



REDUNDEAD

OPERATION GUIDE



REDUNDEAD | VERSION 3.0 (BETA)

RED.COM

REDUNDEAD OPERATION GUIDE

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RESPONSIBLE PARTY

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Irvine, CA 92618
USA

CHAPTER 1:

REDUNDEAD OVERVIEW

INTRODUCTION

REDUNDEAD® is a lightweight media retrieval tool provided by RED® for the emergency recovery of footage. REDUNDEAD is designed to repair and restore .R3D files from media that may have been formatted or experienced errors while critical information was still present. It can also recover media that may have been lost due to improper media ejecting and unmounting practices.

- ▶ REDUNDEAD is compatible with the following RED media devices:
- ▶ REDMAG™
- ▶ RED MINI-MAG®
- ▶ REDFLASH®
- ▶ RED-RAM®
- ▶ RED-DRIVE®

WARNING: Use REDUNDEAD at your own risk. RED DOES NOT guarantee that REDUNDEAD will be able to recover any media files that will be useable.

IMPORTANT: DO NOT use REDUNDEAD to recover media that you do not own rights to.

WHEN REDUNDEAD CAN RECOVER MEDIA

Use REDUNDEAD to recover damaged or lost .R3D files in the following situations:

- ▶ After media is formatted with .R3D files still present.
- ▶ After improperly unmounting media from a computer resulting in lost .R3D files.
- ▶ After improperly ejecting media from a DSMC resulting in lost .R3D files.

WHEN REDUNDEAD MAY NOT BE ABLE TO RECOVER MEDIA

REDUNDEAD may not be able to recover damaged or lost .R3D files in the following situations:

- ▶ When media is physically damaged.
- ▶ When media is reformatted AND used to record new footage, overwriting the previous footage.

NOTE: If there are existing .R3D files that have NOT been recorded over, they may still be recovered.

WHEN REDUNDEAD CANNOT RECOVER MEDIA

REDUNDEAD cannot recover data if the media cannot be recognized by the computer.

CHAPTER 2:

DOWNLOAD AND INSTALL REDUNDEAD

DOWNLOAD REDUNDEAD

REDUNDEAD® can be downloaded from the RED® website at www.red.com/downloads under the BETA tab.

1. Go to www.red.com/downloads.
2. Click **Software**.
3. Click **Beta**.
4. Navigate to the REDUNDEAD (BETA) download.
5. Click **Release History**.
6. Navigate to the box that contains the symbol in the bottom right corner for your operating system.
NOTE: REDUNDEAD is available for Mac® OS X® and Windows®.
7. Select the check box to agree to RED's Terms and Conditions.



Figure: REDUNDEAD Terms and Conditions

8. Click **DOWNLOAD**.
9. Select a desired download location.
10. Click **Save**.

INSTALL REDUNDEAD ON WINDOWS

To install REDUNDEAD on a Windows operating system, follow the instructions below:

1. Navigate to the REDUNDEAD download.
2. Double-click the compressed **REDUndead_v#_Win** download to extract the files.
3. Open the extracted folder.
4. Double-click the **REDUndead_v#.msi** file and select **Run**.

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5. Click **Next**.

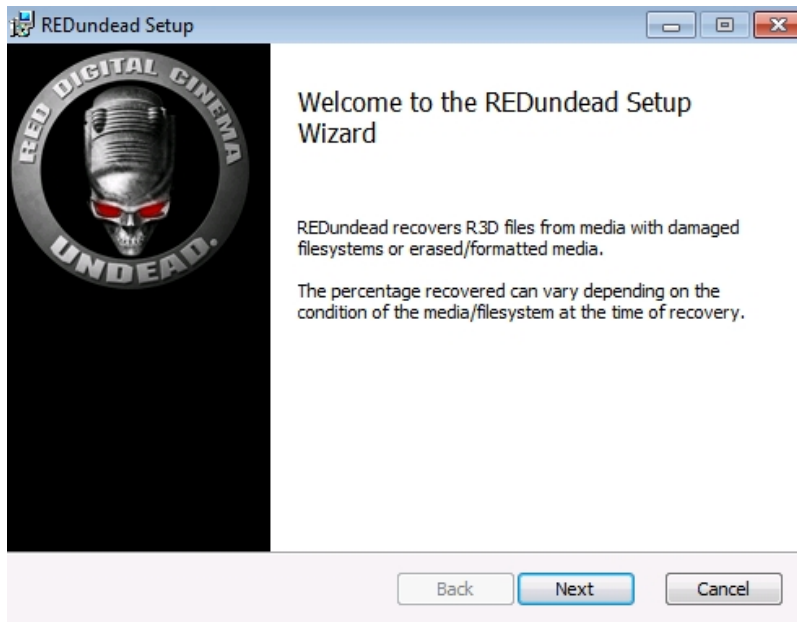


Figure: Click Next

6. Select the check box to agree to RED's License Agreement.
7. Click **Next**.

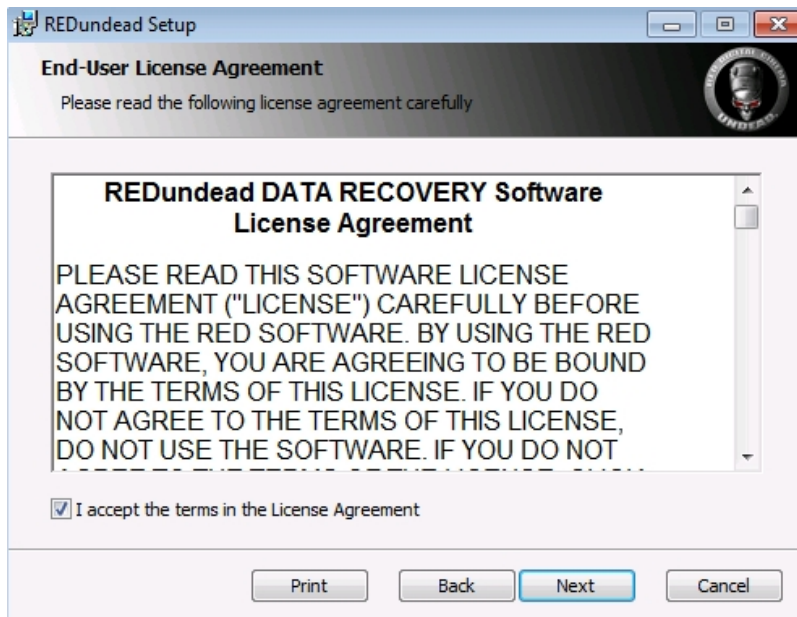


Figure: Click Next

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- Click **Next**.

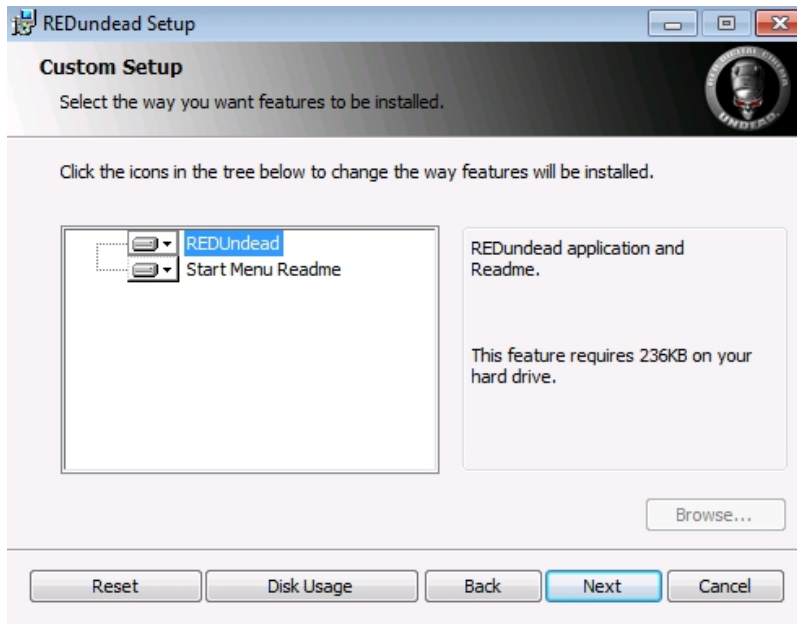


Figure: Click Next

- Click **Install**.

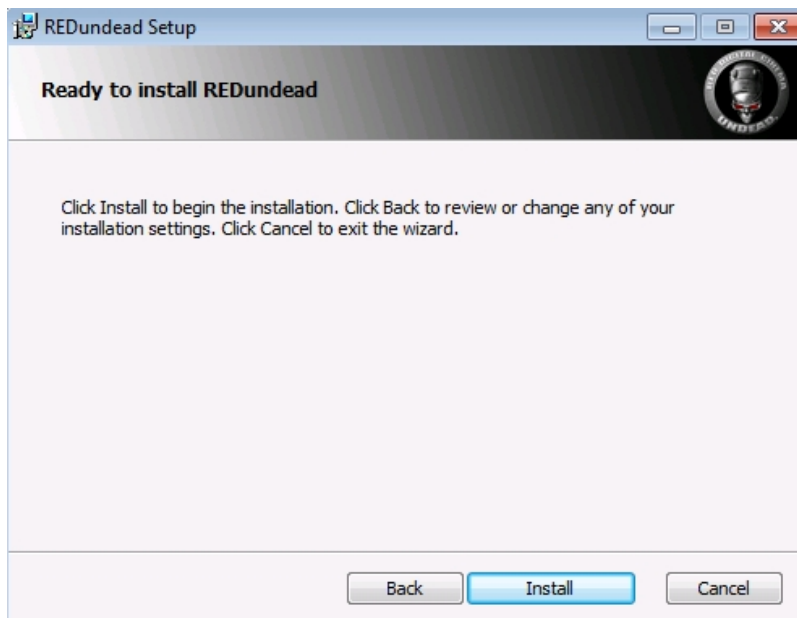


Figure: Click Install

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10. Click **Finish**.

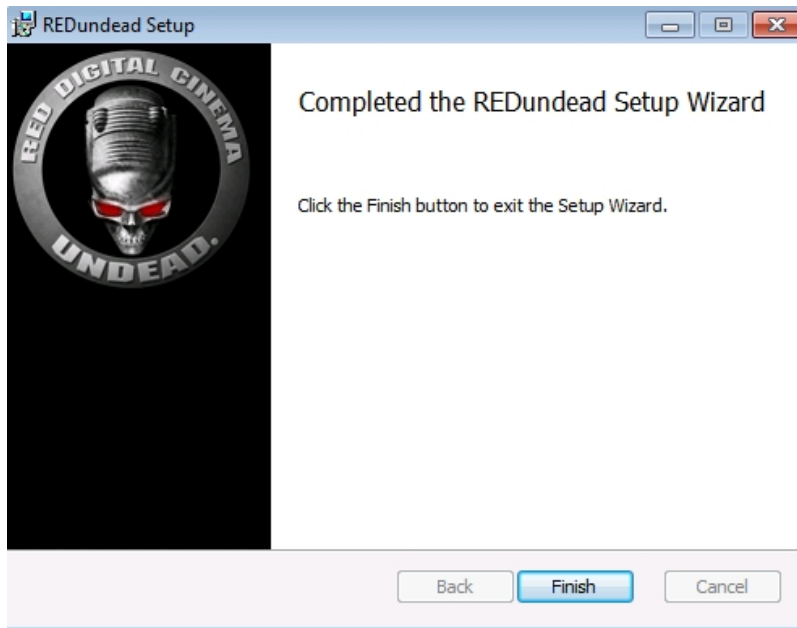


Figure: Click Finish

11. Click the Windows **Start** button in the taskbar.
12. Type **cmd**.
13. Under **Programs** or **Best Match**, right-click **cmd** or **Command Prompt** and select **Run as administrator**.
14. Type **REDundead** into the command prompt line and press **Enter**.

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INSTALL REDUNDEAD ON MAC OS X

To install REDUNDEAD on a Mac OS X operating system, follow the instructions below:

1. Navigate to the REDUNDEAD download.
2. Double-click the compressed **REDUndead_v#** download to extract the files.
3. Open the extracted folder.
4. Right-click the **REDUndead_v#.pkg** file and select **Open** from the drop-down menu.
5. Click **Continue**.



Figure: Click Continue

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6. Click **Continue**.

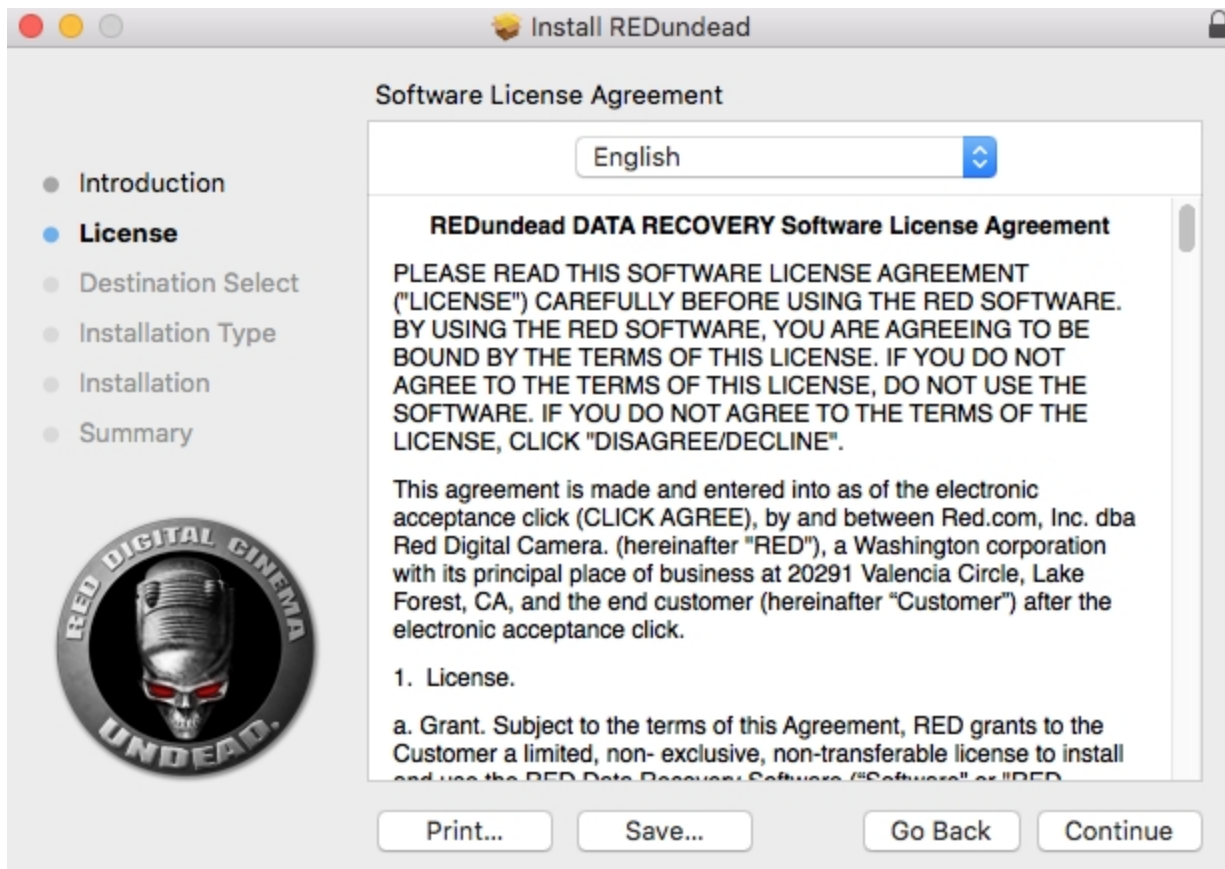


Figure: Click Continue

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7. Click **Agree**.

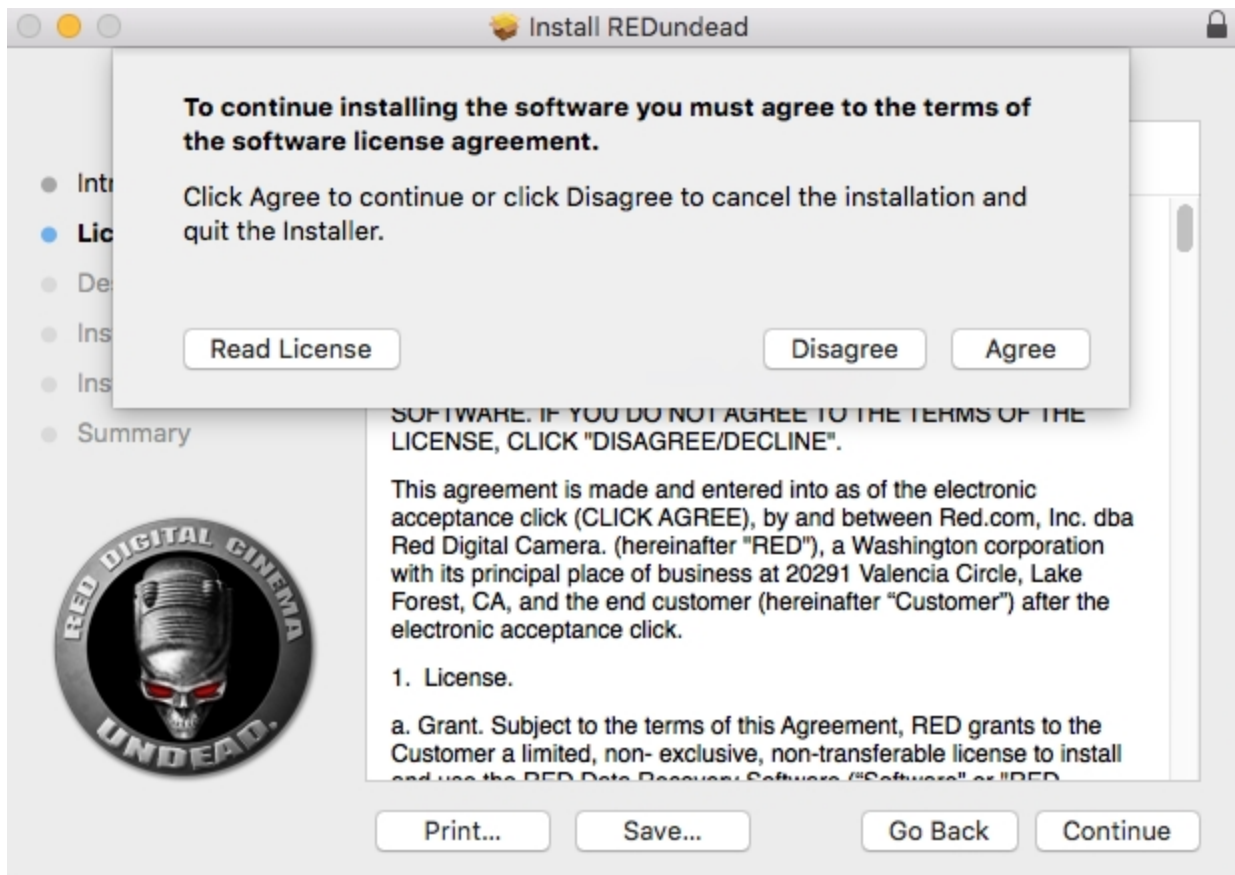


Figure: Click Agree

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8. Click **Continue**.

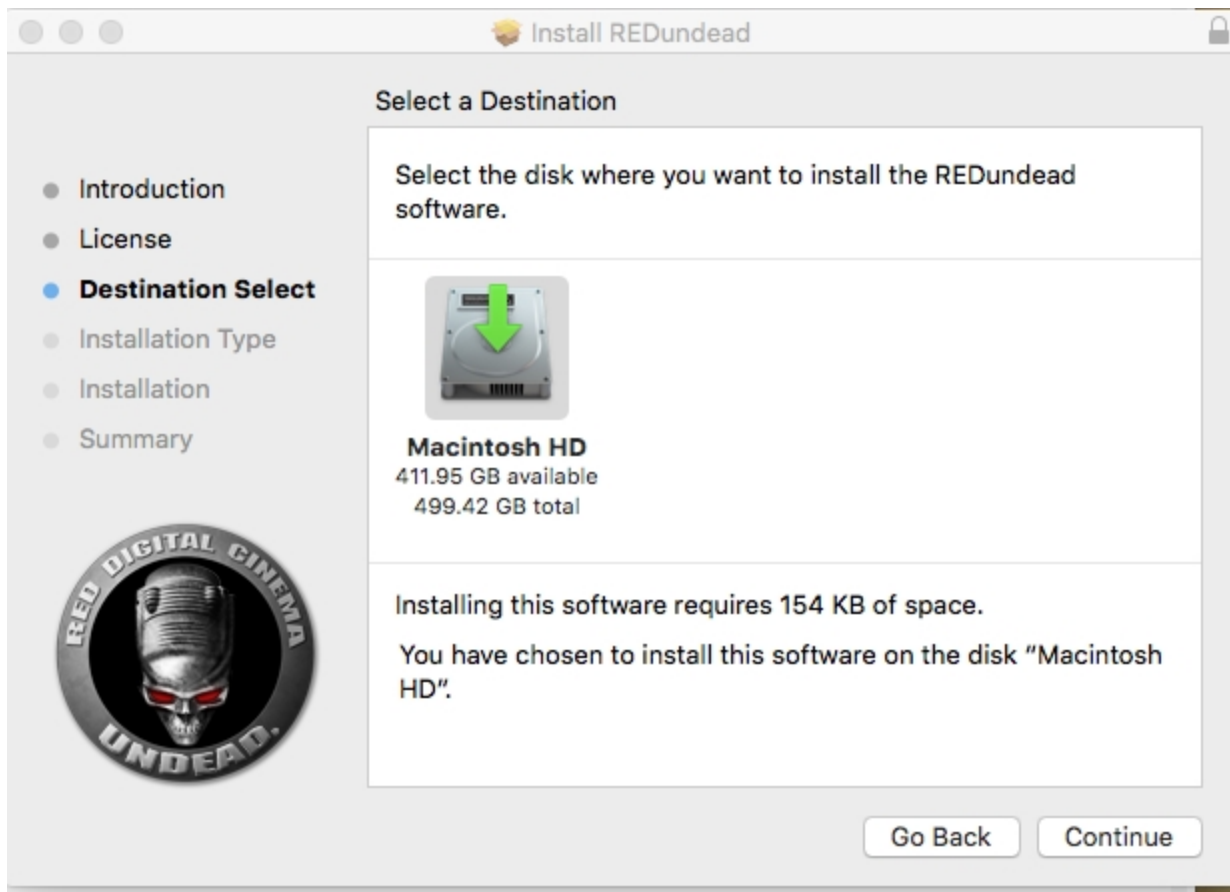


Figure: Click Continue

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9. Click **Install**.



Figure: Click Install

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10. Click **Close** when the installation is complete.

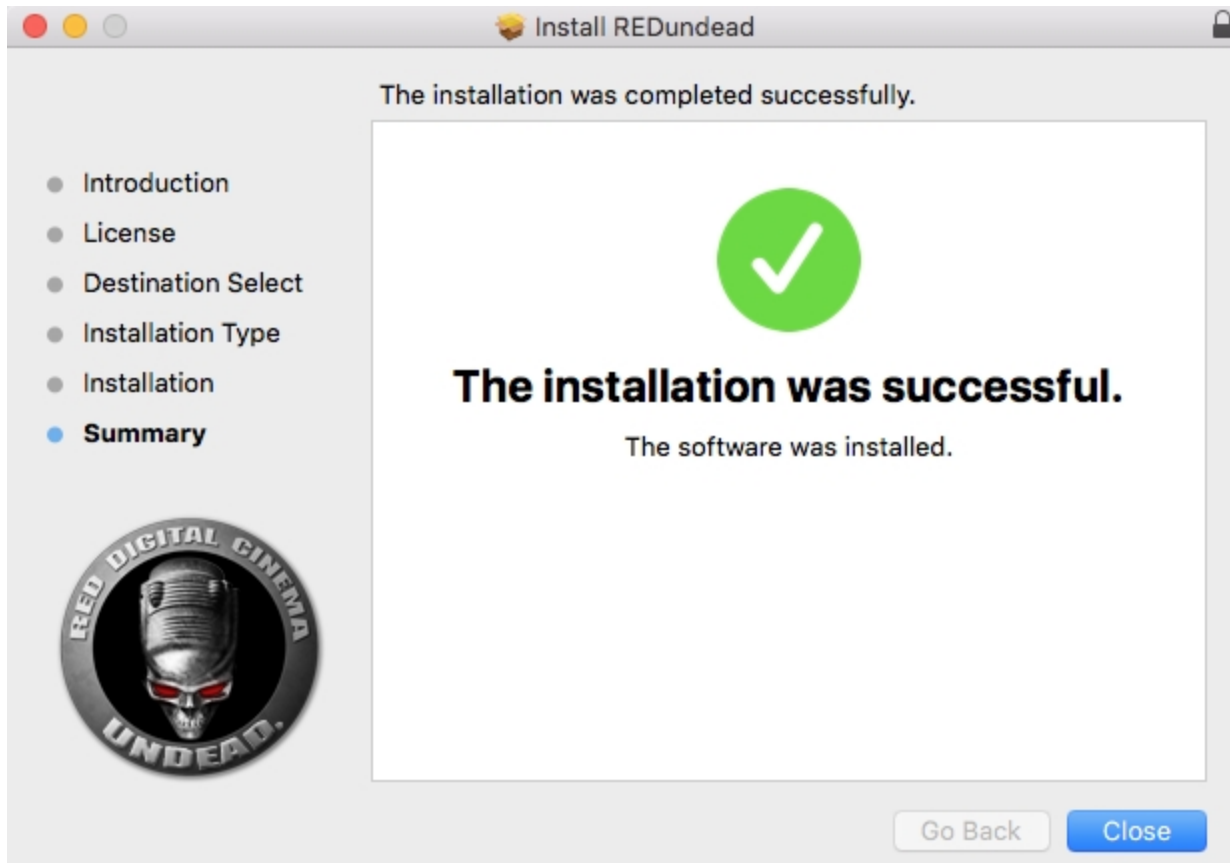


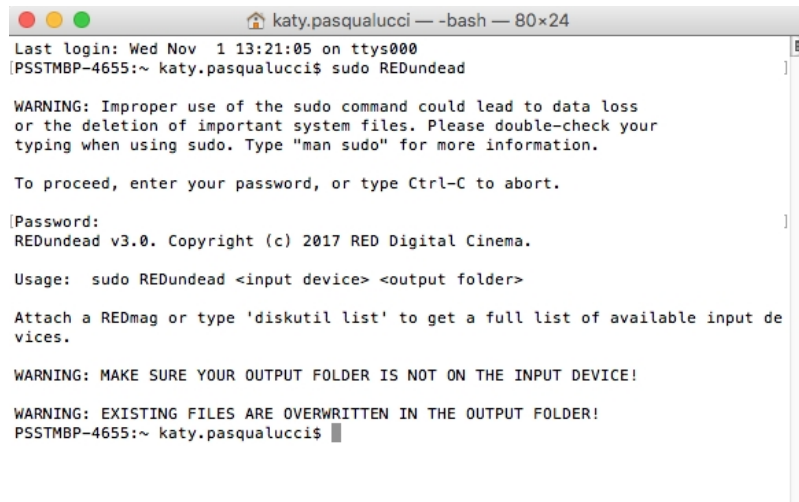
Figure: Click Close

11. Go to **Applications > Utilities** and open **Terminal**.
12. Enter **sudo REDundead** into the command prompt line.

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13. Enter your computer password if prompted.

If the installation is successful, REDUNDEAD outputs the text displayed in the image below.

A terminal window titled 'katy.pasqualucci — -bash — 80x24' showing the output of the 'sudo REDundead' command. The output includes a warning about sudo usage, a password prompt, and the REDundead v3.0.0 copyright notice. It also shows the usage instructions and two more warnings about output folder placement and file overwriting.

```
katy.pasqualucci — -bash — 80x24
Last login: Wed Nov  1 13:21:05 on ttys000
PSSTMBP-4655:~ katy.pasqualucci$ sudo REDundead

WARNING: Improper use of the sudo command could lead to data loss
or the deletion of important system files. Please double-check your
typing when using sudo. Type "man sudo" for more information.

To proceed, enter your password, or type Ctrl-C to abort.

[Password:
REDundead v3.0. Copyright (c) 2017 RED Digital Cinema.

Usage:  sudo REDundead <input device> <output folder>

Attach a REDmag or type 'diskutil list' to get a full list of available input de
vices.

WARNING: MAKE SURE YOUR OUTPUT FOLDER IS NOT ON THE INPUT DEVICE!

WARNING: EXISTING FILES ARE OVERWRITTEN IN THE OUTPUT FOLDER!
PSSTMBP-4655:~ katy.pasqualucci$
```

Figure: Confirm REDUNDEAD

CHAPTER 3:

RECOVER MEDIA WITH REDUNDEAD

RECOVER MEDIA ON WINDOWS

To recover media on a Windows® operating system, follow the instructions below:

1. Create a folder on your computer where you want to save recovered .R3D files.

WARNING: Available hard disk space on your computer must be at least the size of the total storage space on the RED® media being recovered.

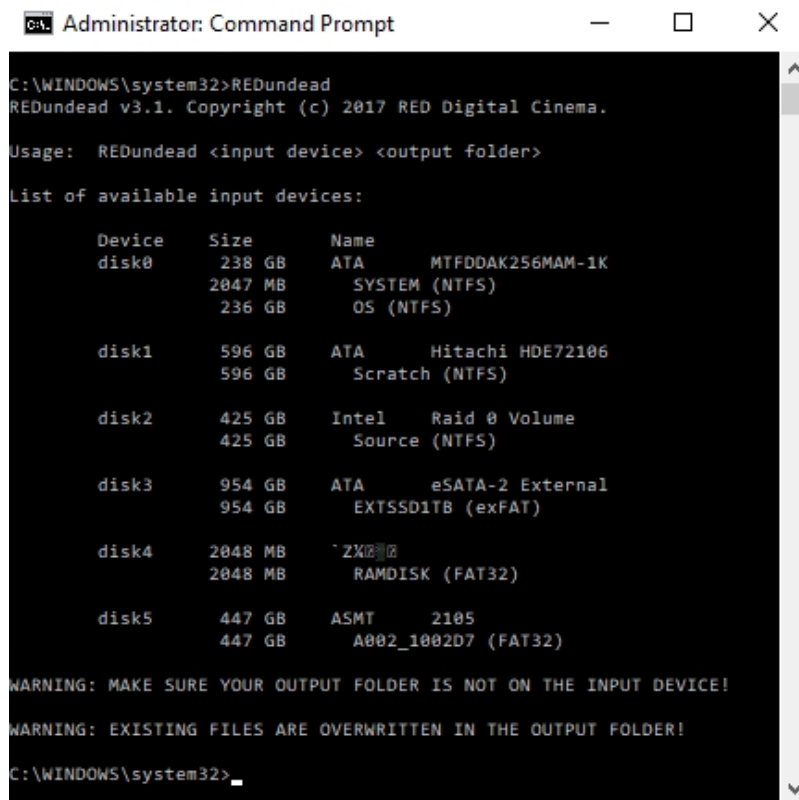
NOTE: In this example, we create a folder on the D drive labeled “RecoveryFolder” for the recovered files. The path for this folder location on your hard drive is “D:/RecoveryFolder”.

2. Use the appropriate docking station to connect the RED media to your computer.
3. Click the Windows **Start** button in the taskbar.
4. Type **cmd**.
5. Under **Programs** or **Best Match**, right-click **cmd** or **Command Prompt** and select **Run as administrator**.

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6. Type **REDundead** into the command prompt line and press **Enter**.

NOTE: Recognized media device(s) appear and are numbered as “disk1”, “disk2”, “disk3”, etc.



```
C:\WINDOWS\system32>REDundead
REDundead v3.1. Copyright (c) 2017 RED Digital Cinema.

Usage: REDundead <input device> <output folder>

List of available input devices:

Device    Size    Name
disk0      238 GB  ATA      MTFDDAK256MAM-1K
           2047 MB  SYSTEM (NTFS)
           236 GB  OS (NTFS)

disk1      596 GB  ATA      Hitachi HDE72106
           596 GB  Scratch (NTFS)

disk2      425 GB  Intel    Raid 0 Volume
           425 GB  Source (NTFS)

disk3      954 GB  ATA      eSATA-2 External
           954 GB  EXTSSD1TB (exFAT)

disk4      2048 MB  ZX2000   RAMDISK (FAT32)

disk5      447 GB  ASMT     2105
           447 GB  A002_1002D7 (FAT32)

WARNING: MAKE SURE YOUR OUTPUT FOLDER IS NOT ON THE INPUT DEVICE!

WARNING: EXISTING FILES ARE OVERWRITTEN IN THE OUTPUT FOLDER!

C:\WINDOWS\system32>
```

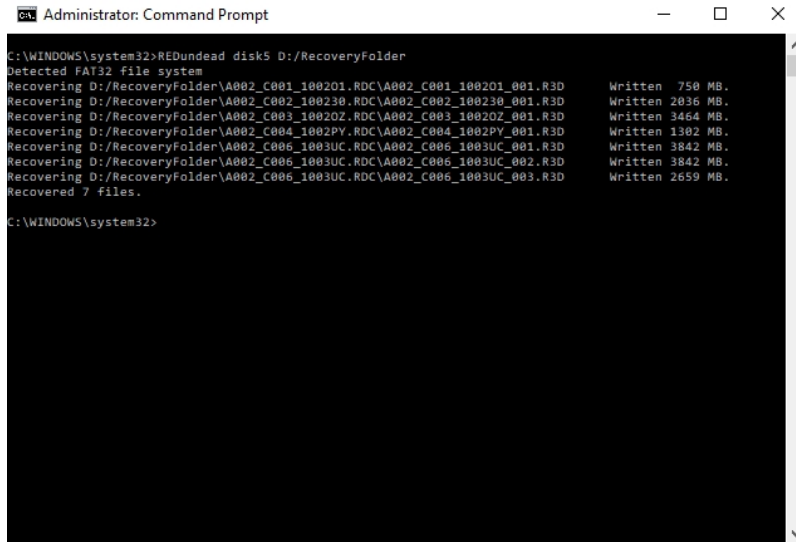
Figure: Type REDundead

7. Determine the source path and disk number for the disk that you want to recover.
 - ▶ If a list of disks does not appear, type **echo list disk | diskpart** and press **Enter**.
 8. After identifying the correct REDMAG™ disk and source path, type the following to match the **REDundead disk5 D:/RecoveryFolder** format, where:
 - ▶ **disk5**: Is the correct number for the REDMAG disk identified earlier.
 - ▶ **D:/RecoveryFolder**: Is the output destination where the recovered file will be written.

WARNING: Do not select the REDMAG as the output destination for the recovered files as it will cause all data to be lost.
 9. Press **Enter**.
 10. Enter your computer password if prompted.
- REDUNDEAD® begins to recover files from the media device. This operation may take awhile. Files display in the terminal window as they are found and rewritten.
- NOTE:** To stop the recovery process, press **CTRL +Z**. Files that have already recovered remain. Any files currently processing stop at the current location.

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- Wait for the terminal window to display **Recovered # files.** indicating REDUNDEAD is complete.



```
C:\WINDOWS\system32>REDundead disk5 D:/RecoveryFolder
Detected FAT32 file system
Recovering D:/RecoveryFolder\A002_C001_100201.RDC\A002_C001_100201_001.R3D      Written 750 MB.
Recovering D:/RecoveryFolder\A002_C002_100230.RDC\A002_C002_100230_001.R3D      Written 2036 MB.
Recovering D:/RecoveryFolder\A002_C003_100202.RDC\A002_C003_100202_001.R3D      Written 3464 MB.
Recovering D:/RecoveryFolder\A002_C004_1002PY.RDC\A002_C004_1002PY_001.R3D      Written 1302 MB.
Recovering D:/RecoveryFolder\A002_C006_1003UC.RDC\A002_C006_1003UC_001.R3D      Written 3842 MB.
Recovering D:/RecoveryFolder\A002_C006_1003UC.RDC\A002_C006_1003UC_002.R3D      Written 3842 MB.
Recovering D:/RecoveryFolder\A002_C006_1003UC.RDC\A002_C006_1003UC_003.R3D      Written 2659 MB.
Recovered 7 files.
C:\WINDOWS\system32>
```

Figure: Recovery Folder Command Prompt

- Open the destination folder to verify files that were successfully recovered.

NOTE: RED recommends that you unmount the drive from Disk Utility before physically removing it from the computer. This helps to prevent unintended corruption of the drive and/or files.

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RECOVER MEDIA ON MAC OS X

To recover media on a Mac® OS X® operating system, follow the instructions below:

1. Create a folder on your computer where you want to save recovered .R3D files.

WARNING: Available hard disk space on your computer must be at least the size of the total storage space on the RED® media being recovered.

NOTE: In this example, we create a folder on the desktop labeled “RECOVER” for the recovered files. The path for this folder location on your hard drive is “/Users/yourusername/Desktop/RECOVER”.

2. Use the appropriate docking station to connect the RED media to your computer.
3. Open **Terminal**.
4. Enter **diskutil list** into the Terminal command prompt line.
5. Press **Enter**.

NOTE: Recognized media device(s) appear and are numbered as “disk1”, “disk2”, “disk3”, etc.

6. Determine the source path and disk number for the disk that you want to recover.
7. Open **Disk Utility** and select **Info** on the drive to view the disk information.

NOTE: In this example, the RED media device that we attempt to recover is “disk1”, with a source path of “/dev/disk1”, and thus the disk number is one (1).

```
johnsmith - bash - 80x24
Last login: Tue Aug 18 10:21:50 on ttys001
PBMSMBP-2059:~ johnsmith$ diskutil list
/dev/disk0
#:                                TYPE NAME                SIZE      IDENTIFIER
0:      GUID_partition_scheme      *500.1 GB   disk0
1:                  EFI EFI                209.7 MB   disk0s1
2:      Apple_HFS Macintosh HD       499.2 GB   disk0s2
3:      Apple_Boot Recovery HD       650.0 MB   disk0s3
/dev/disk1
#:                                TYPE NAME                SIZE      IDENTIFIER
0:      FDisk_partition_scheme      *128.0 GB   disk1
1:          Windows_FAT_32 A002_0408AU    128.0 GB   disk1s1
PBMSMBP-2059:~ johnsmith$
```

Figure: REDUNDEAD Media Sources

8. Enter **sudo redundead /dev/rdisk# /destination/path**, where:
 - ▶ # is the number of the source disk determined in [Step 6](#), which is one (1) in the example **/dev/rdisk1**
 - ▶ **/destination/path** is the location created in [Step 1](#), such as **/User/johnsmith/Desktop/RECOVER**

NOTE: Drag and drop the recovery location folder into the Terminal window instead of manually entering the destination path. The path automatically generates.

WARNING: Improper use of the sudo command could lead to data loss or the deletion of important system files. Double-check your typing when using sudo. Enter **man sudo** for more information.

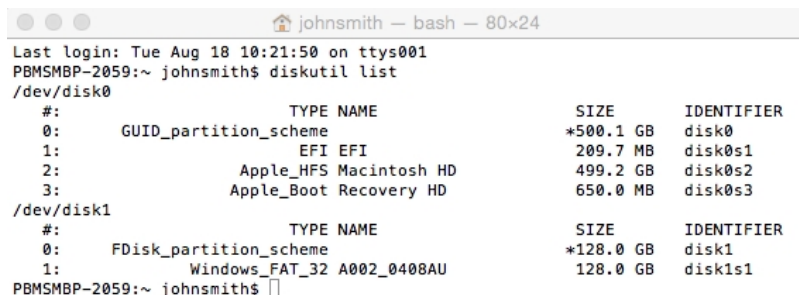
IMPORTANT: Ensure there is a space after “sudo”, “redundead”, and the source path. The space is required for REDUNDEAD to run properly.

IMPORTANT: Note the “r” in front of the media source disk. It is required for REDUNDEAD to run properly.

9. Ensure that the command, source path, and destination path are entered correctly.

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10. Press **Enter**.



```
johnsmith — bash — 80x24
Last login: Tue Aug 18 10:21:50 on ttys001
PBMSMBP-2059:~ johnsmith$ diskutil list
/dev/disk0
#:                       TYPE NAME                    SIZE       IDENTIFIER
0:      GUID_partition_scheme                        *500.1 GB   disk0
1:                  EFI EFI                          209.7 MB   disk0s1
2:      Apple_HFS Macintosh HD                       499.2 GB   disk0s2
3:      Apple_Boot Recovery HD                       650.0 MB   disk0s3
/dev/disk1
#:                       TYPE NAME                    SIZE       IDENTIFIER
0:      FDisk_partition_scheme                      *128.0 GB   disk1
1:          Windows_FAT_32 A002_0408AU                128.0 GB   disk1s1
PBMSMBP-2059:~ johnsmith$
```

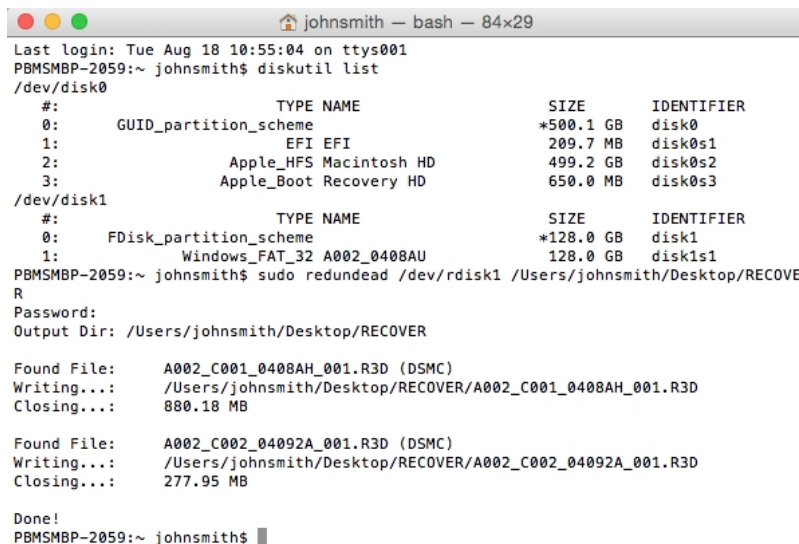
Figure: Run REDUNDEAD

11. Enter your computer password if prompted.

REDUNDEAD begins to recover files from the media device. This operation may take a while. Files display in the terminal window as they are found and rewritten.

NOTE: To stop the recovery process, press **CTRL+Z**. Files that have already been recovered remain. Any files currently processing stop at the current location.

12. Wait for terminal window to display **Done!** indicating REDUNDEAD is complete.



```
johnsmith — bash — 84x29
Last login: Tue Aug 18 10:55:04 on ttys001
PBMSMBP-2059:~ johnsmith$ diskutil list
/dev/disk0
#:                       TYPE NAME                    SIZE       IDENTIFIER
0:      GUID_partition_scheme                        *500.1 GB   disk0
1:                  EFI EFI                          209.7 MB   disk0s1
2:      Apple_HFS Macintosh HD                       499.2 GB   disk0s2
3:      Apple_Boot Recovery HD                       650.0 MB   disk0s3
/dev/disk1
#:                       TYPE NAME                    SIZE       IDENTIFIER
0:      FDisk_partition_scheme                      *128.0 GB   disk1
1:          Windows_FAT_32 A002_0408AU                128.0 GB   disk1s1
PBMSMBP-2059:~ johnsmith$ sudo redundead /dev/disk1 /Users/johnsmith/Desktop/RECOVER
R
Password:
Output Dir: /Users/johnsmith/Desktop/RECOVER

Found File:      A002_C001_0408AH_001.R3D (DSMC)
Writing...      /Users/johnsmith/Desktop/RECOVER/A002_C001_0408AH_001.R3D
Closing...      880.18 MB

Found File:      A002_C002_04092A_001.R3D (DSMC)
Writing...      /Users/johnsmith/Desktop/RECOVER/A002_C002_04092A_001.R3D
Closing...      277.95 MB

Done!
PBMSMBP-2059:~ johnsmith$
```

Figure: REDUNDEAD Complete

13. Open the destination folder to verify files that were successfully recovered.

NOTE: RED recommends that you unmount the drive from Disk Utility before physically removing it from the computer. This helps to prevent unintended corruption of the drive and/or files.

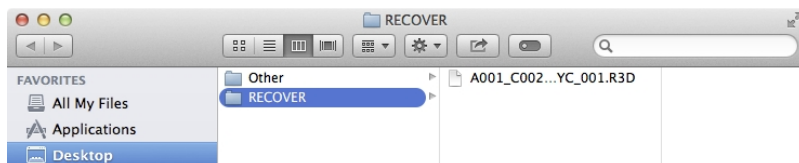


Figure: Verify Recovered Files