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# Paragon ExtFS for Mac

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*User Manual*

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## Introduction

Paragon ExtFS for Mac is a low-level file system driver specially developed to bridge incompatibility of Linux and Mac OS X by providing full read/write access to the Ext2, Ext3 and Ext4 file systems under Mac OS X.

Based on the Paragon UFSD™ (Universal File System Driver) technology our driver enables to provide fast and transparent access to ExtFS partitions as Mac OS X-native, thus achieving an unprecedented high level of performance (the same as for HFS Plus and in some cases even better). Mac OS X programs can process such partitions without any restrictions – browse contents, read and modify files, copy and create new files and folders, etc.

Paragon ExtFS for Mac comes as a standard DMG disk image with an installation package to automatically install/uninstall and configure the ExtFS driver.

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

*Note: 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

- **Extremely easy to use** as it requires no additional configuration after installation
- **Fast and transparent access to any [ExtFS](#) (Ext2, Ext3 or Ext4) partition under Mac OS X**
- **Advanced driver engine** to guarantee reliable operation and stability even under heavy workload
- **Unprecedented high level of performance** thanks to the [Paragon UFSD™ technology](#)
- [Advanced support system](#) to help you submit correct support requests with operation logs and all necessary information with minimal time and effort.
- **Complete support of Mac OS X 10.10 Yosemite, [10.11 El Capitan](#), 10.12 Sierra, 10.13 High Sierra**
- **Advanced support of the [HFS Plus file system](#) features** to guarantee data consistency (POSIX file attributes, [Hardlinks](#), [Symlinks](#), [Data Fork](#) and [Resource Fork](#), etc.)
- **Advanced support of the ExtFS file system features** to guarantee data consistency ([Hardlinks](#), [Symlinks](#))
- [Improved product activation](#) that includes online and offline options
- [Flexible notification system](#)
- **Support of Mac OS X extended attributes**
- **Support of non-Roman characters**

### 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 Paragon ExtFS for Mac, you should install it first. But before that, make sure your computer meets the following minimum system requirements:

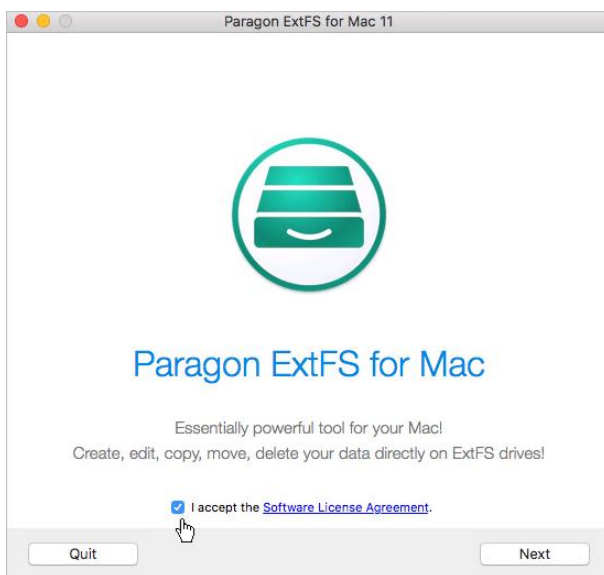
- Operating systems: Mac OS X 10.10 Yosemite, [10.11 El Capitan](#), 10.12 Sierra, 10.13 High Sierra

## Installing the Driver

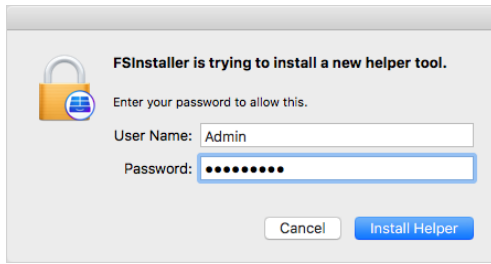
- Click on the supplied DMG disk image.
- After the installation package has been extracted you can choose whether to install/de-install the driver or read the product manual. Click **Install Paragon ExtFS for Mac** to initiate installation of the driver.



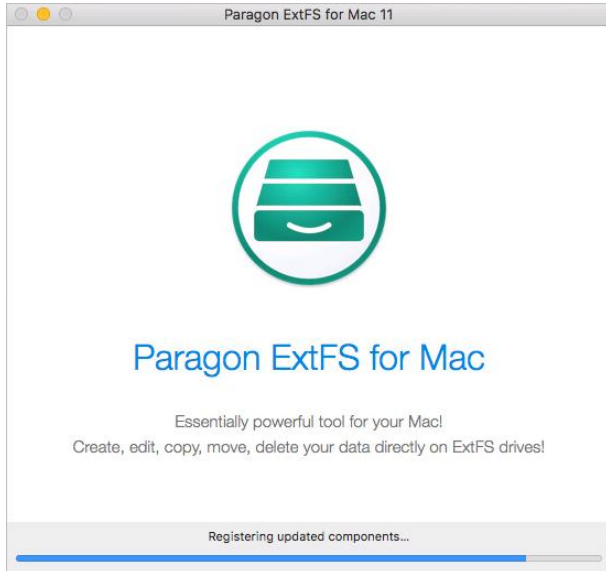
- Confirm opening the installation package if it was downloaded from the Internet.
- In order to continue the installation you are to accept Paragon's license agreement by marking the corresponding checkbox. But before that we highly recommend you to read the agreement thoroughly by following the hyperlink. Click **Next** when ready.



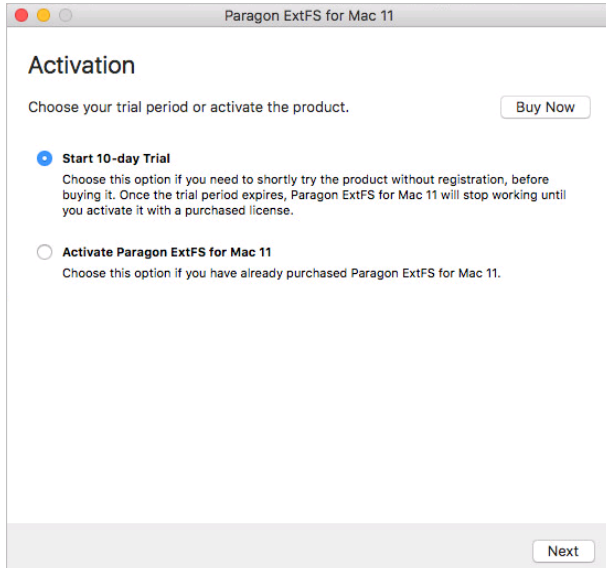
- Next you are to provide a password of a user with the administrator privilege.



6. Monitor the installation progress.



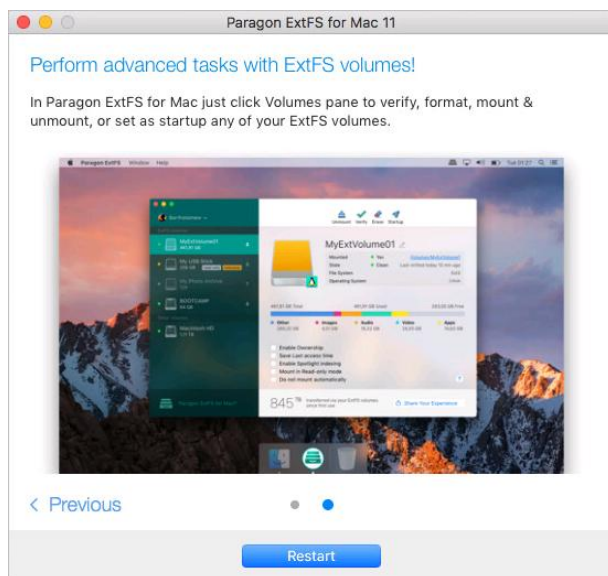
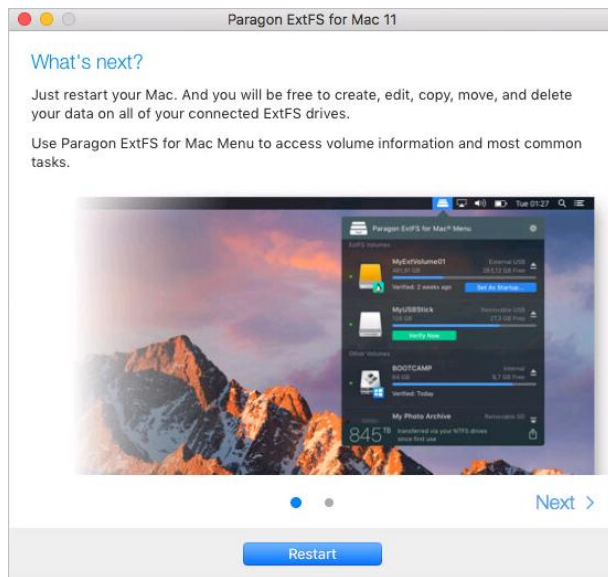
7. ExtFS for Mac needs activation before use.



- **Start 10-day Trial.** You can try ExtFS for Mac with no limitations completely for free during 10 days. If you agree to share the product information with your Facebook friends, this period can be extended later to five more days in [Application Window](#). After that you won't be able to use the product until activating a valid serial number.
- **Activate Paragon ExtFS for Mac.** 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.

**Note:** To purchase ExtFS for Mac online, click 'Buy Now' to open a direct link to Paragon's e-shop.

8. Finally the installation wizard will display a couple of screenshots that help to get started with the product. When ready, click **Restart** to complete the installation.

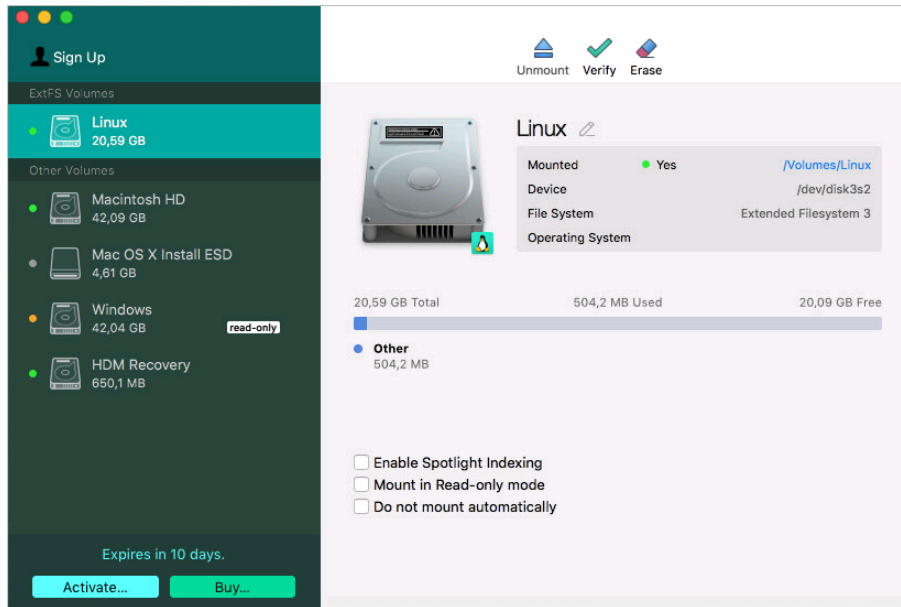


## Activating the Driver

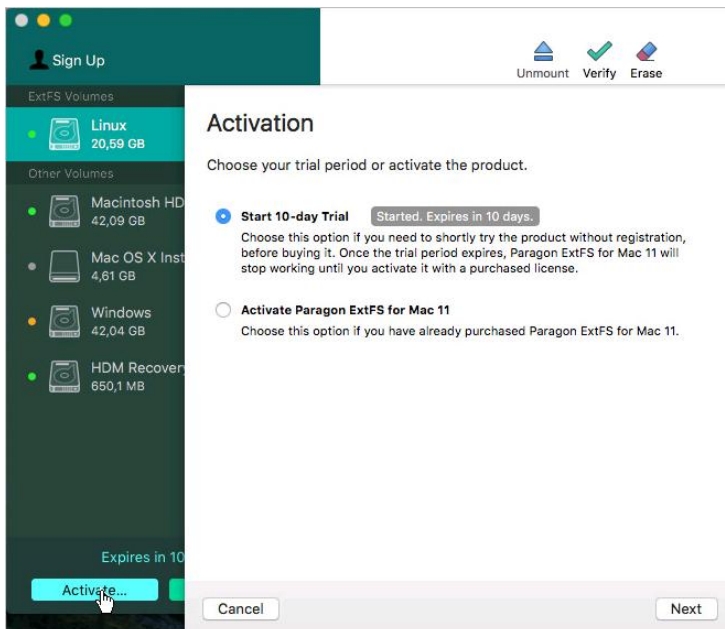
You can unlock the product for unlimited use during the installation or at any moment later in [Application Window](#). The recommended procedure requires an active Internet connection. However, if you don't have the Internet on the target computer, you can try [an offline option](#).

1. First you should purchase the product. The easiest way is to use a direct link to Paragon's e-shop:
  - Launch the management interface of Paragon ExtFS for Mac: **Applications > Paragon ExtFS for Mac**;
  - Click on **Buy...**





2. By this moment you should have your own serial number. Click on **Activate...** > **Activate Paragon ExtFS for Mac**.

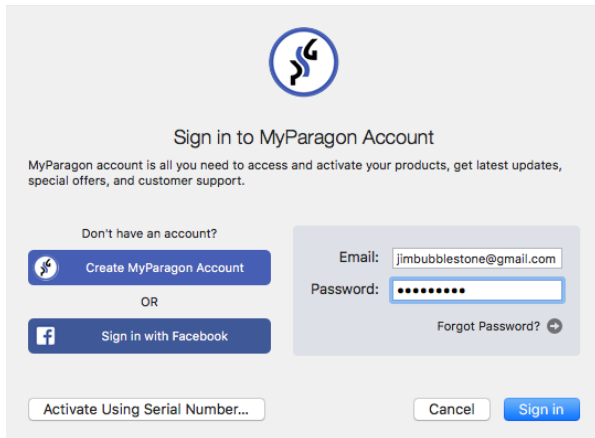


### Online Activation

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

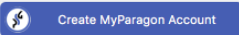
3. In the opened dialog enter an email and password of your Paragon's account, then click **Sign in**. If you don't have an account yet, please [create it](#) by clicking the corresponding option.



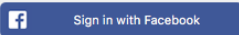
**Sign in to MyParagon Account**

MyParagon account is all you need to access and activate your products, get latest updates, special offers, and customer support.

Don't have an account?

 Create MyParagon Account

OR

 Sign in with Facebook

Email:

Password:

[Forgot Password?](#)

[Activate Using Serial Number...](#) [Cancel](#) [Sign in](#)

Alternatively, you can sign in with your Facebook account.



**Facebook**

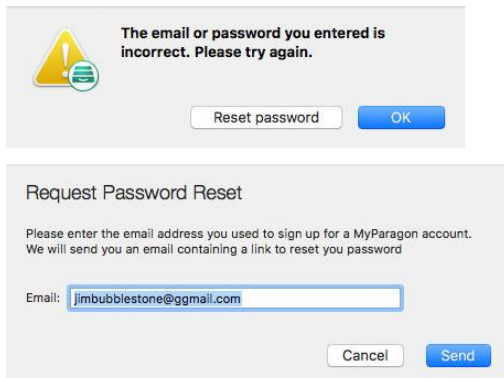
"Paragon ExtFS for Mac 11" would like to access your basic profile info and list of friends on your behalf. In addition, it would like to access your basic profile info and list of friends.

[Don't Allow](#) [OK](#)

[Sign in with Facebook](#) [Forgot Password?](#)

[Activate Using Serial Number...](#) [Cancel](#) [Sign in](#)

If the provided credentials are invalid, you will be prompted to reset your password.



**The email or password you entered is incorrect. Please try again.**

[Reset password](#) [OK](#)

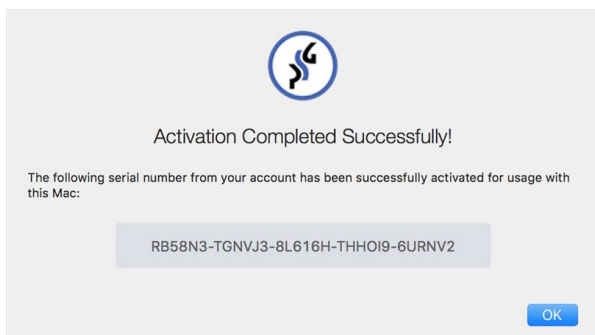
**Request Password Reset**

Please enter the email address you used to sign up for a MyParagon account. We will send you an email containing a link to reset your password.

Email:

[Cancel](#) [Send](#)

- 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.



**Activation Completed Successfully!**

The following serial number from your account has been successfully activated for usage with this Mac:

**RB58N3-TGNVJ3-8L616H-THHOI9-6URNV2**

[OK](#)

### 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.

## MyParagon Customer Portal

You can use your personal customer account to submit a support request to the technical support and track the status of your requests, manage your software licenses, download your software or the latest update, or obtain an upgrade at a discount.

### Sign in

[or create an account](#)





[Forgot password?](#)

Sign in

---

OR SIGN IN WITH

 Facebook

 Google

3. Enter your serial number and GUID in the corresponding fields, then click **Export license file**.

## Offline activation

If you've arrived on this page, chances are you're having a problem activating your copy of a Paragon Software product online.

To resolve this issue, we offer an offline activation procedure, which takes just three simple steps:

1. Create a special license file, which binds the serial number of your product together with a unique identifier for your system (GUID). You can locate the GUID of your computer in the software's offline activation dialog.
2. Export the license file to your computer.
3. Import the license file from your system to the Paragon product installed on the device with the license-bound GUID.

For steps 1 and 2, please enter your serial number and device GUID in the form below to generate the license file. Next, click «Export license file».



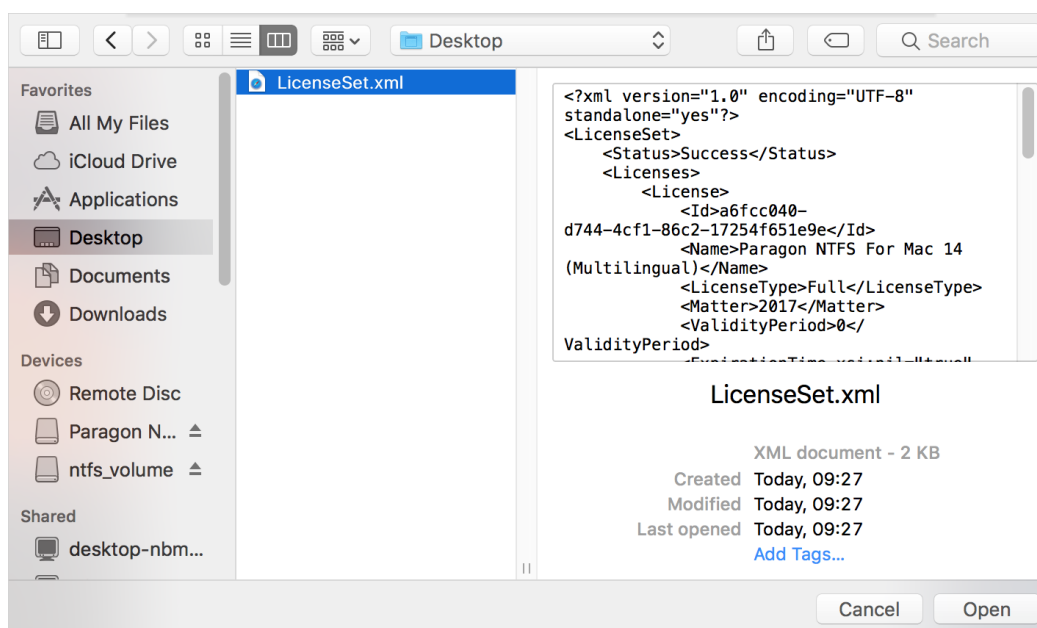
Export license file

OR

Send by email

When finished, you'll need to switch back to the Paragon Software product and import the created 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.

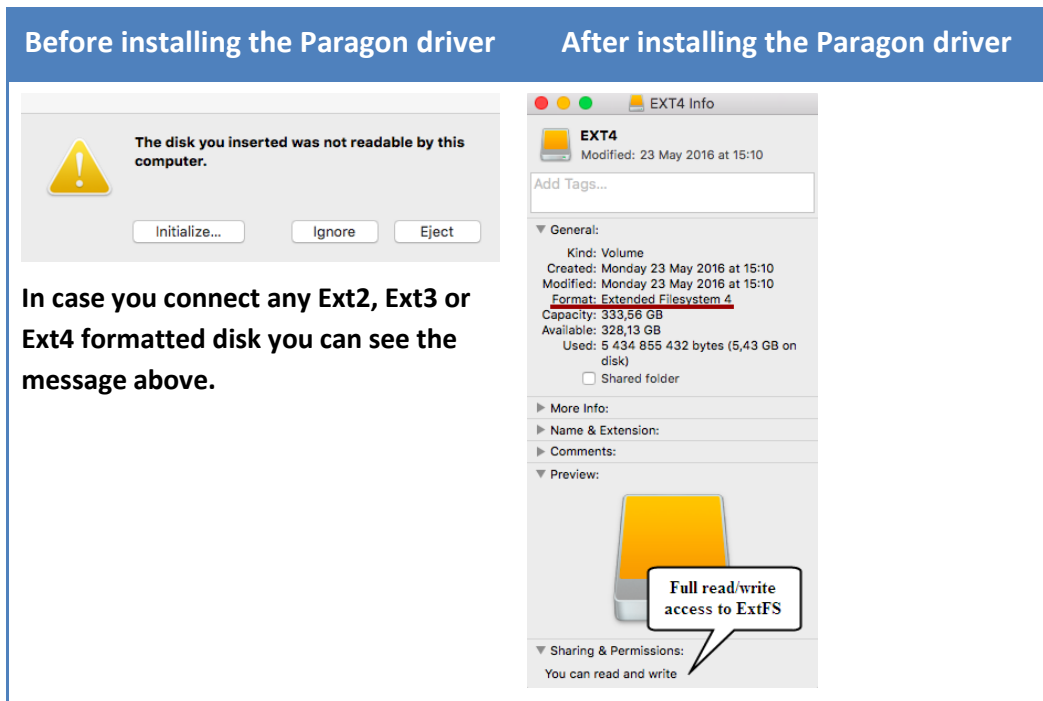


5. If a success, you'll get a corresponding notification.

## Using the Driver

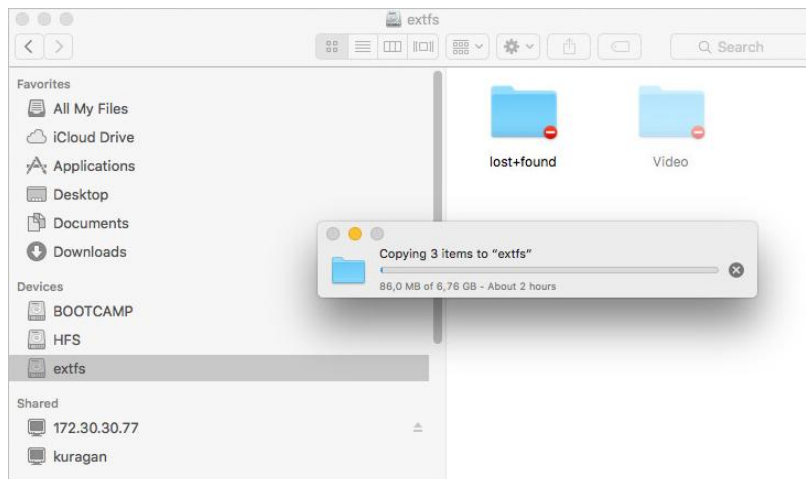
### First Start

Once the driver has been installed and activated you obtain full read/write access to any type of ExtFS as if it's Mac OS X-native.

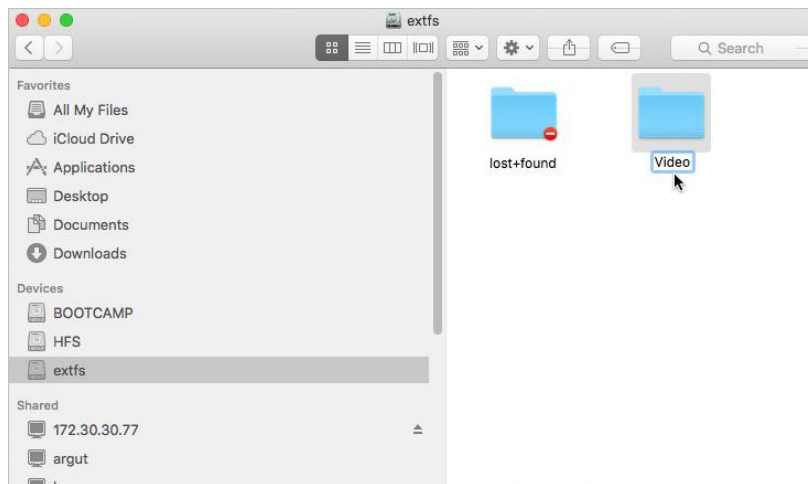


Unlike Mac OS X default driver you can now carry out any operation on an ExtFS volume, like:

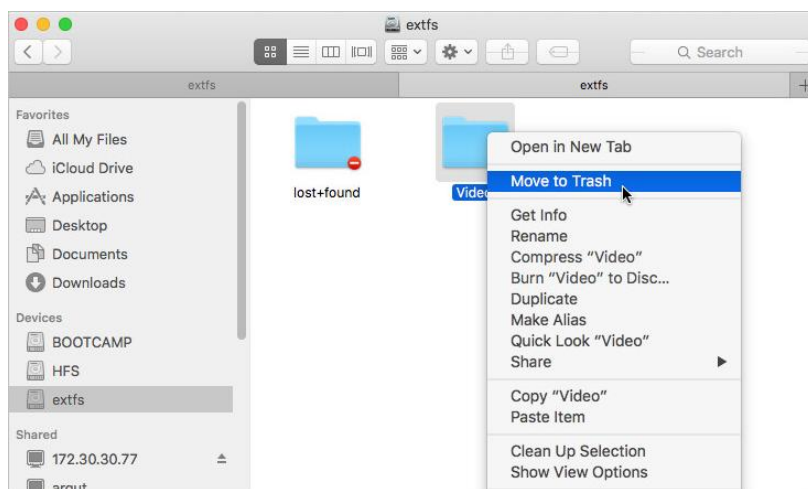
- Transfer data;



- Modify data;



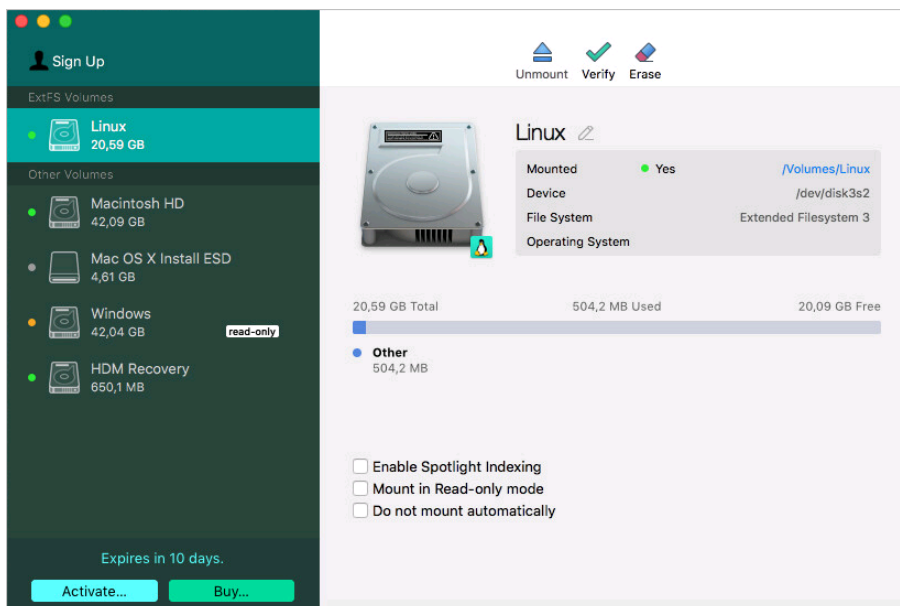
- Delete data;



Just whatever you feel like doing.

## Application Window

After the installation an icon of Paragon ExtFS for Mac appears in the Applications folder. Double click it to open the management interface.



## Menu Bar

As in any Mac program, it contains the Apple menu, active application menu, status menus, Spotlight icon, and Notification Center icon. For more details, please go to <https://support.apple.com/en-us/HT201956>.

## 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 physical and virtual volumes available in the system, including mounted DMG images. Detailed information on the currently selected item and available options are displayed on the right.

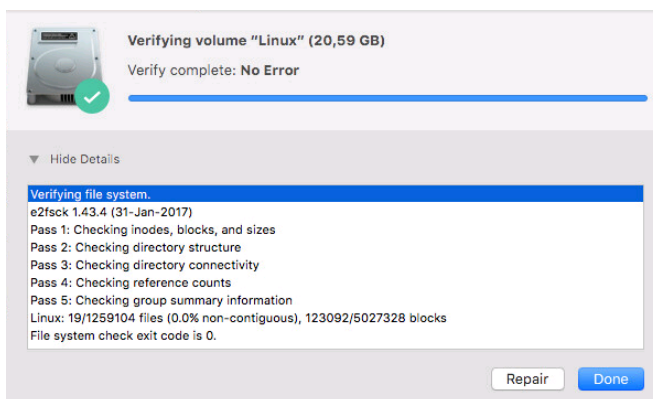
*Note: Sometimes you can notice one of your volumes obtaining the “read-only” and “nobrowse” attributes. This volume becomes inaccessible in Finder or any other application. It’s an internal problem of Mac OS X. Just remount the problem volume to fix this issue. Click [here](#) for more information.*

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## Operations Area

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

- **Mount/Unmount.** This action is available for any volume or image except for the one that accommodates Mac OS X you're currently using.
- **Verify.** You can check integrity and fix found errors on any of the supported file systems. Please note that to repair a file system, the volume where it is resided, should be unmounted, which is not the option for the one that started up your Mac. If you need to repair your computer’s startup disk, restart your Mac into Recovery Environment and use Disk Utility. For more details, please consult Disk Utility Help.

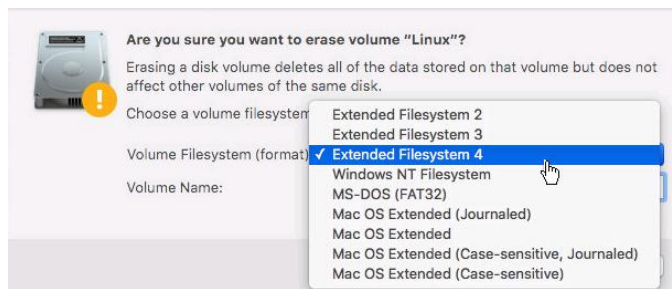


*Note: During the installation, the setup wizard adds the possibility to check and repair ExtFS volumes into Disk Utility. Click [here](#) for more information.*

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- **Erase** (not available for read-only media, e.g. your computer’s startup disk and compressed DMG images). You can reformat any existing volume to ExtFS or any other file system supported by your Mac. If having installed Paragon NTFS for Mac, the Windows-native NTFS becomes also available to choose. 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. Select the required file system type from the popup list:
  - *Extended Filesystem 2* doesn't have the journaling feature, which slows down the performance, thus it's recommended for flash sticks and USB drives.
  - *Extended Filesystem 3* – a journaled file system that has a dedicated area, where all changes are tracked. The journaling feature allows minimizing chances of file system corruption.
  - *Extended Filesystem 4* – 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.
  - [\*Windows NT Filesystem\*](#) – the primary file system for Windows OS.
  - *MS DOS (FAT32)*. Despite the fact that this file system is supported by Windows, Mac OS X, Linux and other operating systems, it's not recommended to use if you're planning to store files over 4GB and the volume size is over 32GB.
  - *Mac OS Extended (Journaled [HFS Plus](#))* – the primary file system for Mac OS X.
  - *Mac OS Extended*. Without keeping a special journal, you can achieve a better performance, but integrity of the hierarchical file system will not be protected, so we recommend it to use for virtual disk images only.
  - *Mac OS Extended (Case-sensitive HFS Plus)*. Use it if you'd like the file system to be case sensitive to folder names, for instance "Project" and "ProJect" to be distinguished as two different folders.
  - *Mac OS Extended (Case-sensitive, Journaled HFS Plus)*.
2. Enter a label to easily identify the volume later (optional parameter).
3. Click **Erase** when ready.

**Note:** LVM (Logical Volume Manager) Mirroring configurations are supported in read-only mode.

During the installation, the setup wizard adds the possibility to format partitions to ExtFS into Disk Utility. Click [here](#) for more information.

## Options Area

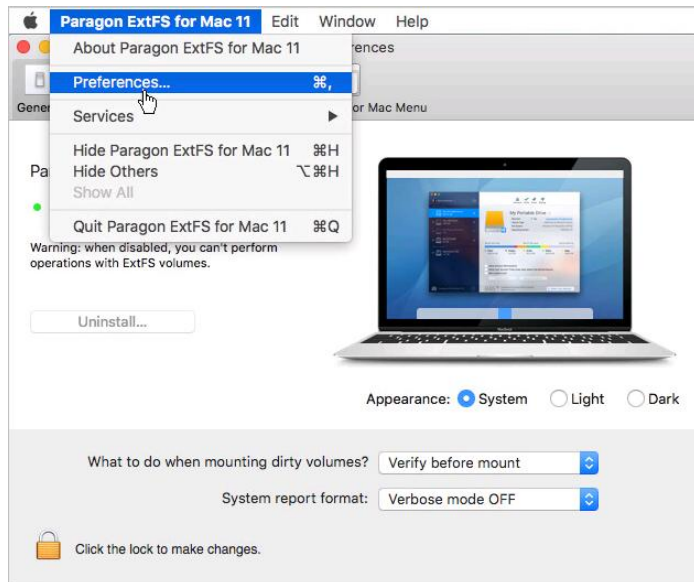
It contains options you're allowed to change for the currently selected volume or image.

- **Enable Spotlight Indexing.** Spotlight is a search feature of Apple's operating systems that is designed to quickly locate specific data on the computer, including documents, music, and pictures. Spotlight also delivers other benefits including quick access to definitions from the built-in dictionary. This feature helps a lot without compromising performance by periodically ticking away in the background. A major re-indexing only occurs after a major OS update.

- **Mount in Read-only mode** (not available for your computer's startup disk). Use this option to safely mount a volume that accommodates a hibernated Windows, or any other volume or image which contents are not preferable to modify.
- **Do not mount automatically** (not available for your computer's startup disk). Use this option if you'd like to disable the automount of a volume or image at system startup.

## Configuration Window

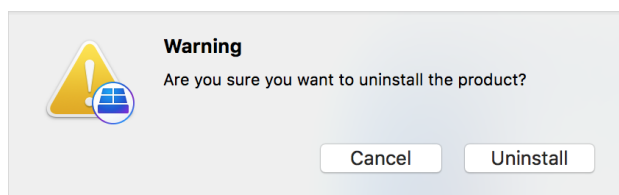
To configure our driver, click **Paragon ExtFS for Mac** in the Menu Bar, then **Preferences...**



All preferences are grouped into several tabs. Click on a tab to see what's inside.

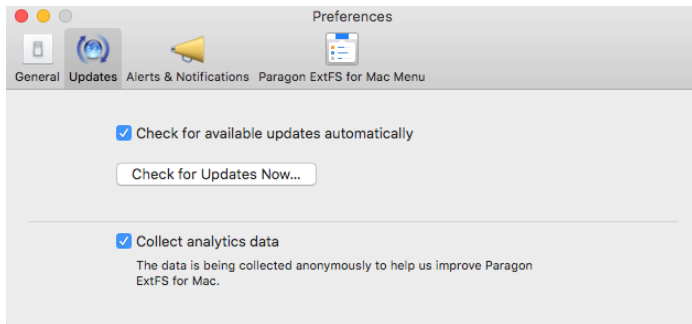
### General

- **Enable/Disable.** You can deactivate the driver at any moment.
- **Uninstall...** Use this option if you need to remove Paragon ExtFS for Mac from the system. Another way of accomplishing the same thing is by opening the installation package.



- **Appearance.** The application environment can be changed by choosing one of the two preset themes or the currently used Mac OS X theme.
- **Dirty volumes processing.** An ExtFS volume may become dirty if the system suffered a power interruption, aborted restart, or forced shutdown. By default, found dirty volumes will be checked for errors and repaired before mounting. You can tell our driver to ignore this verification, but we do not recommend it.
- **System report format.** Information on all volume mount actions will be saved in a system log. You can enable verbose mode to provide additional details to help our engineers solve your problem with minimal time. Reporting in verbose mode doesn't slow performance.

## Updates

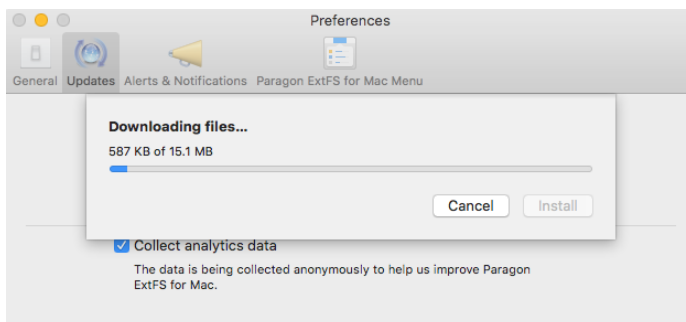


By default, Paragon ExtFS for Mac automatically checks company's website for available updates once a day. You can force this checkup at any moment by clicking **Check for Updates Now...** or disable this feature by unmarking the corresponding checkbox.

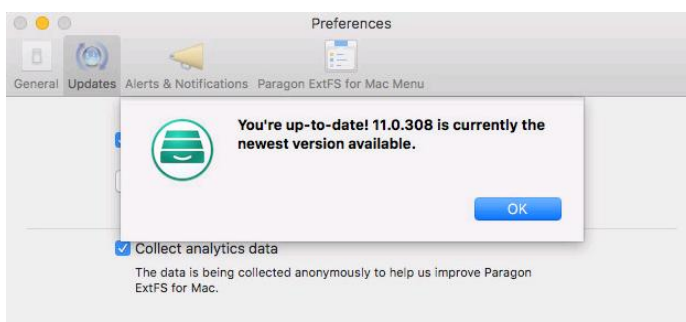
1. If a new version of the driver has been found, you will be prompted to install it. Click **Install Update**.



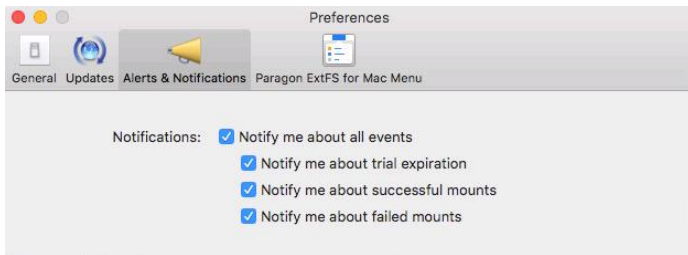
2. First the new installation package will be downloaded from company's website. Click **Install** when done.



3. The driver re-installation process takes a couple of minutes. Click **Relaunch** to complete it.



## Alerts & Notifications

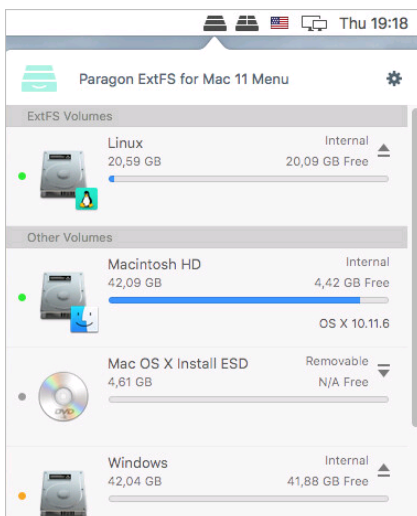


By default, you will be notified through popup windows on major product events. These include the current status of your trial period and disk mount reports. If necessary, you can disable all or any type of notifications.

## Driver Menu & Themes



Add the ExtFS for Mac icon into Menu Bar if you'd like to quickly get information on physical and virtual volumes available in the system, accomplish mount/unmount operations, and access the application preferences.



**Note:** You can choose different themes for the main application window and a menu bar application menu.

## Additional Scenarios

### Managing ExtFS in Disk Utility

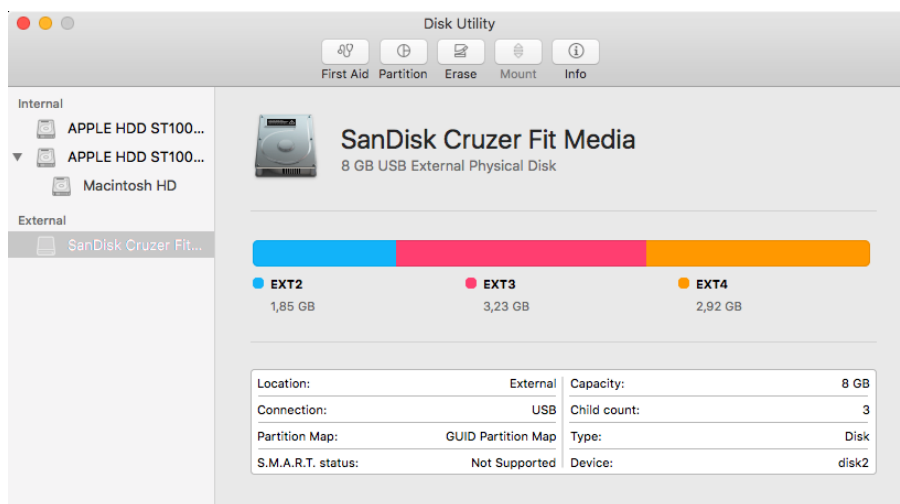
During installation of our driver, the setup wizard automatically adds the possibility to check integrity, fix errors, and erase (format) ExtFS volumes into Mac OS X Disk Utility.

*Note: Apple doesn't allow the use of third-party drivers in the GUI version of Disk Utility of El Capitan. Please either use our application window or command line tools to manage ExtFS partitions under El Capitan.*

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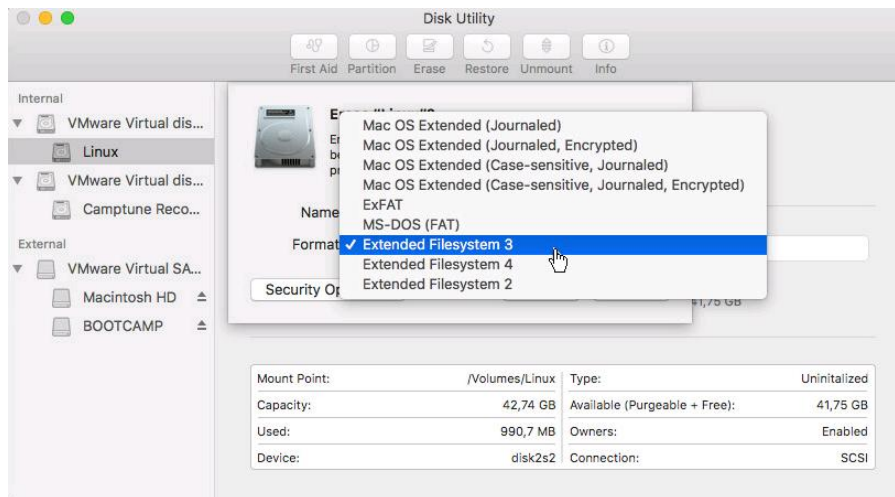
#### Check/Repair ExtFS Volumes

1. Launch Disk Utility: **Applications > Utilities > Disk Utility**;
2. Select an ExtFS volume from the list of available partitions on the left;
3. Click on the **First Aid** tab at the top of the window;
4. Click on the **Verify Disk** button to check it for integrity or the **Repair Disk** button to fix errors (if any).



#### Erase (Format) ExtFS Volumes

1. Launch Disk Utility: **Applications > Utilities > Disk Utility**;
2. Select a partition you need to format to ExtFS from the list of available partitions on the left;
3. Click on the **Erase** tab at the top of the window;
4. Select **Extended Filesystem 2/3/4** from the popup list;
5. Type in a new volume label (irrelevant parameter used for notification purposes);
6. Click on the **Erase** button to format the partition.



You can also carry out this operation in Terminal via a command line:

1. Launch the command line: **Applications > Utilities > Terminal**;
2. Type in **diskutil** to get help.

```
admins-mbp:~ admin$ diskutil
Disk Utility Tool
Utility to manage local disks and volumes
Most commands require an administrator or root user

WARNING: Most destructive operations are not prompted

Usage: diskutil [quiet] <verb> <options>, where <verb> is as follows:

    list                               (List the partitions of a disk)
    info[rmation]                       (Get information on a specific disk or partition)
    listFilesystems                     (List file systems available for formatting)
    activity                           (Continuous log of system-wide disk arbitration)

    u[n]mount                          (Unmount a single volume)
    unmountDisk                        (Unmount an entire disk (all volumes))
    eject                              (Eject a disk)
    mount                              (Mount a single volume)
    mountDisk                          (Mount an entire disk (all mountable volumes))

    enableJournal                      (Enable HFS+ journaling on a mounted HFS+ volume)
    disableJournal                     (Disable HFS+ journaling on a mounted HFS+ volume)
    moveJournal                        (Move the HFS+ journal onto another volume)
    enableOwnership                    (Exact on-disk User/Group IDs on a mounted volume)
    disableOwnership                   (Ignore on-disk User/Group IDs on a mounted volume)

    rename[Volume]                     (Rename a volume)

    verifyVolume                       (Verify the file system data structures of a volume)
    repairVolume                       (Repair the file system data structures of a volume)

    verifyDisk                         (Verify the components of a partition map of a disk)
    repairDisk                         (Repair the components of a partition map of a disk)

    eraseDisk                          (Erase an existing disk, removing all volumes)
    eraseVolume                       (Erase an existing volume)
    reformat                           (Erase an existing volume with same name and type)
    eraseOptical                       (Erase optical media (CD/RW, DVD/RW, etc.))
    zeroDisk                           (Erase a disk, writing zeros to the media)
    randomDisk                         (Erase a disk, writing random data to the media)
    secureErase                        (Securely erase a disk or freespace on a volume)

    partitionDisk                      ((re)Partition a disk, removing all volumes)
    resizeVolume                       (Resize a volume, increasing or decreasing its size)
    splitPartition                     (Split an existing partition into two or more)
    mergePartitions                    (Combine two or more existing partitions into one)

    appleRAID <verb>                   (Perform additional verbs related to AppleRAID)
    coreStorage <verb>                 (Perform additional verbs related to CoreStorage)
    apfs <verb>                         (Perform additional verbs related to APFS)

diskutil <verb> with no options will provide help on that verb
```

3. Use **diskutil eraseVolume "UFS\*\_ExtFS" "Volume Label" /dev/diskID** to format the required partition to ExtFS.

*Note: LVM (Logical Volume Manager) Mirroring configurations are supported in read-only mode.*

*There is no need to use inverted commas if label of your ExtFS disk contains just one word.*

---

## Managing ExtFS in Paragon's Terminal Utilities

### Check/Repair ExtFS Volumes

1. Launch the command line: **Applications > Utilities > Terminal**;
2. Type in **/usr/local/sbin/fsck\_ufs ExtFS** to get help.

```
admins-MacBook-Pro:~ admin$ /usr/local/sbin/fsck_ufs NTFS
Usage: fsck_ufs NTFS [-m] (-n | -y | -q) ...
      fsck_ufs NTFS -n device - verify disk, but don't repair
      fsck_ufs NTFS -y device - repair disk
      fsck_ufs NTFS -q device - quick check returns clean, dirty or failure
      -m - optional modifier to show minors

E.g.: fsck_ufs NTFS -m -n /dev/disk0s3
```

- Use **/usr/local/sbin/fsck\_ufs ExtFS -n device** to check disk integrity;
- Use **/usr/local/sbin/fsck\_ufs ExtFS -y device** to fix disk errors.

### Erase (Format) ExtFS Volumes

1. Launch the command line: **Applications > Utilities > Terminal**;
2. Type in **/usr/local/sbin/newfs\_ufs ExtFS** to get help.

```
admins-MacBook-Pro:~ admin$ /usr/local/sbin/newfs_ufs NTFS
Create an NTFS volume on a user specified block device
Usage: newfs_ufs NTFS [-v label] [-c] [-a size] device.
      -v label    Specifies the volume label.
      -a size     Overrides the default allocation unit size. Default settings
                  are strongly recommended for general use.
                  NTFS supports 512, 1024, 2048, 4096, 8192, 16K, 32K, 64K.
                  NTFS compression is not supported for allocation unit sizes
                  above 4096.

E.g.: newfs_ufs NTFS -v "X-Files" /dev/disk0s3
```

*Note: LVM (Logical Volume Manager) Mirroring configurations are supported in read-only mode.*

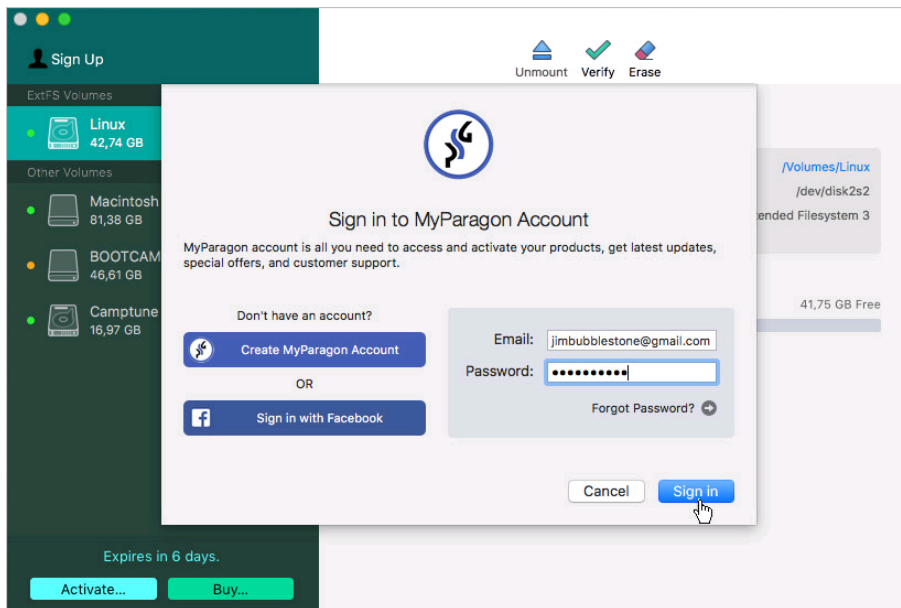
---



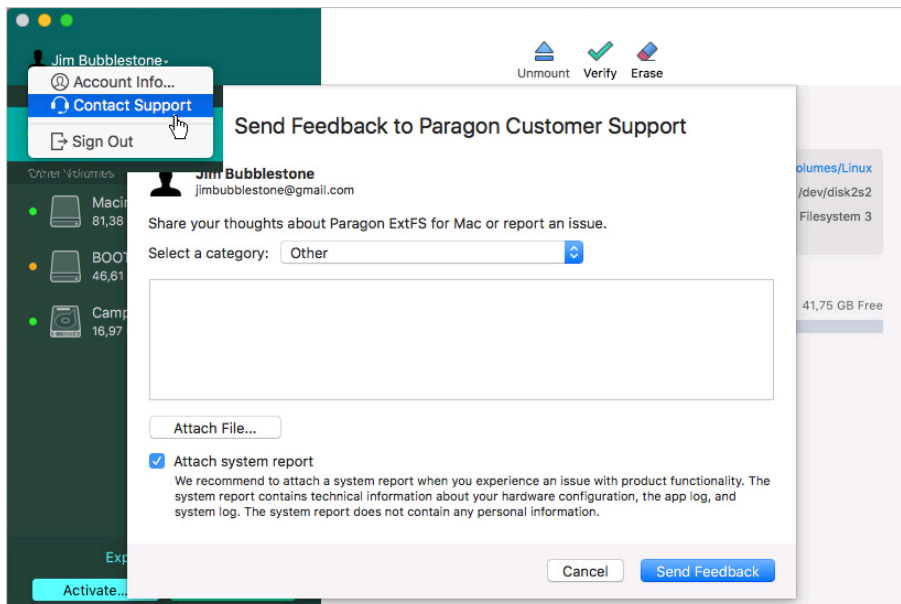
## Submitting a Support Request

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 and your brief description. All that can be prepared with a handy dialog.

1. Launch the management interface of Paragon ExtFS for Mac: **Applications > Paragon ExtFS for Mac**;
2. Click **Sign Up**. 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 your account, then **Contact Support**. Fill out the ticket request form, then click **Send Feedback**. That's all. Our support engineers will get in touch with you in a little while.

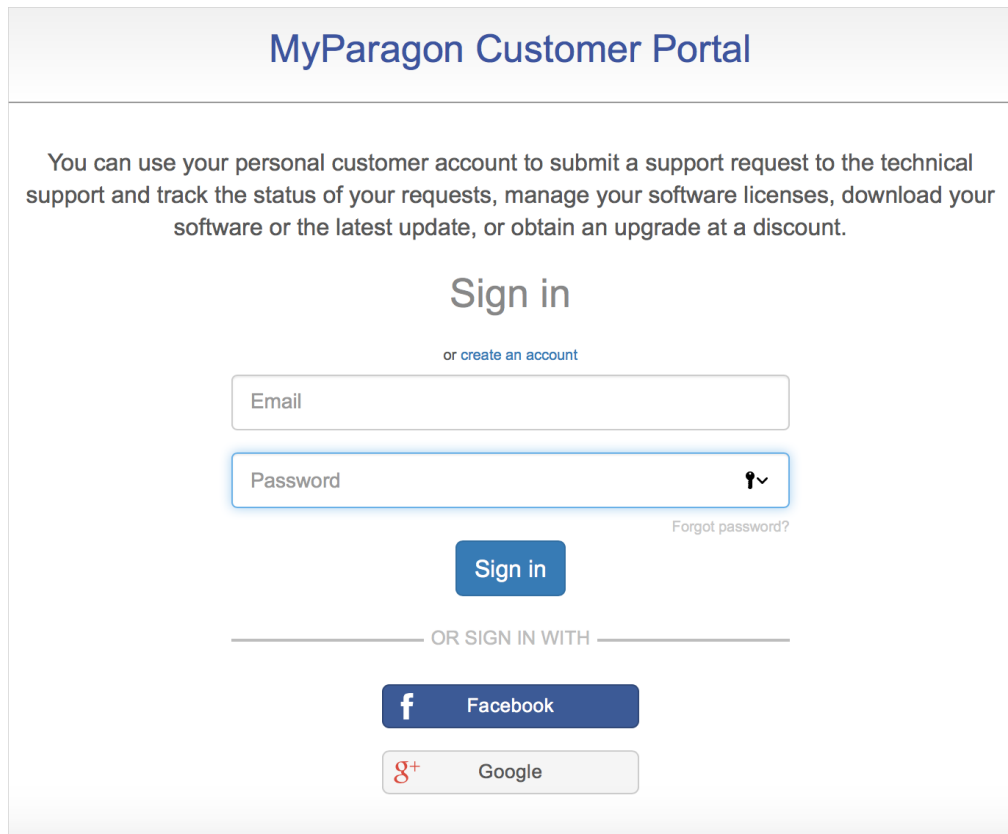




## Appendix

### 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.



The screenshot shows the 'MyParagon Customer Portal' login interface. At the top, the title 'MyParagon Customer Portal' is displayed in a blue font. Below the title, a paragraph explains the benefits of a personal customer account: 'You can use your personal customer account to submit a support request to the technical support and track the status of your requests, manage your software licenses, download your software or the latest update, or obtain an upgrade at a discount.' The main heading is 'Sign in', with a link 'or create an account' below it. The login form consists of two input fields: 'Email' and 'Password'. The 'Password' field has a toggle icon (an eye) to the right. Below the 'Password' field is a link 'Forgot password?'. A blue 'Sign in' button is positioned below the input fields. Below the button is a horizontal line with the text 'OR SIGN IN WITH' in the center. Under this line are two buttons: a blue 'Facebook' button with the Facebook 'f' logo, and a light gray 'Google' button with the Google 'G+' logo.

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.

## Sign up

English

United States

Sign up

---

OR SIGN IN WITH

Facebook

Google

Already have an account? [Sign in](#)

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.

## Sign up

Dear Jim Bubblestone,

We have found that some of your products were registered in the old Paragon MyAccount.

The old Paragon MyAccount is starting to show its age. So we've developed a brand new portal so we can meet current and future requirements for user-friendliness and security and expand our customer service. The old Paragon MyAccount and new MyParagon Portal will exist concurrently for a transitional period.

Please be informed that when you activate your customer account, we will migrate all your account information from the old Paragon MyAccount to the new MyParagon Portal.

Please click Next to proceed.

Next

5. Once your account is created, you will be prompted to check your inbox for an email with an activation link.

## Sign up

Your Paragon account has been created successfully. Please check your inbox and follow the link to activate your account.

[Sign in](#)

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

## Password Reset

Please set a new password for your account. The password must contain a minimum of 6 characters, at least 1 unique number and at least one unique capital and lowercase letter.

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.

## MyParagon Customer Portal

You can use your personal customer account to submit a support request to the technical support and track the status of your requests, manage your software licenses, download your software or the latest update, or obtain an upgrade at a discount.

### Sign in

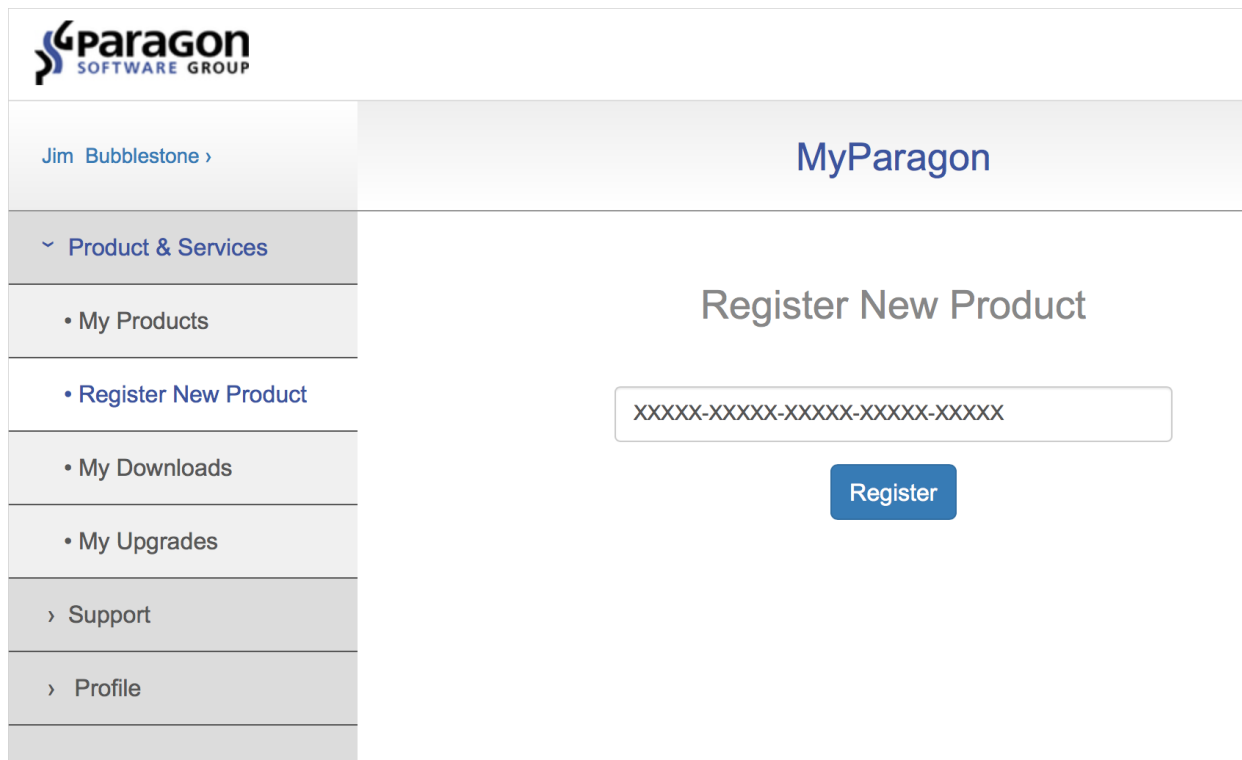
[or create an account](#)

[Forgot password?](#)

---

OR SIGN IN WITH

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.



The screenshot displays the 'MyParagon' user interface. On the left is a vertical navigation menu with the following items: 'Jim Bubblestone >', 'Product & Services' (expanded), 'My Products', 'Register New Product' (highlighted in blue), 'My Downloads', 'My Upgrades', 'Support', and 'Profile'. The main content area is titled 'MyParagon' and 'Register New Product'. It features a text input field containing the placeholder 'XXXXX-XXXXX-XXXXX-XXXXX-XXXXX' and a blue 'Register' button below it.

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.

## Known Issues

1. After installing our driver, the GUI version of Disk Utility in Mac OS X 10.11 El Capitan stops displaying mounted ExtFS partitions. It's due to the fact that Apple doesn't allow the use of third-party drivers in the GUI version of Disk Utility. Please use command line tools to manage ExtFS partitions:
  - To format or create a new disk:
    - **sudo diskutil eraseVolume "UFSD\_EXTFS" "LABEL" /dev/diskID** – creates an Ext2 partition,
    - **sudo diskutil eraseVolume "UFSD\_EXTFS3" "LABEL" /dev/diskID** – creates an Ext3 partition,
    - **sudo diskutil eraseVolume "UFSD\_EXTFS4" "LABEL" /dev/diskID** – creates an Ext4 partition;
  - To repair a disk: **sudo diskutil verifyVolume /dev/diskID**;
  - To mount a disk manually: **diskutil mount /dev/diskID** or  
**sudo mkdir /Volumes/mountPoint/** – creates a folder to mount a disk to,  
**usr/local/sbin/mount\_ufsd\_ExtFS /dev/diskID /Volumes/mountPoint** – mounts a disk to the earlier created folder.

*Note: Normally all found ExtFS partitions are mounted automatically.*

---

2. Sometimes you can notice one of your volumes obtaining the “read-only” and “nobrowse” attributes. This volume becomes inaccessible in Finder or any other application. The problem is originated from Mac OS X that mounts all volumes with these two attributes before the user login as a preparatory phase. Due to unknown reason one or several volumes might remain inaccessible after the login. Just remount the problem volume in [Application Window](#) to fix this issue.

## Glossary

**Hard Link** is a reference, or pointer, to physical data on a storage volume. On most file systems, all named files are hard links. The name associated with the file is simply a label that refers the operating system to the actual data. As such, more than one name can be associated with the same data. Though called by different names, any changes made will affect the actual data, regardless of how the file is called at a later time. Hard links can only refer to data that exists on the same file system.

**HFS Plus File System** (HFS or Mac OS Extended) is an updated version of HFS (Hierarchical File System) and is applied nowadays as the primary file system for Macintosh computers. Unlike HFS it supports much larger files (block addresses are 32-bit length instead of 16-bit) and uses Unicode (instead of Mac OS Roman) for naming the items (files, folders). Besides it permits filenames up to 255 UTF-16 characters in length, and n-forked files similar to NTFS, though almost no software takes advantage of forks other than the data fork and resource fork. One of the crucial improvements of this file system is of course the possibility to use a full 32-bit allocation mapping table that resulted in much less wasted space (and more files).

**Ext2 File System** is a file system for the Linux OS. It was initially designed as a replacement for the extended file system (ext). Although ext2 is not a journaling file system, its successors, Ext3/Ext4 FS, provide journaling and is almost completely compatible with ext2.

**NTFS File System** is an advanced file system that provides performance, security, reliability, and advanced features that are not found in any version of FAT. For example, NTFS guarantees volume consistency by using standard transaction logging and recovery techniques. If a system fails, NTFS uses its log file and checkpoint information to restore consistency of the file system. In its later versions, NTFS also provides advanced features such as file and folder permissions, encryption, disk quotas, and compression.

**Resource Fork** is a construct of the Mac OS operating system used to store structured data in a file, alongside unstructured data stored within the data fork. A resource fork stores information in a specific form, such as icons, the shapes of windows, definitions of menus and their contents, and application code (machine code).

**Symbolic Link** (Symlink or Soft Link) consists of a special type of file that serves as a reference to another file or directory. Unlike a hard link, which points directly to data and represents another name for the same file, a symbolic link contains a path which identifies the target of the symbolic link. Thus, when the user removes a symbolic link, the file to which it pointed remains unaffected. Symbolic links may refer to files even on other mounted file systems.

**UFSD™** (Universal File System Driver) technology developed by Paragon Software provides full read/write access to the so-called popular file systems (NTFS, FAT16/32, Ext2/Ext3/Ext4, etc.) under operating systems that cannot do it by default (e.g. NTFS for Linux, Ext2/Ext3/Ext4 for Windows, etc.).

This technology is based on the direct access to physical drives and buffered Input/Output access, that is why it makes it possible to process unsupported partitions (browse contents, read and modify files, copy and create new files and folders, etc.) while keeping an acceptable level of performance.