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## Fusion and Dual Drive Configuration for Mac®

**Installation Guide** 



#### WD Service and Support

Should you encounter any problem, please give us an opportunity to address it before returning this product. Most technical support questions can be answered through our knowledge base or e-mail support service at *http://support.wd.com*. If the answer is not available or, if you prefer, please contact WD at the best telephone number shown below.

Your product includes 30 days of free telephone support during the warranty period. This 30-day period starts on the date of your first telephone contact with WD technical support. E-mail support is free for the entire warranty period and our extensive knowledge base is available 24/7. To help us keep you informed of new features and services, remember to register your product online at: *https://www.wd.com/register*.

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When contacting WD for support, have your WD product serial number, system hardware, and system software versions available.

United States/North America	
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Spanish	800.832.4778
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Asia Pacific (non toll free)	+65.6848.6008
Japan	00 531 650442/ 0120 994 120
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Europe (non toll free)	+31.880062100
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WD Black<sup>2</sup> Fusion and Dual Drive Configuration for Mac Installation Guide



### Getting Started

This document is intended to guide you through the process of installing your new WD Black<sup>2</sup> as a Mac Fusion or dual drive (non-Fusion) configuration.

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**Important:** To install the WD Black<sup>2</sup> dual drive, you *must* have a Mac System that supports a 9.5 mm (2.5") drive with Mavericks OSX 10.9.x.

Items needed to perform this process:

- A Phillips screwdriver with "0" tip head
- SATA to USB adapter cable (included in retail box)
- Image Backup of Mac System drive (Refer to your Apple system documentation for information on using Time Machine.)
- A blank 2 GB, or larger, USB flash drive

Download the following zip files to your local drive. These will be needed in the procedures that follow.

- WD Black<sup>2</sup> Firmware Update for Mac
- WD Black<sup>2</sup> Configuration Utilities for Mac

WD Black<sup>2</sup> Fusion and Dual Drive Configuration for Mac Installation Guide

## WD Black<sup>2</sup> Firmware Update Procedure

You must update the WD Black<sup>2</sup> drive firmware before setting up or configuring the drive. Updating the WD Black<sup>2</sup> drive firmware requires creating a bootable Linux USB flash drive.

#### Creating the Bootable Linux USB Flash Drive

**CAUTION:** During this procedure, all data on your flash drive will be erased. Please backup your data before you proceed.

- 1. Locate the WD\_Black2\_Firmware\_Update\_Utility zip file that you downloaded in the "Getting Started" section, and unzip it on your desktop.
- 2. Double-click the WD Black2 Firmware Update Utility file to mount it.
- 3. Plug in the USB flash drive. If a pop up message appears, click Ignore.
- 4. Launch the Disk Utility (Applications > Utilities).
- 5. Select the USB flash drive in the left pane.

Important: Verify the correct flash drive is selected or the wrong disk will be formatted.

- 6. Select the **Partition** tab.
- 7. Under Partition Layout, select **1 Partition**.
- 8. Select Options.
- 9. Select **Master Boot Record**, then click **OK**. Enter a temporary name for the flash drive. This name will be overwritten in the following procedure.
- 10. Under Format, select **MS-DOS (FAT)**.
- 11. Click **Apply** to apply changes to your flash drive.
- 12. Click **Partition** to create the partition on the USB flash drive.

#### Installing the Linux ISO Image on the USB Flash Drive

1. The WD Black<sup>2</sup> Firmware Update Utility file should be mounted in Disk Utility under the divider line on the left side. Select the mounted partition **WD\_LINUX**.

*Note:* If WD Black<sup>2</sup> Firmware Update Utility is not mounted in Disk Utility, you will need to double click the file to mount it, as stated in *Step 2 on page 3*.

If you have a permissions problem with a file installed Disk Permissions.	by the OS X installer, click Repair
Show details	Clear History
Verify Disk Permissions	Verify Disk
	Ø Show details

(7

2. Select the **Restore** tab. The WD\_LINUX volume name appears in the *Source* field.



3. To select a destination volume, drag the partition with the temporary name you gave the flash drive in *Step 9 on page 3,* from the list on the left to the *Destination* field.

Verify Info Burn Unmount E	ect Enable Journaling New Image Convert Resize Image	Log
I 160.04 GB WDC WD1600B. Untitled 1 Sol GB Generic USB UNTITLED 1 SuperDrive WD Black2 Firmware Updat. WD_LINUX	First Ald       Erase       Restore         To copy a volume or restore a disk image to a volume, select the source volume or disk image, select the destination volume, and then click Restore.         To restore a disk image stored on disk, click image.         • To restore a disk image stored on the web, drag it from a web browser to the Source field or enter its URL starting with "http://".         • To copy a disk, drag it from the list on the left.         Source:       WD_LINUX       Image         To select a destination volume, drag it from the list on the left to the bestination field.         Destination:       UNTITLED 1         Erase "UNTITLED 1" and copy the contents of "WD_LINUX" to it.	e
Mount Point : /// Format : MS Owners Enabled : No Number of Folders : 0	Jumes/WD_LINUX         Capacity:         838.9         MB         (838,860,800         Bytes)           DOS (FAT32)         Available:         224.4         MB         224,423,936         Bytes)           Used:         612.8         MB         (612,782,080         Bytes)           Number of Files:         0	

4. Click **Restore**. The following message appears.



- 5. Click **Erase** to confirm that you want to erase your USB flash drive. The Linux ISO is restored to the USB flash drive which is now bootable.
- 6. If the following screen appears prompting for a password, **Enter** the administrator password that you created for the Mac.

	wants to make changes. Type your o allow this.
Name:	username
Password:	
	Cancel OK

Allow approximately 4 minutes for Linux to load onto the USB flash drive. When complete, the USB bootable Linux flash drive is ready to boot to Linux and update the firmware.

### Update the Drive Firmware

- 1. Shut down your system.
- 2. Remove the USB flash drive before performing step 3 of this procedure.
- 3. Remove the original system drive from your Mac system and replace it with the WD Black<sup>2</sup>.



Note: Refer to your Apple System documentation for hard drive removal and installation instructions.

- 4. Re-insert the USB flash drive in a USB port on your Mac system.
- 5. Press the **power** button and hold the **option** key during boot-up for the boot menu. The following screen appears.



6. Select EFI Boot to boot from the USB flash drive. The drive update will start automatically.



Note: The update will take a few minutes.

- 7. When the update is complete, the message "Drive has been successfully updated" appears. Press any key to shut down your system.
- 8. Remove the USB flash drive. It is no longer needed.
- 9. Continue to Chapter 3, "Setting Up the WD Black<sup>2</sup> Drive."

WD Black<sup>2</sup> Fusion and Dual Drive Configuration for Mac Installation Guide



## Setting Up the WD Black<sup>2</sup> Drive

Follow these instructions to boot the Mac system from the original system drive using the SATA to USB cable.

- 1. Attach the original system drive to your Mac system using the SATA to USB cable.
- 2. To boot from your original system drive, press the **power** button while pressing and holding the **option** key on the keyboard.





3. Select the drive icon labeled with your "original drive name", to continue the boot process.

After the boot process completes, the following dialog box may appear.



4. If the above dialog box appears, click **Ignore**. The drive will be initialized in a subsequent step.

#### Preparing your WD Black<sup>2</sup> Drive

Before configuring the WD Black<sup>2</sup> Drive in the next section, you must first prepare the drive. This will expand the drive's capacity to 1.12 TB.

1. Locate the WD\_Black2\_Configuration\_Utility zip file that you downloaded in the "Getting Started" section, and unzip it on your desktop.



2. Select and run the **WD Black2 Dual Drive Initialize** utility to expand the extended drive capacity to 1.12 TB.



3. Read the warning message, then click **Continue** to initialize the WD Black<sup>2</sup> Dual Drive. When the Black<sup>2</sup> Dual Drive has been initialized, the following screen appears.



4. Click **Continue** to reboot, then press and hold the Mac keyboard **option** key until the boot option screen appears.





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*Note:* The System Reboot allows the Mac OSX to display the extended combined SSD and HDD drive capacity.

5. Select the drive icon labeled with your "original drive name", to continue the boot process.

After the system completes the reboot process, the following dialog box may appear.

The disk you inser this computer.	ted was not read	lable by
 Initialize	Ignore	Eject

6. If the above dialog box appears, click **Ignore**. The drive will be initialized in a subsequent step.

#### Configuring the WD Black<sup>2</sup> Drive

How you configure a WD Black<sup>2</sup> drive for use in a Mac system depends on how much control you want over your data. You have two options.

**Option 1: Creating a Mac Fusion Drive** Choose this option if you want your OS to determine which data gets placed on the HDD and SSD. To create a Fusion Drive, see "Create a Mac Fusion Drive."

**Option 2: Creating a Dual Drive (Non-Fusion Drive)** Choose this option if you want to decide where your data goes (e.g. keep your OS on the SSD, and your data on the HDD).



Note: Option 2 is not recommended if you have more than 120 GB on your original device. For example:

- Depending on the restore software used, you may not be able to exclude files to make everything fit in the 120 GB partition.

-You may also need to re-install some software if your original hard drive image is more than 120GB.

To create a Dual Drive, see "Create a Dual Drive (Non-Fusion)" on page 14.

#### Create a Mac Fusion Drive

To create a Fusion drive, use the Create Core Storage Volume utility.

1. Locate the WD Black<sup>2</sup> Configuration Utility that you downloaded from the "Getting Started" section, and unzip it on your desktop.



2. Double-click the Create Core Storage Volume utility. A warning message appears.



3. Read the warning message and click **OK**.

In a few minutes the following message will appear, indicating that the Fusion drive was successfully created.

-	The WD Black2 Core Storage Volume has been successfully created. You may now install or Image your original drive onto the new drive.
	Cancel OK

- 4. Click **OK**.
- 5. To verify your configuration, continue to the section, "Verify Creation of a Fusion Drive or Dual Drive (Non-Fusion)."

#### Create a Dual Drive (Non-Fusion)

To create a Dual Drive (Non-Fusion), use the Create Dual Drive Volumes utility.

1. Locate the WD Black<sup>2</sup> Configuration Utility that you downloaded from the "Getting Started" section, and unzip it on your desktop.

		₩D Black2 Confi	iguration Utility	R
FAVORITES All My Files AirDrop Ar Applicati Desktop Documents Downloads Movies Downloads Movies Devices Devices UNTIT $\triangleq$	Create Core Storage Volume	Create Dual Drive Volumes	WD Black2 Dual Drive Initialize	

2. Double-click the **Create Dual Drive Volumes** utility. A warning message appears.

	WARNING!!
ġ,	This utility is inherently dangerous. It will destroy all existing data on disk0 when creating the Two new Logical Volumes. Before continuing, verify that there are no other Drives attached to the internal SATA ports. Please click OK to Continue
	Drives attached to the internal SATA ports.

3. Read the warning message and click **OK**.

In a few minutes the following message will appear, indicating that the Dual Drive was successfully created.

×	The WD Black2 Dual Drive has been successfully partitioned. You may now install or Image your original drive onto the new drive.
	Cancel OK

- 4. Click OK.
- 5. To verify your configuration, continue to the section, "Verify Creation of a Fusion Drive or Dual Drive (Non-Fusion)."

#### Verify Creation of a Fusion Drive or Dual Drive (Non-Fusion)

To verify that the Fusion Drive or Dual Drive (Non-Fusion) drive was created properly, do the following:

- 1. Click the Apple icon located on the top left corner of the screen, and select **About This Mac** from the drop-down menu.
- 2. Click the **More Info...** button and then select the **Storage** tab. If everything was created correctly, you should see the following images depending on your configuration.

#### **Fusion Drive**

y Support	Service
1.11 TB free out of 1.11 TB	ĺ
B Movies Photos Apps Backups Other Zero KB Zero KB Zero KB Zero KB 758.2 MB	
	Movies Photos Apps Backups Other

#### **Dual Drive (Non-Fusion)**



WD Black<sup>2</sup> Fusion and Dual Drive Configuration for Mac Installation Guide

## Restoring the Master Drive Image to the WD Black<sup>2</sup> Drive

After successfully configuring your drive, follow the instructions below to restore your original system drive image to the newly setup WD Black<sup>2</sup>.

- 1. Shut down your Mac.
- 2. Press the **power** button, then press and hold the **option** key on the keyboard.



3. Select the **Recovery** drive icon. The OSX Utilities Window appears.



## 4. From the OSX Utilities Window, select the **Disk Utility** icon and click the **Continue** button.

- (a) If you are restoring a Fusion Drive, continue to "Restoring to a Fusion Drive."
- (b) If you are restoring a Dual Drive (Non-Fusion), skip to *"Restoring to a Dual Drive (Non-Fusion)" on page 20.*

#### Restoring to a Fusion Drive

After clicking **Continue** in Step 4 above, the below screen appears.

Core Storage WD Black2 S00.11 GB WD SATAUSB Untitled	To select a destination volume, drag it from the list on the Destination field. Destination: Erase Destination and copy the contents of "Untitled" to it.	m a web http://*, mage

1. In the left window pane, select the USB drive partition containing the Mac OSX operating system, and then click the **Restore** tab at the top of this window, next to the RAID tab. The USB partition will appear in the **Source** field.

Core Storage WD Black2 500.11 GB WD SATAUSB	First Aid       Erase       RAID       Restore         To copy a volume or restore a disk image to a volume, select the source volume or disk image, select the destination volume, and then click Restore.       To select a source, do one of the following:         0       10 restore a disk image stored on disk, click image.         10       10 restore a disk image stored on the web, drag it from a web browser to the Source field or enter its URL starting with "http://".         10       10 copy a disk, drag it from the list on the left.         Source:       Untitled       Image         To select a destination volume, drag it from the list on the left to the Destination field.         Destination:       WD Black2         Erase "WD Black2" and copy the contents of "Untitled" to it.         Restore	
Mount Point : Format : Owners Enabled : Number of Folders :	Mac OS Extended (Journaled) Available : 483.13 GB (483,125,723,136 Bytes) Yes Used : 16.12 GB (16,122,380,288 Bytes)	

2. In the left window pane, drag the WD Black<sup>2</sup> partition at the top of the list to the Destination field, and click the **Restore** button.

- 3. A warning message displays informing you that the partition will be erased. Click **OK** and wait for the restore process to finish.
- 4. When the restore process is finished, shut down your Mac and disconnect the original USB attached drive. You are now finished and can begin using your Mac.

#### Restoring to a Dual Drive (Non-Fusion)

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**Important:** To restore your original disk image to the SSD portion of the Black<sup>2</sup> dual drive in a Dual Drive (Non-Fusion) configuration, the original disk image *MUST* be smaller than 120 GB. Verify this before continuing.

After clicking **Continue** from the OSX Utilities Window in *Step 4 on page 18*, the below screen appears.

1.12 T8 WDC WD10512 SSD HDD 500.11 GB WD SATAUSB Untitled		To copy a volume or restore a disk image to a volu disk image, select the destination volume, and the To select a source, do one of the f • To restore a disk image store browser to the Source field or ente • To restore a disk image store browser to the Source field or ente • To copy a disk, drag it from t Source: Untitled To select a destination volume, dra Destination: Erase Destination and copy the cor	t click Restore. bllowing: d on fisk, click Image. d on fisk click Image. d on the web, drag it from a web tris URL starting with "http://". he list on the left. Image ig it from the list on the left to the
---	--	--	--

1. In the left window pane, select the USB drive partition containing the Mac OSX operating system, and then click the **Restore** tab at the top of this window, next to the RAID tab. The USB partition will appear in the **Source** field.

2. In the left window pane, drag the SSD partition at the top of the list to the Destination field, and click **Restore**.

1.12 TB WDC WD10512 SD HDD 500.11 GB WD SATAUSB Untitled	First Aid Erase RAID Resso To copy a volume or restore a disk image to a volume, select disk image, select the destination volume, and then click Re To select a source, do one of the following: To restore a disk image stored on this To restore a disk image stored on the browser to the Source field or enter its URL To copy a disk, drag it from the list or Source: Untitled To select a destination volume, drag it from Destination field. Destination: SSD Erase "SSD" and copy the contents of "Untit	t the source volume or istore. k, click Image. web, drag it from a web starting with "http://". the left. Image n the list on the left to the
--	--	--

- 3. A warning message displays informing you that the partition will be erased. Click **OK** and wait for the restore process to finish.
- 4. When the restore process is finished, shut down your Mac and disconnect the original USB attached drive. You are now finished and can begin using your Mac.

#### For service and literature:

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