manually select the source for data recovery in the image.
Raw disk copy/restore	R-Drive Image will enforce the Raw disk copy/restore as the first option during data restoring.
Automatically reboot on successful restore	R-Drive Image will open the disk tray for the data recovery CD disc, and restart the system automatically upon data recovery.
Perform restoration without confirmation	R-Drive Image will not require action confirmation from the user. If R-Drive Image finds the drive/disk corresponding to the master image, it will start data recovery automatically. If not, either an error message will appear, or the user will be asked about the target for data recovery, depending on the Disable target disk selection option.
GUI mode	R-Drive Image will start in the following GUI mode: GUI, GUI/Safe, GUI/SVGA, TUI

If you want to start data recovery automatically, select the two last check boxes.

- 5 Click the Start button on the **Processing** panel
- > R-Drive Image will start creating the startup data recovery disk(s)

Index

- - -

.rdi 133

- A -

Apple CoreStorage83Apple File Vault83Apple Fusion Drive Volumes83Apple RAIDs82

- B -

Backup Options After 169 **Backup AUX applications** 13, 25, 29, 169 Backup Process Priority 13, 25, 29, 169 Before 169 Ignore disk read errors (bad sectors) 13, 25, 29, 169 Limit I/O rate 13, 25, 29, 169 Limit read 13, 25, 29, 169 Limit write 13, 25, 29, 169 Notify system applications 13, 25, 29, 169 Process priority 13, 25, 29, 169 **R-TT Volume Snapshot Service** 13, 25, 29, 169 Snapshot AUX applications 13, 25, 29, 169 Snapshot provider 13, 25, 29, 169 Use CPU cores 13, 25, 29, 169 Windows Volume Snapshot Service 13, 25, 29, 169 Backup sets 123 **Bad Sectors** 13, 33, 47 Batch Mode 65 BitLocker BitLocker System Drive Encryption 72 BitLocker ToGo 72 Buttons 33 About 167 Delete a task 123 Edit a task 122 Edit an event 122

- C -

Check an image file 62 Cloud Services 154 Command line actions 133 configure startup media troubleshooting options 92 Contact information and technical support 5 Context menu 123 Delete a task 122 Edit a task 122 Edit an event 118, 123 Execute now Rename 122 Save as Script 134 Script to Clipboard 134 Copy a disk to a disk 47 Copy files to a folder 29 185 Create a Master Image Create a script 134 Create a script from an existing task 134 Create a script from R-Drive Image 134 Create a script manually 135 Create a task 118 Create an image 13 Create an Image from Files 25 Create Partition Parameters Allocation unit size 33, 47 Drive letter 33.47 File system 33, 47 Free space after 33, 47 Free space before 33.47 Partition layout 33.47 Partition size 33.47 33, 47 Partition type 33.47 Volume label Create startup disks 92 Creating consistent point-in-time bakups 169 Creating OEM Client Media 183 **Custom Rotation Schemes** 128 Custom rotation schemes options Always leave first full image 128 Apply quota 128 Maximum number of image files 128 Maximum size of all image files 128 On exceed 128 Rotation scheme 128

- D -

Delete a task 123 Dialog boxes About R-Drive Image 167 Disk actions 11 Disk Image Formats 173

- E ·

Edit a task 122 Edit time or event 122

- F -

File systems APFS 172 exFAT 172 Ext2/Ext3/Ext4 172 FAT (16/32) 172 HFS/HFS+ 172 NTFS 172 ReFS 172 UFS1/UFS2 (Little/Big Endian) 172 Format partition options Allocation unit size 33 File system 33 Volume label 33

- G -

Grandfather-Father-Son schemes options Always leave first full image 124 Apply quota 124 Keep Daily images 124 Keep Monthly images 124 Keep Weekly images 124 Maximum size of all image files 124

- H -

Hardware RAIDs 71 HDD Copy Method Copy all partitions onto original places 33, 47, 102, 110 Expand/Shrink partition to whole disk 33, 47, 102, 110 Fixed active partition 33, 47, 102, 110 Raw disk copy 33, 47, 102, 110 Realign partitions 33, 47, 102, 110 Hide/Show Disks 33

- | -

Image file format rdr 13 vmdk 13 Image Options Estimated size 13 Image compression ratio 13 Image description 13 Password protection 13 Shutdown after completion 13 Validate image when completed 13 Volume size for multi-volume image 13 Image Options options Backup paths 29 Compare file contents even for matching files 29 Copy attributes 29 29 File copy options

File copy options 29 Remove files in the destination that have no matching files in the source 29 Shutdown computer when completed 29 Image Replications 165 Imaging Options Differentially 13 Full 13 Incrementally 13

- K -

Keyboard navigation 11, 13

- L -

License Transfer 9 Linux Logical Volume Manager Volumes 89 Linux mdadm RAIDs 88 List of Hardware Devices Supported in the Startup Mode 177 Load Computer into Startup Mode 97 Logging 167

- M -

Mail Notification Options Authorization: 134 E-mail notifications 134 Error occurred 134 134 Login Password 134 Port 134 Recipient e-mail addresses 134 Run application if 134 Send mail if 134 Server 134 Success 134 Your e-mail address 134 Media Options **CD** Media Options 13 Direct 13 **DVD Media Options** 13 Include R-Drive Image bootable version 13 Use ISO caching 13 Write method 13 Write speed 13 Message Please register R-Drive Image 6 Messages Cannot lock the disk 102 13, 92 CD-R/RW disk is not empty... Choose drive(s) to umount them 60 Device is busy 13.92 Disk is full... 13 Disk not locked 33. 102 Error: Another partitioner is active 13, 33, 47 File is not found 33 Files restored successfully 33 Image corrupted 62 Image created successfully 13 Image is already selected! 33 Image restored successfully 33 Image selected is larger than destination 33, 47 Insert a blank CD-R/RW disk... 13.92 Insert a blank floppy disk... 92 Insert disk #... 33 Insert the next blank CD-R/RW disk ... 13 Insert the next blank floppy disk... 92 ISO-image created successfully 92

Not enough space 13 Object checked successfully 62 47 Object copied successfully Operation canceled by user 13 Password prompt... 13, 33, 58, 62 Progress... 13. 33. 47 Startup disks created successfully 92 Virtual disk(s) mounted successfully 58 You are about to restart... 33, 102 You have selected several partitions... 33 Mount Drive letter for the selected partition 58 Mount an image as a virtual logical disk 58

- N -

Notifications options Autorization 13, 25, 29 Email notification settings 13, 25, 29 Execute on 13, 25, 29 Send mail when 13, 25, 29 Test mail account 13, 25, 29

- 0 -

OEM Client Media Options 186 Automatically reboot on successful restore Client will search image on all disks 186 Create media in test mode 186 Disable source disk selection 186 186 Disable target disk selection Don't copy the master image 186 GUI mode 186 186 Media: Perform restoration without confirmation 186 Raw disk copy/restore 186

- P ·

Panels Action Selection 11 Backup Options 13, 25, 29, 118, 122, 169 Choose destination of new image 13, 25, 122 Choose files for new image 25 Choose image file 33 Choose image to check integrity 62 Choose image to mount 58 Panels

Choose image to mount drive(s) from 58 Copy partition 33 Create partition 33 Disk Signature Collision 47 Files Selected 25 Image Destination 118. 134 Image Object Selection 33 13, 118, 122 Image options Imaging Mode 134 Mail Notification/Aux Applications 134 Master Image File Selection 186 Modify partition 33 Mounted Virtual Logical Disks 60 Notification options 118, 122 Notifications Options 13. 25. 29 **Object Selection** 47 **OEM Client Media Options** 186 Partition Selection 118, 122, 134 60, 134 Processing Removable Media Device Selection 186 Removable Storage Device Selection 92 Restore data from an image 33 **Restore/Copy Parameters** 47 Rotation options 118. 122 Scheduled Tasks 123, 134 Select disk(s) to create image 13, 25 Select Files to Restore 33 Task execution schedule 118. 122 Partition lavouts Apple Partition Map 172 **BSD Slice** 172 Dynamic disk 172 GPT 172 Partition Manager clear 53 53 create 53 delete Entire hard drive 53 Existing partition 53 format 53 53 modify Unallocated space 53 wipe 53 Point-in-time bakups 169 Program language 11

- R -

RAIDs, and Various Disk and Volume Managers 69 rdf 65 R-Drive image features 2 R-Drive Image OEM kit 183 R-Drive Image Registration 6 r-driveimagecl.exe 118. 133 Registration 6 6 Registration information Registration key 6 Rename a task 122 **Restore Options** Copy disk signature 33 Drive letter for the selected partition 33.47 File system for the selected partitions 33, 47 33.47 Free space after Free space before 33, 47, 102, 110 Maximum partition size 33, 47 Minimum partition size 33.47 Partition size 33, 47, 102, 110 Partition type 33, 47, 102, 110 **Rotation Schemes** 123 Run a Task Manually 123

- S -

Safely Remove Hardware icon 107 Scheduled actions, command line operations, and scripting 116 Scheduler and unattended actions 118 Script 133 Script commands 133 Script commands and parameters 135 Scripting and command line operations 133 Secure boot 97 Select image file 33, 58, 62 Simple rotation scheme options Full image every 124 124 Imaging mode Maximum age of full images 124 Maximum number of full images 124 Maximum number of image files 124 Maximum size of all image files 124 Rotation scheme 124 Simple Rotation Schemes 124

Startup Version 91 Check an Image File 114 Create an Image 107 Create an Image from Files 114 Create an image using the startup disks 107 Disk to disk copy 110 Network Drives 115 Partition Manager 114 Restore Data from an Image 102 Restore data to a system or another locked disk 102 Support for Various non-MBR/GPT Partition Layouts 172 Supported CD and DVD recorders 177 System dump 5 System recovery disc 13

- T -

Task execution schedule options At system startup 118 At user logon 118 118 Daily Delay task up to: 118 End date: 118 Manuallv 118 Month schedule 118 Monthly 118 Months 118 On day... of month 118 On days: 118 Once 118 Or... 118 Perform this task: 118 Repeat task every 118 Repeat task every: 118 Run missed task as soon as possible 118 Run this task every: 118 Start date: 118 Start time: 118 118 Task is active User/Password Options 118 Wake the computer to run this task 118 Weekly 118 Technical Information 152 Tower-of-Hanoi schemes options Number of tiers 124

- U -

UEFI boot 97 Unknown 172 Unmount virtual logical disks 60 Updates 153

- V -

Virtual Disk Formats 173

- W -

Windiows explorer shortcut menu Mount as Virtual Disk 58 Restore Image 33 Windows Ransomware protection 11 Windows Security 11 Windows Software Mirrors 75 Windows Software RAIDs 75 Windows Software Spanned Volumes 75 Windows Storage Spaces fixed-provisional 80 80 thin-provisioned Wiping algorithms Bruce Schneier(7) 176 DoD 5200.28-STD(7) 176 DoD 5220.22-M(3) 176 Peter Gutmann (35) 176 Pseudo-random numbers 176 Zeroes 176