

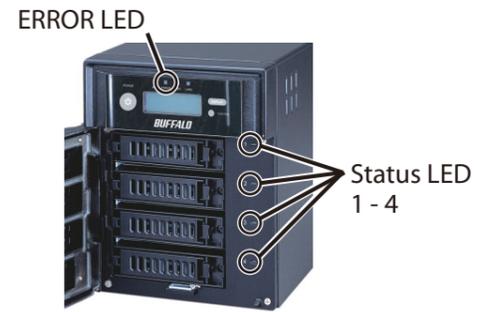
Hard Drive Replacement Procedure

Drive Failures

When an internal hard drive in the TeraStation has failed, the ERROR LED will glow red.

Open the front cover of the TeraStation and check the status LEDs. Any hard drive whose status LED is solid or flashing red (or just flashing amber) is malfunctioning. A hard drive whose status LED is solid red can be removed even if the TeraStation's power is ON and replaced with a new hard drive (OP-HD series).

- * Do not unplug any hard drive whose status LED is not lit red. If you remove the drive, data may be lost or the TeraStation may malfunction.
- * A flashing red (or amber) status LED denotes an active hard drive. Please perform the removal process on the Web Admin of the TeraStation before replacing the hard drive.
- * Hard drives can also be removed when the TeraStation is OFF since the drives are no longer active.
- * Installing or removing a hard drive while the system is still running is referred to as a Hot Swap.
- * The illustration contains a picture of the TeraStation ES (TS-XEL series). It shows the typical placement of the different LED indicators on a TeraStation. Your product may be slightly different.



Hard Drive Replacement Examples

- The TeraStation is fragile. Handle with care. Do not drop or shock the TeraStation.
- The TeraStation weighs approximately 8kg (20lbs). Use caution when handling the unit in order to avoid personal injury.
- Never disassemble any parts while you are replacing a hard drive unless instructed to do so in this manual. Any malfunction or damage caused by disassembling the TeraStation will void your warranty.
- To avoid damaging the TeraStation with static electricity, ground yourself by touching something made of metal parts such as a door knob or an aluminum window frame. This will release any static charge.
- Use an OP-HD series hard drive approved by BUFFALO (sold separately), which has exactly the same hard drive capacity as one of the original drives, as a replacement.
- Do not use any hard drive that has been used in another TeraStation/LinkStation or another computer as a replacement drive. If you do, data on the unit may be damaged or lost.
- Do not change the order of the hard drives in the TeraStation. For example, pulling the top hard drive out and replacing it with the second hard drive may cause data on the unit to be damaged or lost.

Configuration - Using the Factory Default (RAID5, RAID10, or RAID1 with Shutdown upon RAID Array Failure Disabled)

This section describes the process of replacing a hard drive while the TeraStation is still ON. To replace the failed hard drive:

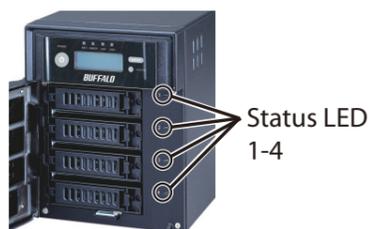
- 1** Open the front cover with the key that comes with this unit.



- 2** Push the cartridge tab of the failed hard drive (denoted by the solid red status LED) to the left and pull it out toward the front of the unit.



Hard drives without red status LEDs lit are still ON. Do not unplug or remove them. If you do so, data may be lost or the TeraStation may malfunction.



- 3** Pull out the hard drive with the cartridge and remove it from the TeraStation.



- 4** Insert the OP-HD series hard drive (sold separately) into the empty slot from Step 3.

Insert it while the tab is still open.



- 5** Push the drive into the TeraStation and push the tab towards the back of the TeraStation until you hear a clicking sound.



- 6** When the replacement hard drive is recognized, the red (or amber) status LED will flash and the front screen of the TeraStation will display the message, "Press FuncSW I31 New disk (any number from 1 to 4) ready."

- 7** Press and hold the FUNCTION button on the front of the TeraStation for 3 seconds (until it beeps). The TeraStation will start rebuilding RAID automatically.



Function Button

- * It takes about 5 minutes before the message "RAID I18 ARRAY (either 1 or 2) Rebuilding" is displayed.

All data on the newly installed OP-HD series hard drive will be erased during this process.

You have now completed the hard drive replacement process.

Hard Drive Replacement Examples

Configuration – RAID5, RAID10, or RAID1 with Shutdown upon RAID Array Failure Enabled

This section describes the process of replacing a hard drive while the TeraStation is off. To replace the failed hard drive:

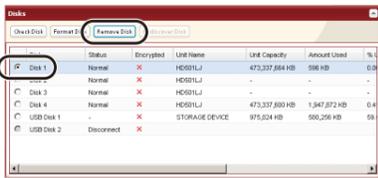
- 1 Open the front cover with the key included in this package.
- 2 Push the cartridge tab of the failed hard drive (denoted by the solid red status LED) to the left and pull it out toward the front of the unit.
- 3 Pull out the hard drive with the cartridge and remove it from the TeraStation.
- 4 Install the OP-HD series hard drive with the cartridge (sold separately) into the empty slot from Step 3.
- 5 Press the power button on the TeraStation to turn it ON.
- 6 When the replacement hard drive is recognized, the red (or amber) status LED will flash and the front screen of the TeraStation will display the message, "Press FuncSW I31 New disk (any number from 1 to 4) ready."
- 7 Press and hold the FUNCTION button on the front of the TeraStation for 3 seconds (until it beeps). The TeraStation will start rebuilding RAID automatically.
 - * It takes about 5 minutes before the message "RAID I18 ARRAY (either 1 or 2) Rebuilding" is displayed.

All data on the newly installed OP-HD series hard drive will be erased during this process.

You have now completed the hard drive replacement process.

Configuration – RAID0 and Normal Mode

If the TeraStation is set to RAID0 or Normal mode, hard drives do not automatically turn off in the event of a malfunction. The status LED will be flashing red or amber. Please perform the removal process on the Web Admin of the TeraStation before replacing the hard drive (you can replace a hard drive while the TeraStation is ON). This section describes the process of hard drive replacement while the TeraStation is still ON.

- 1 Click [System]-[Storage] on the Web Admin of the TeraStation.
- 2  (1) Select the hard drive with the flashing red (or amber) status LED.
(2) Click [Remove Disk].
- 3 The flashing status LED will turn to a solid red (or amber).
- 4 Open the front cover with the key included in this package.
- 5 Push the cartridge tab of the failed hard drive (denoted by the solid red status LED) to the left and pull it out toward the front of the unit.

Hard drives without red status LEDs lit are still ON. Do not unplug or remove them. If you do so, data may be lost or the TeraStation may malfunction.

- 6 Pull out the hard drive with the cartridge and remove it from the TeraStation.
- 7 Insert the OP-HD series hard drive with the cartridge (sold separately) into the empty slot from Step 6.
- 8 Push the drive into the TeraStation and push the tab towards the back of the TeraStation until you hear a clicking sound.

9 For RAID0

When the replacement hard drive is recognized, the red (or amber) status LED will flash and the front screen of the TeraStation will display the message, "Set from Web I32 New Disk (any number from 1 to 4) Ready."

Select [System]-[Storage]-[RAID Array] in the Web Admin of the TeraStation and click [Delete RAID Array].

Select the replacement hard drive by navigating to [System]-[Storage]-[Disks] and click [Format Disk] to format the new drive. Configure RAID mode by selecting [System]-[Storage]-[RAID Array] after formatting the hard drive.

* If a hard drive malfunctions in RAID0, all data on the RAID array will be lost.

For Normal Mode

When the replacement hard drive is recognized, the red (or amber) status LED will flash and the front screen of the TeraStation will display the message, "Press FuncSW I31 New Disk (any number from 1 to 4) Ready."

Press and hold the FUNCTION button on the front of the TeraStation for 3 seconds (until it beeps). The hard drive will be formatted automatically and the drive will be ready to use as a normal disk.

All data on the newly installed OP-HD series hard drive will be erased during this process.

You have now completed the hard drive replacement process.

* All of the settings for the shared folders (such as access restrictions) will be erased after removing the internal hard drive.

Configuration – Replacement by Hot Spare in RAID5 or RAID1

If Hot Spare settings are enabled in RAID5 or RAID1 mode and you have a spare drive in the TeraStation, a malfunctioning hard drive is replaced by the spare disk automatically and the RAID array is rebuilt. When the system starts to rebuild RAID, the status LED is still solid red. This section describes the replacement process for a hard drive while the TeraStation is still ON.

To replace the failed hard drive:

- 1 Open the front cover with the key included in this package.
- 2 Push the cartridge tab of the failed hard drive (denoted by the solid red status LED) to the left and pull it out toward the front of the unit.

Hard drives without red status LEDs lit are still ON. Do not unplug or remove them. If you do so, data may be lost or the TeraStation may malfunction.
- 3 Pull out the hard drive with the cartridge and remove it from the TeraStation.
- 4 Install the OP-HD series hard drive with the cartridge (sold separately) into the empty slot from Step 3.
- 5 Push the drive into the TeraStation and push the tab toward the back of the TeraStation until you hear a clicking sound.
- 6 When the replacement hard drive is recognized, the red (or amber) status LED will flash and the front screen of the TeraStation will display the message, "Press FuncSW I31 New Disk (any number from 1 to 4) Ready."
- 7 Press and hold the FUNCTION button on the front of the TeraStation for 3 seconds (until it beeps). The replacement hard drive is automatically registered as a spare disk.
 - * If you want to use the replacement disk as a normal drive rather than a spare disk, navigate to [System]-[Storage]-[RAID Array] on the Web Admin of the TeraStation, select the new drive, and click [Set to a normal drive].

All data on the newly installed OP-HD series hard drive will be erased during this process.

You have now completed the hard drive replacement process.

Replacing a non-malfunctioning hard drive (the red or amber status LED is not illuminated or flashing)

Do not replace a hard drive which is not malfunctioning.

If you have to replace a hard drive with a new one, use the removal procedure in the Web Admin of the TeraStation. This process is described in the **Configuration – RAID0 and Normal Mode** section. After you make sure the status LED is solid red, you may replace the hard drive. If you are using RAID5, RAID1, or RAID10, rebuild the RAID array. If you are using RAID0, delete the RAID array. If you are using normal mode, format the hard drive.

* If you are operating in Normal Mode, all data on that hard drive will be deleted after performing this procedure. You will not be able to use the TeraStation until you format the hard drive.

* If you are using RAID5, RAID1, or RAID10, the RAID array and new drive will be in degrade mode after performing this operation. Also you cannot use the TeraStation until you format the replacement drive.

* If you remove more than one drive at the same time, all data on the RAID array will be lost regardless of which RAID mode (RAID5, RAID1, or RAID10) the TeraStation is in. If you wish to replace more than one hard drive, you must perform the replacement process for each new drive separately.