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Introduction

Linux File Systems for Windows by Paragon Software provides full read/write access to Linux-native Ext2 / Ext3 / Ext4 volumes and read-only access to the next generation BTRFS (B-Tree File System) and XFS (Extents File System) volumes under Microsoft Windows. With our driver onboard, you can plug in Linux-formatted storages to your PC and read, copy, or modify (only for ExtFS) their contents.

Linux File Systems for Windows doesn’t work in the kernel mode, but uses the Dokan library, which is similar to FUSE (Linux user mode file system), but for Windows OS. In short, Dokan enables to easily create a fully functional file system driver in a userspace program. For more information, please visit: [http://dokan-dev.github.io/](http://dokan-dev.github.io/).

In this manual you will find the answers to many of the technical questions, which might arise while using our driver.

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Our company is constantly releasing new versions and updates to its software, that’s why images shown in this manual may be different from what you see on your screen.

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Features Overview

This chapter dwells upon key benefits and technical highlights of the product.

Key Features

- Gets ready to work in a couple of minutes
- Provides fast and transparent read/write access to Linux Ext2 / Ext3 / Ext4 under Windows
- Provides read-only access to the next generation Linux BTRFS and XFS under Windows
- Supports the latest Windows 10 and Server 2016
- Runs at startup and auto-mounts all found Linux partitions
- Supports Linux LVM (Logical Volume Manager) disks
- Fully compatible with Secure Boot
- Managed through Windows system tray
- Managed from Windows CMD
- **Improved product activation** that includes online and offline options
- **Advanced support system** to help you submit correct support requests with operation logs and all necessary information with minimal time and effort.
- Includes an automatic product updater
- Includes a multi-language installation package
- Safe eject ready

Key Use Cases

- **Import/Export data from/to Linux volumes.** Let’s assume that a hard drive has been taken out from NAS storage based on Linux and you need to copy files to or from this disk under Windows OS. Just install our driver, connect this disk via eSATA connector or USB-to-SATA adapter to your PC and here you go – all files on Linux-native volumes are available to work with under Windows. Please note that data export scenarios are only available for ExtFS volumes.
• **Open documents and multimedia directly from Linux volumes.** If you want to watch movies or open large documents contained on a Linux-native volume from your PC, simply install our driver, connect this disk directly to your PC and enjoy the show.

**Supported Media**

- Ultra high capacity disks (up to 10 TB tested)
- IDE, SCSI and SATA/eSATA disks
- SSD (Solid State Drive)
- Thunderbolt, FireWire (i.e. IEEE1394), USB 1.0, USB 2.0, USB 3.0, USB-C disks
- PC card storage devices (all types of flash memory, etc.)
Getting Started
In this chapter you will find all the information necessary to get the product ready to use.

System Requirements
To use Linux File Systems for Windows, you should install it first. But before that, make sure your computer meets the following minimum system requirements:

- Windows 7
- Windows 8
- Windows 8.1
- Windows 10
- Windows Server 2008 R2 SP1
- Windows Server 2012 R1/R2
- Windows Server 2016

Installing the Driver
1. Click on the supplied setup file to initiate the installation.
2. Click Continue on the Welcome page.
3. Please Read Paragon’s License Agreement carefully and then select the appropriate option to accept. Otherwise you won’t be able to proceed with the installation.

4. Next you are to specify installation parameters.

- By default, the product will be available for all users of this computer. If you’d like it to be available for the current user account only, please choose the corresponding option.
- If necessary, manually edit the installation path or click Change... to browse for the required location.
• By default, the installation folder will be added to the PATH environment variable to let you manage the driver from the command line without typing the whole path to its executable file. Unmark the checkbox if you don’t need it.

5. Your system will be checked for the presence of Visual Studio C++ 2015 (x86) Runtime Library and if not found, you will be prompted to install it (comes with the installation package).

6. Click Install to roll out the installation.

7. Linux File Systems for Windows needs activation before use.

• **Start 10-day Trial.** You can try Linux File Systems for Windows with no limitations completely for free during 10 days. After that the data transferring speed will be decreased until activating a valid serial number.

• **Activate Linux File Systems for Windows.** If you have already purchased the product, use this option to go through activation of the obtained serial number on your computer. For more details, please consult the Activating the Driver chapter.

To purchase Linux File Systems for Windows online, click ‘Buy Now’ to open a direct link to Paragon’s e-shop.
Activating the Driver
You can unlock the product for unlimited use during the installation or at any moment later in Application Window. The recommended procedure requires an active Internet connection. However, if you don’t have the Internet on the target computer, you can try an offline option.

1. First you should purchase the product. The easiest way is to use a direct link to Paragon’s e-shop:
   - Double click the product icon on the Windows desktop.
   - Click on Buy…

![Paragon Linux File Systems for Windows](image)

2. By this moment you should have your own serial number. Click on Activate…

Online Activation
There are two ways of activating the product over the Internet: with login to MyParagon Customer Portal or Facebook and without it. We highly recommend you to use the first option to let us offer you personal discounts in the future. Besides, you will be able to issue support tickets directly from the product.

Activating with login
3. In the opened dialog enter an email and password of your Paragon’s account, then click Sign in. If you don’t have an account yet, please create it by clicking the corresponding option.
Alternatively, you can sign in with your Facebook account.

4. If you have purchased the product online as described in the first step, then the product activation will be completed automatically after signing in to your account. If having to do with a box version, you will need to enter your serial number. This info will be sent to our activation server to complete the procedure.

5. If a success, you’ll get a corresponding notification.

**Activating without login**

3. In the opened dialog click **Activate Using Serial Number...**
4. Enter your serial number, then click **Activate**. This info will be sent to our activation server to complete the procedure.

5. If a success, you’ll get a corresponding notification.

**Offline Activation**

1. If having problems with the Internet or specifically configured Firewall at login to your Paragon’s (Facebook) account on the target computer, the wizard will offer you to try an offline option. Before you proceed, write down your GUID and the provided link somewhere.

2. Use the saved link on any computer with the Internet to visit the company’s website to sign in to your Paragon’s (Facebook) account.
3. Enter your serial number and GUID in the corresponding fields, then click Export license file.

4. If the provided data is valid, you should get the “LicenseSet.xml” file. Copy it to the target computer, then use the Import License File... option for the import.
5. If a success, you’ll get a corresponding notification.
Using the Driver
First Start
After the product has been installed and activated, Windows will automatically mount (assign drive letters to) all found
ExtFS, BTRFS, and XFS volumes, which you can see in Windows Explorer or any other similar application.

Application Window
After the installation an icon of Linux File Systems for Windows appears on the Windows desktop. Double click it to open
the management interface.

Account and Support
This is where you can sign in to MyParagon Account and submit support requests. For more details, please consult the
Submitting a Support Request chapter.

Volumes List
It displays all ExtFS, BTRFS, and XFS volumes available in the system. Detailed information on the currently selected item is displayed on the right.

**Operations Area**

It contains operations you’re allowed to do with the currently selected volume.

- **Mount/Unmount.** By default, all found ExtFS volumes are automatically mounted in read/write mode, while BTRFS and XFS volumes read-only. Please note that this behavior can be changed in the settings dialog.

  ![Mount/Unmount Dialog](image)

  But if you’d like a certain volume to be mounted with specific parameters, use this option for remount:

  1. Unmount the volume, then click Mount.
  2. Choose whether to mount the volume in read/write mode (only for ExtFS) or read-only if its contents are not preferable to modify.
  3. Select a vacant drive letter from the popup list.
  4. Click Mount when ready.

- **Verify.** You can check integrity and fix found file system errors on any ExtFS volume. By default, the examined volume will be checked and repaired automatically even if having a clean file system state. Use the dialog options to change this behavior as desired. Please note that the examined volume should be unmounted.

  ![Verify Dialog](image)

  This functionality is available for ExtFS volumes only.
• **Format.** You can reformat an existing ExtFS volume to Ext2, Ext3, or Ext4. Please note that if the volume contains data, it will be deleted during the process, thus make a backup of that data or copy it to another volume if it’s important to you.

1. Unmount the volume before you start.
2. Select the required file system type from the popup list:
   - *Ext2* doesn’t have the journaling feature, which slows down the performance, thus it’s recommended for flash sticks and USB drives.
   - *Ext3* – a journaled file system that has a dedicated area, where all changes are tracked. The journaling feature allows minimizing chances of file system corruption.
   - *Ext4* – the primary file system for Linux OS. It supports huge individual file size (up to 16TB) and overall file system size (up to 1EB). Compared to Ext3, this file system has better performance and reliability. It can either be journaled or not.
3. Enter a label to easily identify the volume later (optional parameter).
4. Click **Format** when ready.

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This functionality is available for ExtFS volumes only.

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• **Browse.** Use the folder icon to open the volume in Windows Explorer.

**Settings and Maintenance**
This is where you can open the driver settings and also do some maintenance tasks.
Mount options. By default, all found ExtFS volumes are automatically mounted in read/write mode, while BTRFS and XFS volumes read-only. Use the corresponding options to change this behavior as desired. If you’d like a certain volume to be mounted with specific parameters, you’d better use the mount dialog.

Updates. By default, Linux File Systems for Windows automatically checks company’s website for available updates once a day. You can change this period to once a week or month or even disable this feature by unmarking the corresponding checkbox. If a new version of the driver has been found, you will be prompted to install it.

Share usage statistics. Disable this option if you don’t want to it.

Logging. By default, the generated log will contain information on all volume mount actions and disk layouts obtained from FDISK and also encountered errors. Enable this option to include additional details to help our engineers solve your problem with minimal time.

Show log
Use this option to show the generated log file in Windows Explorer.
Please note that the log file has the UNIX style line break, so please use a text editor that renders it correctly (Notepad doesn’t).

```
Linux File Systems for Windows 4.5.0.28
(1514595890) [0x980] Logger is initialized
(1514595890) [0x968] *DiskManager::createTree()
(1514595890) [0x966] *UseCreatePoint
(1514595890) [0x966] PDISK: PDisk version 3.2 + Base + LVM + ESC + QVF + AOT + DTM (Mar 20 2017, 14:35:27)
(1514595890) [0x966] PDISK: ------------------------------------------ physicalDrive 0 ,
60.00 gb
(1514595890) [0x966] PDISK: Media type: Unknown
(1514595890) [0x966] PDISK: Cylinders: 7891,
(1514595890) [0x966] PDISK: TrackPerCylinder: 256,
(1514595890) [0x966] PDISK: SectorsPerTrack: 63, Cm3f
(1514595890) [0x966] PDISK: BytesPerSector: 512,
(1514595890) [0x966] PDISK: Total sectors: 135892920,
(1514595890) [0x966] PDISK: C-M-D: 135814528,
(1514595890) [0x966] PDISK: Delta: 14592,
(1514595890) [0x966] PDISK: 7.12 MB
(1514595890) [0x966] PDISK: ------------------------------------------------
```

**Restart the service**

If the driver fails to find and mount Linux volumes (e.g. those created with Paragon Hard Disk Manager), first try this option.
Check for updates
Use this option to check company’s website for available updates at any moment.

Create volume dump file
You might need to provide a dump of a Linux volume you’re having troubles with by request of our engineers. Once the dump is created, use the corresponding option to show it in Windows Explorer.

Activation Area
It displays the current status of Linux File Systems for Windows (activated or trial). If it’s trial, then two buttons become available to select to let you quickly buy and activate the driver.

System Tray Icon
After the installation an icon of Linux File Systems for Windows also appears in Windows system tray. Left click the icon to quickly get information on found Linux volumes, browse their contents in Windows Explorer, and accomplish mount/unmount operations. Right click the icon to open the main management interface or remove it from the system tray.
Submitting a Support Request

In case of having difficulties with handling the product you can address our support engineers for assistance. To help you solve your problem with minimal time, our engineers need operation logs, your brief description, and in some cases a volume dump. To correctly submit a support request, please use our handy dialog.

1. **Launch the management interface of Linux File Systems for Windows.**

2. Click on the administrator icon. In the opened dialog enter an email and password of your Paragon’s account, then click **Sign in**. Alternatively, you can sign in with your Facebook account.

3. Click on the headphones icon. Fill out the ticket request form and attach the operation logs and a volume dump (optional), then click **Send**. That’s all. Our support engineers will get in touch with you in a little while.
For more details, please consult the following chapters:

- **Settings**
- **Create volume dump file**
Appendix
Creating a MyParagon Account

1. Run an Internet browser and visit the page: http://my.paragon-software.com/. It is recommended to use Safari, Internet Explorer 10+ or any compatible browser.

2. Click the **Create an account** hyperlink.

3. Fill out the registration form. The most important field in the form is an e-mail address, as it serves as a login to enter the system. Besides, an activation link will be sent to this address as well.

4. Click **Sign up**. If the provided e-mail address was used to register products in the old Paragon MyAccount system, all data from that account will be migrated to the newly created account.
5. Once your account is created, you will be prompted to check your inbox for an email with an activation link.

6. By following the link from the email you can set a password to your account.

7. That is all.

Registering a New Product in MyParagon Account

1. Run an Internet browser and visit the page: http://my.paragon-software.com/

2. Enter an email and password of your Paragon’s account, then click Sign in. If the user name and password are valid, you will get to your account.
3. Select **Register new product** in the left pane. Enter your product serial number. You can find it in the product box or obtain from your reseller. Click **Register** when ready.

4. That is all. The product is now registered, which you can see in the **My products** section. Once the product is downloaded and installed, you can unlock it for unlimited use as described in the **Activating the Driver** chapter.