# Solidigm™ CLI Storage Tool

## Release Notes

September 2024

Revision 017

Solidigm Confidential

SOLIDIGM™

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# Revision History

| Revision | Software Version | Description | Revision Date |
|---|---|---|---|
| 001 | 1.0 | This is the first revision of the Solidigm™ Storage Tool (SST).<br>This version of the tool contains below fixes; and the functionality of many current tools, see the User Guide for more information, with support for Intel® / Solidigm™ client and data center SSD. | March 2022 |
| 002 | 1.1 | • This revision adds a firmware update for 670p, 665p, 660p, 760, Pro 7600p, Pro 6000p, E6100p P3100 and P4101.<br>• CVE document update (see Solidigm Advisory SOLIDIGM-SA-00563) | May 2022 |
| 003 | 1.1 | Documentation Correction | May 2022 |
| 004 | 1.2 | Firmware update for D7-P5510, D5-P5316, D3-S4520 / S4620 | July 2022 |
| 005 | 1.3 | • Firmware update for D3-S4510 / S4610<br>• Added ability to save Identify data as binary<br>• Various bug fixes and small enhancements | Sept. 2022 |
| 006 | 1.4 | • Added ability for workload tracker<br>• Ended ESXi 6.x support due to the end of support from VMWare<br>• Various bug fixes and small enhancements | Dec. 2022 |
| 007 | 1.5 | • Firmware update for D3-S4510 / S4610<br>• Various bug fixes and small enhancements | Jan. 2023 |
| 008 | 1.6 | • Firmware update for P41 Plus | Feb. 2023 |
| 009 | 1.7 | • Firmware update for D3-S4520 / S4620 and D7-P5520 / P5620<br>• Added ability to bypass full system device scan when user provides device path<br>• Fixed some SST command issues on Microsoft NVMe Inbox Driver<br>• Various bug fixes and small enhancements | March 2023 |
| 010 | 1.8 | • Fixed compatibility issue for Latency Monitor on Solidigm NVMe driver<br>• Enabled additional OCP Smart attributes | May 2023 |
| 011 | 1.9 | • Firmware update for D3-S4510 / S4610, D5-P5316 and D5-P5430<br>• Various bug fixes and small enhancements | July 2023 |
| 012 | 1.10 | • Firmware update for D7-P5510<br>• Added support for ESXi 8.0 Update 1<br>• Fixed the issue in files getting updated after smart logs on Linux system<br>• Removed reboot requirement for installing VIB in ESXi<br>• Various bug fixes and small enhancements | Sept. 2023 |

| Revision | Software Version | Description | Revision Date |
|---|---|---|---|
| 013 | 1.11 | • Firmware update for D7-P5510<br>• Added support for ESXi 8.0 Update 1<br>• Fixed the issue in files getting updated after smart logs on Linux system<br>• Removed reboot requirement for installing VIB in ESXi<br>• Various bug fixes and small enhancements | Dec. 2023 |
| 014 | 1.12 | • Firmware update for selected D7-P5810<br>• Fix for firmware update not available for few D7-P4511 models<br>• Fixed issue of devices enumerating as SCSI in RHEL 7<br>• Added support for new models for various products<br>• Various small bug fixes and enhancements | March 2024 |
| 015 | 1.13 | • Firmware Update for D5-P5336 Series to 5CV10302<br>• Firmware Update for D7-P5500 / P5600 Series to 2CV10300<br>• Added additional model support for S4510 series<br>• Added support for Hardware Component Log page<br>• Added support for Telemetry Data Area 4<br>• Added ability to stop in-progress Abort command<br>• Product family updated for various models<br>• Fix for Read Scan failure command in Windows<br>• Fix for "unexpected sense" error in S4520 series with RAID configuration | June 2024 |
| 016 | 1.14 | • Firmware Update for D7-P5510 OPAL SKU to JCV10501<br>• Firmware Update for D7-P5510 Non-OPAL SKU to JCV10500<br>• Firmware Update for D7-P5520 / P5620 to 9CV10490<br>• Updated Media Wearout messaging<br>• Removed case sensitivity for commands and log names<br>• Updated Status Messages with more clarity<br>• Updated to latest library from Broadcom for 9500 Series<br>• Added support for Broadcom 9600 Series MegaRAID (Beta)<br>• Changed SMART Warning Composite Temperature Time flagging from Failure to Alert<br>• Changed PLL Lock Loss flagging from Failure to Alert<br>• Various small bug fixes, enhancements and model support updates | Aug. 2024 |
| 017 | 1.15 | • Firmware update for D3-S4520 / S4620 to 7CV10141<br>• Updated to latest library from Broadcom for 9600 Series<br>• Various small bug fixes, enhancements and model support updates | Sept. 2024 |

*Note:* If you purchased your Intel® / Solidigm™ SSD from an OEM, your firmware version may have a different naming sequence. Contact your local OEM representative for the latest firmware revisions.

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# 1 Solidigm Data Center SSD Products Revision History

## Table 1: Solidigm™ D7-P5336

| Date | Revision | Description |
|---|---|---|
| June 2024 | 5CV10302 | • Mitigates the following issues besides come other minor/corner case fixes:<br>- Firmware Downgrade Counter not incrementing on first downgrade after reset<br>- High queue-depth sequential temporary performance degradation after long idle periods<br>- Failure to commit same firmware as active when using firmware download and activate command with activate action = 3<br>- FIPS/OPAL drives only: incorrect parameters returned when traversing TCG ACE table UIDs via TableNext method |

## Table 2: Solidigm™ DC-P5500 / P5600

| Date | Revision | Description |
|---|---|---|
| June 2024 | 2CV10300 | • Mitigates the following issues besides come other minor/corner case fixes:<br>- Environment that does not Implement Required Command Ordering Enforcement May Cause Drive to Return Last Data Written to NAND<br>- Incorrect NMVe MI Response Message Status During Drive's Time To Ready<br>- Following Ungraceful Shutdown, admin / IO commands may Timeout After Config Ready Bit is Set |

## Table 3: Solidigm™ D7-P5810

| Date | Revision | Description |
|---|---|---|
| March 2024 | 1CV10200 | 1.6TB SKU only<br>• Mitigates the following issues besides some other minor/corner case fixes:<br>- Support for 1.6TB SKU |

## Table 4: Solidigm™ D7-P5520 / P5620 (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| Aug. 2024 | 9CV10490 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- Admin Command Timeout During Read Intensive Workloads<br>- Drive May Fail to Enumerate Following Unplanned Power Cycle<br>- Failure of MOS-FET Component Leads to Higher Drive Failure Rate |

## Table 4: Solidigm™ D7-P5520 / P5620 (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| Dec. 2023 | 9CV10450 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- NVMe-MI Basic Throttle State Value May Persist After Exiting Throttling State<br>- Power Management Set Feature Command sent Over NVMe MI Causes Drive to go into Disable Logical Mode<br>- Vendor Unique Feature Identifier C6h Not Reflecting Power Mode Setting Changes Made with Feature Identifier 02h<br>- Drive May Fail to enumerate During Drive Boot Up Sequence<br>- PCIe Link up Sequence May Fail During AC/DC Cycle |
| March 2023 | 9CV10410 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- Non-Graceful Shutdown Counter Not Incrementing During Unsafe Shutdowns within DEh Log Page<br>- UEFI Driver Health Status GetHealthStatus Returning Unsupported<br>- PCIe Unsupported Request Errors Observed by Host during Drive Power Cycle<br>- Drive De-Enumeration During PCIe Link Up Sequence<br>- Intermittent Failure During Drive Boot Sequence Causes No Drive Attached<br>- Incorrect NVMe MI Response Message Status During Drive's Time to Ready |

## Table 5: Solidigm™ D7-P5510 (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| Aug. 2024 | OPAL:<br>JCV10501<br><br>Non-OPAL:<br>JCV10500 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- Failure of a MOS-FET component leads to failure in the power delivery circuitry of the drive<br>- I/O error exception after NVMe reset command<br>- Drive may fail to enumerate during boot up sequence<br>- Telemetry check may return wrong value for Firmware revision |
| Dec. 2023 | JCV104044 | OPAL drives only:<br>• Mitigates the following issues besides some other minor/corner case fixes:<br>- Allow the Opal drive to undergo an MR3 update without the drive becoming locked<br>- Adjustments to wear levelling mechanism<br>- Mitigate issue that cause drive to return last data written to NAND |
| Sept. 2023 | JCV10400 | Non-OPAL drives only:<br>• Mitigates the following issues besides some other minor/corner case fixes:<br>- Environment that does not Implement Required Command Ordering Enforcement may cause drive to return last data written to NAND<br>- Drive may encounter bad ctx 3014 due to wear leveling |
| July 2022 | JCV10300 | • NAND Read Disturb Impact Due to Unique NAND Background Activity Fix<br>• BM459 Assert No Available Band/Erase Block Fix<br>• Other various fixes and improvements |

## Table 6: Solidigm™ D5-P5430

| Date | Revision | Description |
|---|---|---|
| July 2023 | 6CV10110 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- Environment that does not Implement Required Command Ordering Enforcement may cause drive to return last data written to NAND<br>- Host OS fails to boot with the Vendor Defined Firmware option |

## Table 7: Solidigm™ D5-P5316 (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| July 2023 | ACV10340 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- Environment that does not Implement Required Command Ordering Enforcement may cause drive to return last data written to NAND<br>- PCIe unsupported request errors observed by host during drive power cycle |
| July 2022 | ACV10310 | • Add additional support for OPAL 2.0, NVMe 1.4c, NVMe-MI 1.1c, and OCP 0xC0 Log Page |

## Table 8: Solidigm™ D3-S4520 / S4620 (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| Sept. 2024 | 7CV10141 | • Mitigates the following issues besides some other minor/corner case fixes<br>- Failure of a MOS-FET component leads to failure in the power delivery circuitry of the drive<br>- Drive hang after uncorrectable read |
| Dec. 2023 | 7CV10130 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- SMART return status 2CF4H, and SMART attribute AFh and EBh = 1 after ~2 years storage without power, indicating PLI capacitor test failure (U.2 FF only)<br>- Drive did not correctly throttle when end of life defect threshold was reached<br>- Unable to format and possible de-enumeration during installing image operation containing crypto scramble command |
| March 2023 | 7CV10120 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- SMART attribute AFh and EBh was going to 1 after ~2years of storage without power, when the PLI capacitor was in fact healthy<br>- A non-warranty SMART attribute C5h (pending sector count) was increasing in a corner case scenario |
| July 2022 | 7CV10111 | • Mitigates the following issues besides some other minor/corner case fixes:<br>- Command timeouts CI054, sometimes followed by ASSERT_SR002 and The SATA link going down.<br>- AFh Smart attribute accidentally drops from 100 to 1 upon power on or power cycle. False failure of the cap test. However, nothing is/was wrong with the capacitor.<br>- SMART attribute B7h SATA downshift counter not updating accurately when a SATA downshift occurs.<br>- SSD warm reboot issue in RAID mode: BIOS hangs and drive not enumerating after OS install and warm reset in RAID mode |

## Table 9: Solidigm™ D3-S4510 / S4610 (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| July 2023 | XCV10165 (2.5″) | • Follow up fix for SMART attributes (AFh, EBh) incorrectly triggered after long-term storage (Only 2.5″ SKUs are impacted)<br>• SMART return status fix |
| Jan. 2023 | XCV10160 (2.5″) | • Mitigates the following issues:<br>- SMART attributes (AFh, EBh) incorrectly triggered after long-term storage (Only 2.5″ SKUs are impacted) |
| Sept. 2022 | XC311151 (M.2)<br>XCV10151 (2.5″) | • Mitigates the following issues:<br>- Occasional IO timeout under heavy workloads potentially leading to drive drops |

## Table 10: Solidigm™ DC P3100 (formerly Intel®)

| Date | Revision | |
|---|---|---|
| May 2022 | 119D | • Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

## Table 11: Solidigm™ DC P4101 (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 009D | • Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

# 2 Solidigm Client SSD Products Revision History

## Table 12: Solidigm™ P41 Plus

| Date | Revision | Description |
|---|---|---|
| Feb. 2023 | 002C | • Fixes possible early disablement of DSLC<br>• Fixes SMART Health info corruption and NDA that occasionally occur due to unexpected power loss<br>• Improves drive power on to ready time during certain rebuild conditions after unexpected power loss<br>• Corrects Verify Command missing in NVMe Commands Supported and Effects Log as reported by drive<br>• Fixes occasional drive hang experienced during OS imaging process in WinPE environment |

## Table 13: Solidigm™ 660p (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 005C | • Potential BSOD during Power State Transition<br>• Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

## Table 14: Solidigm™ 665p (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 002C | • Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

## Table 15: Solidigm™ 670p (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 003C | • Fix to thermal throttling Flow<br>• Fix for Null pointers<br>• Block SID Fix<br>• Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

## Table 16: Solidigm™ 760p (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 006C | • Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

## Table 17: Solidigm™ 7600p (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 006P | • Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

## Table 18: Solidigm™ 6000p (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 132P | • Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

# 3 Solidigm Other SSD Products Revision History

## Table 19: Solidigm™ E 6100p (formerly Intel®)

| Date | Revision | Description |
|---|---|---|
| May 2022 | 006E | • Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563) |

# 4 List of Solidigm SSD Products

Please check all supported Solidigm™ SSDs (formerly Intel®) in the following link:

https://www.solidigm.com/us/en/support-page/product-doc-cert/ka-00099.html