

SanDisk Lightning Gen II SSDs Fail After 40,000 Hours



ALERT! MANDATORY P406 firmware upgrade to SanDisk Lightning Gen II SSDs prevents data loss.

Issue Summary

Western Digital reports that SanDisk Lightning Gen II solid state drives (SSDs) in the Ultra™, Ascend™, and Eco™ families will fail after 40,000 power-on hours. This occurs on drives running firmware versions prior to P406. If a drive experiences this issue, **data on the drive will likely be lost.**

Affected Products

Drives affected by this issue are listed in the table below.

SanDisk/WD Model Number	Capacity	Sector	Carrier	DDN Item Number	DDN Part Number (RMA)
SanDisk Lightning Gen II Ultra (write-intensive)					
LT0200WM or SDLTMDKW-200G-5Cxx	200 GB	4Kn	SS7000	89-01288-200	S07W0020224NDD5
			SS8460	89-01289-200	S08W0020224NDD5
LT0400WM or SDLTMDKW-400G-5Cxx	400 GB	4Kn	SS7000	89-01288-400	S07W0040224NDD5
			SS8460	89-01289-400	S08W0040224NDD5
LT0800WM or SDLTMCKW-800G-5Cxx	800 GB	4Kn	SS7000	89-01288-800	S07W0080224NDD5
			SS8460	89-01289-800	S08W0080224NDD5
SanDisk Lightning Gen II Ascend (mixed-use)					
LT0200MO or SDLTODKM-200G-5Cxx	200 GB	Any	Any	Not sold by DDN	Not sold by DDN
LT0400MO or SDLTODKM-400G-5Cxx	400 GB	4Kn	SS7000	89-01281-400	S07M0040224NDD3
			SS8460	89-01282-400	S08M0040224NDD3
			SFA14K	89-01284-400	S01M0040224NDD3
		512n	SS7000	89-01314-400	S07M0040225NDD3
			SS8460	89-01315-400	S08M0040225NDD3
			SFA14K	89-01322-400	S01M0040225NDD3

SanDisk/WD Model Number	Capacity	Sector	Carrier	DDN Item Number	DDN Part Number (RMA)
LT0800MO or SDLTODKM-800G-5Cxx	800 GB	4Kn	SS7000	89-01281-800	S07M0080224NDD3
			SS8460	89-01282-800	S08M0080224NDD3
			SFA14K	89-01284-800	S01M0080224NDD3
		512n	SS7000	89-01314-800	S07M0080225NDD3
			SS8460	89-01315-800	S08M0080225NDD3
			SFA14K	89-01322-800	S01M0080225NDD3
LT1600MO or SDLTOCKM-016T-5Cxx	1.6 TB	4Kn	SS7000	89-01281-1R6	S07M0160224NDD3
			SS8460	89-01282-1R6	S08M0160224NDD3
			SFA14K	89-01284-1R6	S01M0160224NDD3
		512n	SS7000	89-01314-1R6	S07M0160225NDD3
			SS8460	89-01315-1R6	S08M0160225NDD3
			SFA14K	89-01322-1R6	S01M0160225NDD3
SanDisk Lightning Gen II Eco (read-intensive)					
LT0800RO or SDLTODKR-800G-5Cxx	800 GB	4Kn	SS7000	89-01285-800	S07R0080224NDD4
			SS8460	89-01286-800	S08R0080224NDD4
			SFA14K	89-01287-800	S01R0080224NDD4
		512n	SS7000	89-01318-800	S07R0080225NDD4
			SS8460	89-01319-800	S08R0080225NDD4
LT1600RO or SDLTOCKR-016T-5Cxx	1.6 TB	4Kn	SS7000	89-01285-1R6	S07R0160224NDD4
			SS8460	89-01286-1R6	S08R0160224NDD4
			SFA14K	89-01287-1R6	S01R0160224NDD4
		512n	SS7000	89-01318-1R6	S07R0160225NDD4
			SS8460	89-01319-1R6	S08R0160225NDD4

Resolution and Workaround

Firmware version P406 from Western Digital resolves this issue, provided it is loaded on the drive before 40,000 power-on hours are reached. **Upgrade is MANDATORY** for all DDN customers who have the affected Western Digital/SanDisk drives installed in their equipment. Please contact DDN Support immediately to obtain the patch firmware, an upgrade plan, and installation assistance.

Until the P406 firmware is loaded on the affected drives, DDN strongly recommends that users maintain a regular backup schedule to reduce the likelihood of data loss.

Also be aware of the operating time accruing on these drives. Note that 40,000 power-on hours is equivalent to about 4 years 6 months 27 days. Drives installed together will likely fail together.

Drive firmware upgrades may be performed offline with any version of SFA OS. Versions 11.8.1 or later in the declustered RAID (DCR) series, and versions 3.1.4.0 or later in the legacy RAID series, support online upgrades.

Determining Whether Your Storage System Contains Affected Drives

To determine whether your SFA storage contains drives affected by the 40,000-hour issue, run the `show pd *` command at the SFA command line. You will see a report similar to the following:

```
RAID[0]$ show pd

*****
Physical Disk(s)
*****
Enclosure|                               |S|                               |Health|Block|
Idx|Pos|Slot|Vendor | Product ID |Type|E|Capacity | RPM|Revision|Serial Number|Pool|State| Idx|State |Size |
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
1  1  1  HGST      HUC156030CS4201  SAS Y 279.5 GiB 15K BDB0 0TV3JHHJ 1 GOOD 8 NORM 4K
1  1  2  HGST      HUC156030CS4201  SAS Y 279.5 GiB 15K BDB0 0TV3GA4J 1 GOOD 26 NORM 4K
1  1  3  HGST      HUC156030CS4201  SAS Y 279.5 GiB 15K BDB0 0TV2GTPL 1 GOOD 10 NORM 4K
1  1  4  HGST      HUC156030CS4201  SAS Y 279.5 GiB 15K BDB0 0TV3JGVJ 1 GOOD 57 NORM 4K
1  1  5  SanDisk  LT0400MO          SAS  372.6 GiB  SSD P405 42568464 UNAS GOOD 2 READY + 4K
1  1  6  SanDisk  LT0400MO          SAS  372.6 GiB  SSD P405 42356212 UNAS GOOD 43 READY 4K
1  1  7  SanDisk  LT0400MO          SAS  372.6 GiB  SSD P405 42567668 UNAS GOOD 61 READY 4K
1  1  8  SanDisk  LT0400MO          SAS  372.6 GiB  SSD P405 42568248 UNAS GOOD 7 READY 4K
1  1  9  HGST      HUSMR7680BDP301 NVME 745.2 GiB  SSD KNGND100 SDM00002D17 0 GOOD 68 NORM + 4K
1  1 10  HGST      HUSMR7680BDP301 NVME 745.2 GiB  SSD KNGND100 SDM00002D2C UNAS GOOD 80 READY 4K
:
:
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NUM| Vendor | Product ID |Type|Capacity | RPM|Revision|Block Size|
-----|-----|-----|-----|-----|-----|-----|-----|
Found: 11 HGST      HUC156030CS4201  SAS 279.5 GiB 15K BDB0 4K
Found: 2  HGST      HUC156060CS4201  SAS 558.9 GiB 15K BDB0 4K
Found: 7  HGST      HUC101845CS4201  SAS 419.2 GiB 10K BDB0 4K
Found: 13 SanDisk  LT0400MO          SAS 372.6 GiB  SSD P405 4K
Found: 2  HGST      HUSMR7680BDP301  NVME 745.2 GiB  SSD KNGND100 4K
Found: 13 HGST      HUH728080AL4201  SAS 7.3 TiB 7.2K B7J0 4K
Found: 16 HGST      HUS726060AL4211  SAS 5.5 TiB 7.2K B7J0 4K
Found: 2  HGST      HUS726020AL4210  SAS 1.8 TiB 7.2K A7J0 4K
Found: 14 HGST      HUS726060AL4211  SAS 5.5 TiB 7.2K BD05 4K

Number of distinguished models: 10

Total Physical Disks:      80
Total Assigned Disks:     12
Total Unassigned Disks:   68
  Total SAS Disks:        78
  Total NVME Disks:       2
Total Member State Normal: 12
```

Drives with all the following attributes *must* be upgraded to firmware version P406 to prevent data loss:

- A value in the **Product ID** column that matches any **SanDisk/WD Model Number** entry in the table on pages 1-2
- Any value in the **Revision** column prior to P406

Contacting DDN Technical Support

Please contact DDN Technical Support at any time if you have questions or need assistance. Support can be reached by phone, by email, or on the web as listed below.

Web

DDN Community Support Portal <https://community.ddn.com/login>
 Portal Assistance webportal.support@ddn.com

Telephone

DDN Support Worldwide Directory <https://www.ddn.com/support/global-services-overview/>

Email

Support Email

support@ddn.com

Bulletins & Notices

Support Bulletins

End-of-Life Notices

Release Notes

Subscription Requests

<http://www.ddn.com/support/technical-support-bulletins>

<http://www.ddn.com/support/end-of-life-notices>

<https://community.ddn.com/login>

support-tsb@ddn.com