



# Solidigm™ Storage Tool

## Release Notes

December 2024

Revision 019

**SOLIDIGM™**

# Contents

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1	Solidigm Data Center SSD Products Revision History.....	5
2	Solidigm Client SSD Products Revision History.....	9
3	Solidigm Other SSD Products Revision History.....	11
4	List of Solidigm SSD Products.....	12

# List of Tables

---

Table 1:	Solidigm™ D7-P5336.....	5
Table 2:	Solidigm™ DC-P5500 / P5600.....	5
Table 3:	Solidigm™ D7-P5810.....	5
Table 4:	Solidigm™ D7-P5520 / P5620 (formerly Intel®).....	5
Table 5:	Solidigm™ D7-P5510 (formerly Intel®).....	6
Table 6:	Solidigm™ D5-P5430.....	7
Table 7:	Solidigm™ D5-P5316 (formerly Intel®).....	7
Table 8:	Solidigm™ D3-S4520 / S4620 (formerly Intel®).....	7
Table 9:	Solidigm™ D3-S4510 / S4610 (formerly Intel®).....	8
Table 10:	Solidigm™ DC-P4510 / P4511 / P4610 / P4618 (formerly Intel®).....	8
Table 11:	Solidigm™ DC P3100 (formerly Intel®).....	8
Table 12:	Solidigm™ DC P4101 (formerly Intel®).....	8
Table 13:	Solidigm™ P41 Plus.....	9
Table 14:	Solidigm™ 660p (formerly Intel®).....	9
Table 15:	Solidigm™ 665p (formerly Intel®).....	9
Table 16:	Solidigm™ 670p (formerly Intel®).....	9
Table 17:	Solidigm™ 760p (formerly Intel®).....	9
Table 18:	Solidigm™ 7600p (formerly Intel®).....	10
Table 19:	Solidigm™ 6000p (formerly Intel®).....	10
Table 20:	Solidigm™ E 6100p (formerly Intel®).....	11

## 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 D5-P5336 Series to 5CV10302</li> <li>Firmware Update for D7-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
016	1.14	<ul style="list-style-type: none"> <li>Firmware Update for D7-P5510 OPAL SKU to JCV10501</li> <li>Firmware Update for D7-P5510 Non-OPAL SKU to JCV10500</li> <li>Firmware Update for D7-P5520 / P5620 to 9CV10490</li> <li>Updated Media Wearout messaging</li> <li>Removed case sensitivity for commands and log names</li> <li>Updated Status Messages with more clarity</li> <li>Updated to latest library from Broadcom for 9500 Series</li> <li>Added support for Broadcom 9600 Series MegaRAID (Beta)</li> <li>Changed SMART Warning Composite Temperature Time flagging from Failure to Alert</li> <li>Changed PLL Lock Loss flagging from Failure to Alert</li> <li>Various small bug fixes, enhancements and model support updates</li> </ul>	Aug. 2024
017	1.15	<ul style="list-style-type: none"> <li>Firmware update for D3-S4520 / S4620 to 7CV10141</li> <li>Updated to latest library from Broadcom for 9600 Series</li> <li>Various small bug fixes, enhancements and model support updates</li> </ul>	Sept. 2024
018	2.0	<ul style="list-style-type: none"> <li>Firmware Update for P41 Series to 004C</li> <li>Updated Architecture to support plug-in mechanism</li> <li>Added support for Solidigm D7-PS1010 Series</li> <li>Removed Firmware Updates for end of life products</li> </ul>	Sept. 2024

Revision	Software Version	Description	Revision Date
019	2.1	<ul style="list-style-type: none"> <li>Firmware update for D5-P5316 Series to ACV10360</li> <li>Firmware update for DC P4510, P4511, P4610, P4618 Series to VCV10394, VDV10194, VEV10194</li> <li>Added 003C to Firmware update eligibility for update to 004C for P41 Plus Series</li> <li>Fix for Telemetry dump issue for Ubuntu 22.04 Kernel 6.8</li> <li>Renamed dump option "ir" to "debuglogs" for more generic and future enhancements support</li> <li>Various small bug fixes, enhancements and model support updates</li> </ul>	Dec. 2024

**Note:** This document is applicable for CLI and GUI. However, since GUI is only available in Windows and has limited features, not all notes are applicable to GUI.

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.

All product plans, roadmaps, specifications, and product descriptions are subject to change without notice.

Nothing herein is intended to create any express or implied warranty, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, or any warranty arising from course of performance, course of dealing, or usage in trade.

The products described in this document may contain design defects or errors known as "errata," which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Contact your Solidigm representative or your distributor to obtain the latest specifications before placing your product order.

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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
Aug. 2024	9CV10490	<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>Admin Command Timeout During Read Intensive Workloads</li> <li>Drive May Fail to Enumerate Following Unplanned Power Cycle</li> <li>Failure of MOS-FET Component Leads to Higher Drive Failure Rate</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>
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
Aug. 2024	OPAL: JCV10501  Non-OPAL: JCV10500	<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>Failure of a MOS-FET component leads to failure in the power delivery circuitry of the drive</li> <li>I/O error exception after NVMe reset command</li> <li>Drive may fail to enumerate during boot up sequence</li> <li>Telemetry check may return wrong value for Firmware revision</li> </ul> </li> </ul>
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
Dec. 2024	ACV10360	<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>Mitigates security vulnerabilities</li> </ul> </li> </ul>
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>Failure of a MOS-FET component Leads to Higher Drive Failure Rate</li> <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
Sept. 2024	7CV10141	<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>Failure of a MOS-FET component leads to failure in the power delivery circuitry of the drive</li> <li>Drive hang after uncorrectable read</li> </ul> </li> </ul>
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>



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

Date	Revision	Description
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 CI054, 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>
Sept. 2022	XC311151 (M.2) 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-P4510 / P4511 / P4610 / P4618 (formerly Intel®)

Date	Revision	Description
Dec. 2024	VCV10394 VDV10194 VEV10194	<ul style="list-style-type: none"> <li>Mitigates security vulnerabilities</li> </ul>

Table 11: 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 12: 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 13: Solidigm™ P41 Plus

Date	Revision	Description
Sept. 2024	004C	<ul style="list-style-type: none"> <li>Firmware would postpone info block refresh if there is a shutdown notification from host to prevent data loss in abnormal edge cases of host shutdown events.</li> </ul>
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 14: 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 15: 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 16: 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 17: 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 18: Solidigm™ 7600p (formerly Intel®)

Date	Revision	Description
May 2022	006P	<ul style="list-style-type: none"><li data-bbox="509 363 1276 390">• Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li></ul>

Table 19: Solidigm™ 6000p (formerly Intel®)

Date	Revision	Description
May 2022	132P	<ul style="list-style-type: none"><li data-bbox="509 569 1276 596">• Mitigates security vulnerability (see Solidigm Advisory SOLIDIGM-SA-00563)</li></ul>

### 3 Solidigm Other SSD Products Revision History

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Table 20: Solidigm™ E 6100p (formerly Intel®)

<b>Date</b>	<b>Revision</b>	<b>Description</b>
May 2022	006E	<ul style="list-style-type: none"><li data-bbox="509 470 1235 495">• 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>