



Key Facts for Replacing FlashSystem Battery Modules to Prevent System Outage

IMPORTANT: FlashSystem Battery Replacement procedures have been revised and may change frequently. Read the procedure described in the Knowledge Center before starting a replacement. There are important steps required prior to any battery replacement on a FlashSystem enclosure: <https://ibm.biz/Bd2DZy>. If you cannot access the instructions, please contact IBM Support.

CAUTION: The battery contains lithium and can explode if not properly used, handled, or disposed of. Do not throw or immerse the battery into water. Do not heat the battery to more than 100°C (212°F) or attempt to repair or disassemble it.

Attention: Ensure that the following requirements are met for battery module replacement.

- At least one good (**online or degraded**) battery must be installed for the system to continue processing I/O. The system goes into a service state if either both batteries are not healthy or sufficiently charged or if one battery is removed and the other installed battery is not healthy or online. Once in service state, the system stops processing I/O and access to data is denied. Data is inaccessible and the system remains in service state until there is one good, sufficiently charged battery installed.
- Before replacing a battery, enter the storage enclosure management GUI and run the battery fix procedures. Any component replacement must be done as directed in these fix procedures to avoid potential loss of data or access to data.
- Never replace both batteries at once. Battery modules contain a "quorum" device which stores multiple copies of system configuration data. One functional installed battery is required to maintain this data. If both batteries require replacement, do so while the system is operational, and one at a time, so that the configuration data on the old battery can be copied to the replacement battery.
- Never swap batteries with other systems unless instructed to do so by technical support.

Battery end of life replacements (4 years)

Warning: Never re-seat a battery that is offline unless you are directed to do so by IBM Support. If there is a problem with a replacement battery, the enclosure should NOT BE REBOOTED, nor should the power cables be removed for any reason. Escalate the problem to PFE.

- Ensure that both batteries have at least 2 more days of life remaining. A warning, with 120 days prior to the battery's end-of-life, appears in the system event log with a time stamp. If there is any question of how many days are remaining for a battery's end of life, call IBM Support.
- Use the fix procedures in the GUI event log or the provided IBM Support action plan to determine the proper replacement order of the batteries.
- A failed battery has a flashing or solid amber fault LED. If *both* of the batteries have failed, or if it is not clear which battery to replace, *stop* and contact IBM Support.

Important: For the first 8 - 30 minutes after installation of a battery, the battery status shown with the CLI, GUI, and LEDs can be incorrect until battery initialization is complete. Removing either battery before the replacement battery is initialized can cause I/O to stop.

- After replacing a battery, at least 1 battery must have a status of "**online**" or "**degraded**" and a "charging_status" of "**idle**" or "**charging**." Verify this status using the CLI command "Isenclosurebattery" or by hovering over the battery module on the GUI system view. It can take up to 3-5 hours before the new battery shows "**online**" as the replacement battery is being initialized and charged.
- Wait until the new battery is online before replacing the other battery. The GUI fix procedure may show that the battery is offline. Verify the battery status using the CLI or the battery image on the GUI main page.

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