



# Solidigm™ CLI Storage Tool

## Release Notes

June 2024

Revision 015

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). 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              | <ul style="list-style-type: none"> <li>This revision adds a firmware update for 670p, 665p, 660p, 760, Pro 7600p, Pro 6000p, E6100p P3100 and P4101.</li> <li>CVE document update (see Solidigm Advisory SOLIDIGM-SA-00563)</li> </ul>  | 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              | <ul style="list-style-type: none"> <li>Firmware update for D3-S4510 / S4610</li> <li>Added ability to save Identify data as binary</li> <li>Various bug fixes and small enhancements</li> </ul>   | Sept. 2022    |
| 006      | 1.4              | <ul style="list-style-type: none"> <li>Added ability for workload tracker</li> <li>Ended ESXi 6.x support due to the end of support from VMWare</li> <li>Various bug fixes and small enhancements</li> </ul>  | Dec. 2022     |
| 007      | 1.5              | <ul style="list-style-type: none"> <li>Firmware update for D3-S4510 / S4610</li> <li>Various bug fixes and small enhancements</li> </ul>  | Jan. 2023     |
| 008      | 1.6              | <ul style="list-style-type: none"> <li>Firmware update for P41 Plus</li> </ul>  | Feb. 2023     |
| 009      | 1.7              | <ul style="list-style-type: none"> <li>Firmware update for D3-S4520 / S4620 and D7-P5520 / P5620</li> <li>Added ability to bypass full system device scan when user provides device path</li> <li>Fixed some SST command issues on Microsoft NVMe Inbox Driver</li> <li>Various bug fixes and small enhancements</li> </ul>     | March 2023    |
| 010      | 1.8              | <ul style="list-style-type: none"> <li>Fixed compatibility issue for Latency Monitor on Solidigm NVMe driver</li> <li>Enabled additional OCP Smart attributes</li> </ul>  | May 2023      |
| 011      | 1.9              | <ul style="list-style-type: none"> <li>Firmware update for D3-S4510 / S4610, D5-P5316 and D5-P5430</li> <li>Various bug fixes and small enhancements</li> </ul>   | July 2023     |
| 012      | 1.10             | <ul style="list-style-type: none"> <li>Firmware update for D7-P5510</li> <li>Added support for ESXi 8.0 Update 1</li> <li>Fixed the issue in files getting updated after smart logs on Linux system</li> <li>Removed reboot requirement for installing VIB in ESXi</li> <li>Various bug fixes and small enhancements</li> </ul> | Sept. 2023    |

| Revision | Software Version | Description   | Revision Date |
|----------|------------------|---|---------------|
| 013      | 1.11             | <ul style="list-style-type: none"> <li>• Firmware update for D7-P5510</li> <li>• Added support for ESXi 8.0 Update 1</li> <li>• Fixed the issue in files getting updated after smart logs on Linux system</li> <li>• Removed reboot requirement for installing VIB in ESXi</li> <li>• Various bug fixes and small enhancements</li> </ul>   | Dec. 2023     |
| 014      | 1.12             | <ul style="list-style-type: none"> <li>• Firmware update for selected D7-P5810</li> <li>• Fix for firmware update not available for few D7-P4511 models</li> <li>• Fixed issue of devices enumerating as SCSI in RHEL 7</li> <li>• Added support for new models for various products</li> <li>• Various small bug fixes and enhancements</li> </ul>   | March 2024    |
| 015      | 1.13             | <ul style="list-style-type: none"> <li>• Firmware Update for DC P5336 Series to 5CV10302</li> <li>• Firmware Update for DC P5500 / P5600 Series to 2CV10300</li> <li>• Added additional model support for S4510 series</li> <li>• Added support for Hardware Component Log page</li> <li>• Added support for Telemetry Data Area 4</li> <li>• Added ability to stop in-progress Abort command</li> <li>• Product family updated for various models</li> <li>• Fix for Read Scan failure command in Windows</li> <li>• Fix for "unexpected sense" error in S4520 series with RAID configuration</li> </ul> | June 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 | <ul style="list-style-type: none"> <li>Mitigates the following issues besides come other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>Firmware Downgrade Counter not incrementing on first downgrade after reset</li> <li>High queue-depth sequential temporary performance degradation after long idle periods</li> <li>Failure to commit same firmware as active when using firmware download and activate command with activate action = 3</li> <li>FIPS/OPAL drives only: incorrect parameters returned when traversing TCG ACE table UIDs via TableNext method</li> </ul> </li> </ul> |

Table 2: Solidigm™ DC-P5500 / P5600

| Date      | Revision | Description   |
|-----------|----------|---|
| June 2024 | 2CV10300 | <ul style="list-style-type: none"> <li>Mitigates the following issues besides come other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>Environment that does not Implement Required Command Ordering Enforcement May Cause Drive to Return Last Data Written to NAND</li> <li>Incorrect NMVe MI Response Message Status During Drive's Time To Ready</li> <li>Following Ungraceful Shutdown, admin / IO commands may Timeout After Config Ready Bit is Set</li> </ul> </li> </ul> |

Table 3: Solidigm™ D7-P5810

| Date       | Revision | Description  |
|------------|----------|--|
| March 2024 | 1CV10200 | 1.6TB SKU only <ul style="list-style-type: none"> <li>Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>Support for 1.6TB SKU</li> </ul> </li> </ul> |

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

| Date      | Revision | Description   |
|-----------|----------|---|
| Dec. 2023 | 9CV10450 | <ul style="list-style-type: none"> <li>Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>NVMe-MI Basic Throttle State Value May Persist After Exiting Throttling State</li> <li>Power Management Set Feature Command sent Over NVMe MI Causes Drive to go into Disable Logical Mode</li> <li>Vendor Unique Feature Identifier C6h Not Reflecting Power Mode Setting Changes Made with Feature Identifier 02h</li> <li>Drive May Fail to enumerate During Drive Boot Up Sequence</li> <li>PCIe Link up Sequence May Fail During AC/DC Cycle</li> </ul> </li> </ul> |

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

| Date       | Revision | Description   |
|------------|----------|---|
| March 2023 | 9CV10410 | <ul style="list-style-type: none"> <li>• Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>- Non-Graceful Shutdown Counter Not Incrementing During Unsafe Shutdowns within DEh Log Page</li> <li>- UEFI Driver Health Status GetHealthStatus Returning Unsupported</li> <li>- PCIe Unsupported Request Errors Observed by Host during Drive Power Cycle</li> <li>- Drive De-Enumeration During PCIe Link Up Sequence</li> <li>- Intermittent Failure During Drive Boot Sequence Causes No Drive Attached</li> <li>- Incorrect NVMe MI Response Message Status During Drive's Time to Ready</li> </ul> </li> </ul> |

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

| Date       | Revision  | Description   |
|------------|-----------|---|
| Dec. 2023  | JCV104044 | OPAL drives only: <ul style="list-style-type: none"> <li>• Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>- Allow the Opal drive to undergo an MR3 update without the drive becoming locked</li> <li>- Adjustments to wear levelling mechanism</li> <li>- Mitigate issue that cause drive to return last data written to NAND</li> </ul> </li> </ul> |
| Sept. 2023 | JCV10400  | Non-OPAL drives only: <ul style="list-style-type: none"> <li>• Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>- Environment that does not Implement Required Command Ordering Enforcement may cause drive to return last data written to NAND</li> <li>- Drive may encounter bad ctx 3014 due to wear leveling</li> </ul> </li> </ul>                |
| July 2022  | JCV10300  | <ul style="list-style-type: none"> <li>• NAND Read Disturb Impact Due to Unique NAND Background Activity Fix</li> <li>• BM459 Assert No Available Band/Erase Block Fix</li> <li>• Other various fixes and improvements</li> </ul>   |

**Table 6: Solidigm™ D5-P5430**

| Date      | Revision | Description  |
|-----------|----------|--|
| July 2023 | 6CV10110 | <ul style="list-style-type: none"> <li>• Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>- Environment that does not Implement Required Command Ordering Enforcement may cause drive to return last data written to NAND</li> <li>- Host OS fails to boot with the Vendor Defined Firmware option</li> </ul> </li> </ul> |

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

| Date      | Revision | Description  |
|-----------|----------|--|
| July 2023 | ACV10340 | <ul style="list-style-type: none"> <li>Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>Environment that does not Implement Required Command Ordering Enforcement may cause drive to return last data written to NAND</li> <li>PCIe unsupported request errors observed by host during drive power cycle</li> </ul> </li> </ul> |
| July 2022 | ACV10310 | <ul style="list-style-type: none"> <li>Add additional support for OPAL 2.0, NVMe 1.4c, NVMe-MI 1.1c, and OCP 0xC0 Log Page</li> </ul>  |

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

| Date       | Revision | Description  |
|------------|----------|--|
| Dec. 2023  | 7CV10130 | <ul style="list-style-type: none"> <li>Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>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)</li> <li>Drive did not correctly throttle when end of life defect threshold was reached</li> <li>Unable to format and possible de-enumeration during installing image operation containing crypto scramble command</li> </ul> </li> </ul>  |
| March 2023 | 7CV10120 | <ul style="list-style-type: none"> <li>Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>SMART attribute AFh and EBh was going to 1 after ~2years of storage without power, when the PLI capacitor was in fact healthy</li> <li>A non-warranty SMART attribute C5h (pending sector count) was increasing in a corner case scenario</li> </ul> </li> </ul>  |
| July 2022  | 7CV10111 | <ul style="list-style-type: none"> <li>Mitigates the following issues besides some other minor/corner case fixes:                             <ul style="list-style-type: none"> <li>Command timeouts C1054, sometimes followed by ASSERT_SR002 and The SATA link going down.</li> <li>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.</li> <li>SMART attribute B7h SATA downshift counter not updating accurately when a SATA downshift occurs.</li> <li>SSD warm reboot issue in RAID mode: BIOS hangs and drive not enumerating after OS install and warm reset in RAID mode</li> </ul> </li> </ul> |

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

| Date      | Revision        | Description  |
|-----------|-----------------|--|
| July 2023 | XCV10165 (2.5") | <ul style="list-style-type: none"> <li>Follow up fix for SMART attributes (AFh, EBh) incorrectly triggered after long-term storage (Only 2.5" SKUs are impacted)</li> <li>SMART return status fix</li> </ul>   |
| Jan. 2023 | XCV10160 (2.5") | <ul style="list-style-type: none"> <li>Mitigates the following issues:                             <ul style="list-style-type: none"> <li>SMART attributes (AFh, EBh) incorrectly triggered after long-term storage (Only 2.5" SKUs are impacted)</li> </ul> </li> </ul> |

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

| Date       | Revision                          | Description   |
|------------|-----------------------------------|---|
| Sept. 2022 | XC311151 (M.2)<br>XCV10151 (2.5") | <ul style="list-style-type: none"> <li>• Mitigates the following issues:                             <ul style="list-style-type: none"> <li>- Occasional IO timeout under heavy workloads potentially leading to drive drops</li> </ul> </li> </ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 119D     | <ul style="list-style-type: none"> <li>• Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li> </ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 009D     | <ul style="list-style-type: none"> <li>• Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li> </ul> |



## 2 Solidigm Client SSD Products Revision History

Table 12: Solidigm™ P41 Plus

| Date      | Revision | Description   |
|-----------|----------|---|
| Feb. 2023 | 002C     | <ul style="list-style-type: none"> <li>Fixes possible early disablement of DSLC</li> <li>Fixes SMART Health info corruption and NDA that occasionally occur due to unexpected power loss</li> <li>Improves drive power on to ready time during certain rebuild conditions after unexpected power loss</li> <li>Corrects Verify Command missing in NVMe Commands Supported and Effects Log as reported by drive</li> <li>Fixes occasional drive hang experienced during OS imaging process in WinPE environment</li> </ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 005C     | <ul style="list-style-type: none"> <li>Potential BSOD during Power State Transition</li> <li>Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li> </ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 002C     | <ul style="list-style-type: none"> <li>Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li> </ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 003C     | <ul style="list-style-type: none"> <li>Fix to thermal throttling Flow</li> <li>Fix for Null pointers</li> <li>Block SID Fix</li> <li>Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li> </ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 006C     | <ul style="list-style-type: none"> <li>Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li> </ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 006P     | <ul style="list-style-type: none"><li>Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li></ul> |

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

| Date     | Revision | Description  |
|----------|----------|--|
| May 2022 | 132P     | <ul style="list-style-type: none"><li>Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li></ul> |

### 3 Solidigm Other SSD Products Revision History

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

| Date     | Revision | Description   |
|----------|----------|---|
| May 2022 | 006E     | <ul style="list-style-type: none"><li data-bbox="667 468 1393 499">• Mitigates security vulnerability (see <a href="#">Solidigm Advisory SOLIDIGM-SA-00563</a>)</li></ul> |

## 4 List of Solidigm SSD Products

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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>