



# **Intel<sup>®</sup> Memory and Storage Tool (Intel<sup>®</sup> MAS) Command Line Interface (CLI)**

**Release Notes**

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***December 2022***

**Revision 017US**



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## Revision History

Software Revision	Description	Date
2.2	Changes in revision 2.2 of the Intel® MAS CLI include: <ul style="list-style-type: none"><li>• Added ESXI* 8.0 support</li><li>• Added L0310600 firmware update for Intel® Optane™ P5800X Series</li><li>• Removed Solidigm related links and text from the installer UI, Intel® MAS UI, and Intel® MAS CLI</li></ul>	December 2022
2.1	Changes in revision 2.1 of the Intel® MAS CLI include: <ul style="list-style-type: none"><li>• Added firmware updates for hybrid products</li><li>• Hid CLI properties when they are not applicable</li><li>• Fixed Intel® MAS GUI crash that occurred with certain Intel® Rapid Storage Technology (Intel® RST) Intel® RAID configurations</li></ul>	July 2022
2.0	Changes in revision 2.0 of the Intel® MAS CLI include: <ul style="list-style-type: none"><li>• Removed Intel® NAND Flash Memory only features, more information</li><li>• Firmware Update to E2010603 for Intel® Optane™ P4800X/P4801X Series</li><li>• Firmware Update to E2010603 for Intel® Optane™ 905P/900P Series</li></ul>	May 2022
1.12	Changes in revision 1.12 of the Intel® MAS CLI include: <ul style="list-style-type: none"><li>• Resolved firmware update for Intel® Optane™ P5800X Series</li><li>• Added namespace overprovisioning support</li><li>• Corrected the capacity calculation displayed in drive info</li></ul>	December 2021

1.11	<p>Changes in revision 1.11 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>Resolved firmware update for Intel® Optane™ P5800X Series</li> <li>Firmware Update to E2010600 for Intel® Optane™ P4800X/P4801X Series for ESXi*</li> <li>Firmware Update to L0310200 for Intel® Optane™ P5800X Series for ESXi*</li> <li>Firmware Update to 2CV10201 for D7-P5500/P5600 Series</li> <li>Firmware Update to JCV10200 for D7-P5510 Series</li> <li>Firmware Update to ACV10200 for D5-P5316 Series</li> <li>Added support for Windows* 11, Windows Server* 2022, ESXi* 7.0.3, RHEL* 8.3, 8.4, CentOS* 8.3, 8.4</li> <li>Fixed aggregation threshold error message</li> <li>Resolved firmware update for some Intel® Optane™ P4800X/P4801X Series products</li> </ul>	October 2021
1.10 v.2	<ul style="list-style-type: none"> <li>Firmware Update for Intel® Optane™ P4510, P4511, P4610 and P4618 Series</li> </ul>	September 2021
1.10	<p>Changes in revision 1.10 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>Firmware Update for Intel® Optane™ P4800X/P4801X Series for Windows* and Linux*</li> <li>Firmware Update for P4510, P4610 and P4618 Series</li> <li>Added Secure Erase Command</li> </ul>	August 2021
1.9	<p>Changes in revision 1.9 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>Firmware Update for Non-OPAL SKUs for P4510, P4610 and P4618 Series to VDV10182</li> <li>Firmware Update to L0310200 for Intel® Optane™ SSD P5800X Series (400GB, 800GB, 1.6TB). Update Windows* and Linux* only</li> </ul>	July 2021
1.8	<p>Changes in revision 1.8 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>More Descriptive Error Messages in GUI - Zip log files</li> <li>Clean up default property list</li> <li>Improved boot drive feature</li> <li>Device Self-Test (DST) on Reserved Status</li> <li>Updated Intel® MAS CLI Installation Guide to include section on Ubuntu</li> <li>Added check for Intel® Rapid Storage Technology (Intel® RST) version in firmware update/activate</li> <li>Fixed diagnostic scan bug in GUI</li> <li>Fixed issues in product family display and attributes display</li> </ul>	May 2021

1.7	<p>Changes in revision 1.7 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>• Added ability to show Self-Monitoring and Reporting Technology (SMART) health log page on non- Intel® SSDs</li> <li>• Bug fix to allow Intel® Optane™ H10 Series to update firmware individually if update is available for one component only</li> <li>• Added ability to show partition information</li> <li>• Updated handling of Secure Erase feature with Intel’s Driver</li> <li>• Fixed issue of scheduled optimize sessions not being removed from Windows* scheduled list</li> <li>• Added restrict read scan feature on drives with read locked LBA ranges</li> <li>• Added additional parameters to NVMe* GetLog Feature</li> <li>• Added support for 670p series</li> <li>• Firmware Update for D5-P4320, D5-P4420 Series and D5-P4326 Series</li> <li>• ESXi* 7.0.2 support (VMware* ESXi* 7.0.2)</li> </ul>	April 2021
1.6	<p>Changes in revision 1.6 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>• Nlog parser updates for Intel® Optane™</li> <li>• Added feature for sending vendor specific admin commands</li> <li>• Updated SMART attribute parser to report the raw value as well as the raw value in byte units for the Intel® NAND Flash Memory /Host Bytes written log page</li> <li>• Show namespace Id value by default in 'show -intelssd' command</li> <li>• Fixed issue with JSON output</li> </ul>	February 2021
1.5	<p>Changes in revision 1.5 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>• Fixed issues with Opal State reporting</li> <li>• Added limited set feature support on MSFT NVMe* driver</li> <li>• ESXi* 7.0 U1 support (VMware* ESXi* 7.0.1)</li> <li>• Added feature to pull drive logs, run data integrity scans and run read scans</li> <li>• Updated device self-test, SMART health and command effects log page parsers</li> </ul>	January 2021
1.4	<p>Changes in revision 1.4 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>• Fix issue with Intel® RAID member drives showing 'Unknown' as drive health status</li> <li>• Fix persistent event log bug when reading a SMART Health Snapshot event</li> <li>• Enable Optimizer in Intel® MAS CLI</li> <li>• Added Log Specific Fields (LSP) parameter for NVMe* log page</li> <li>• Add ability to select drive based on device path</li> <li>• Add ability to select device that is part of a MegaRAID* via device path</li> <li>• Fix issue with inaccurate native max address status on D7-P5500 Series (Arbordale Plus)</li> <li>• Fix issue with JSON output related to Intel® SSD dual port products</li> <li>• Updated wording for CVE document (see Intel Advisory INTEL-SA-00362)</li> </ul>	November 2020

1.3	<p>Changes in revision 1.3 of the Intel® MAS CLI include:</p> <ul style="list-style-type: none"> <li>• Added firmware (FW) for Intel® Optane™ Memory H10 with Solid State Storage to FW G002-0440</li> <li>• Added persistent event log parsing feature</li> <li>• Added RHEL* 8.0 to supported distros</li> <li>• Clarify help for performance booster, drive self-test, and telemetry log</li> <li>• Bug fix for json output on certain CLI features</li> <li>• Add include NVMe* health log property for SMART feature</li> <li>• Fix issue with retrieving namespace data on MSFT driver</li> <li>• SMART attribute description updates</li> </ul>	October 2020
1.2	<p>This release includes the following changes/updates for:</p> <ul style="list-style-type: none"> <li>• Intel® Optane™ SSD P4800X Series FW update to FW 485 (for ESXi*)</li> <li>• Update Intel® SSD D5-P4320 and Intel® SSD D5-P4326 firmware to 3DV10130 and 8DV10560 respectively</li> <li>• Added SMART health attribute to SMART feature</li> <li>• Ability to get NVMe* log by id (int, hex)</li> <li>• NVMe* Reset: Changed "IntelMAS start -intelssd # -nvmereset" syntax to "IntelMAS reset -intelssd # -nvmecontroller"</li> <li>• Allow NVMe* Reset command separately from FW Activate</li> <li>• Fixed issue of Mansion Beach drive FW update failures from E2010325</li> </ul>	August 2020
1.1	<ul style="list-style-type: none"> <li>• This release includes the following changes/updates:</li> <li>• Added firmware update for Intel® Optane™ Memory, Intel® Optane™ SSD 905P/900P, Intel® Optane™ SSD P4800X/P4801X, Intel® SSD D3-S4510/D3-S4610, DC S3100, DC P4101, E 6100p, E 5400s, E 5100s, Pro 7600p, Pro 6000p, Pro 5450s, Pro 5400s, 760p, 660p, and 540s.</li> </ul>	July 2020



1.0.6	<p>This release includes the following changes/updates:</p> <ul style="list-style-type: none"><li>• Intel® Optane™ SSD 800P firmware update to 440</li><li>• Intel® SSD P3520 firmware update to MDV10291</li><li>• Intel® SSD S3610, Intel® SSD S3710 and Intel® SSD S3500 (M.2 and HD) firmware update to G2010170</li><li>• Intel® Optane™ SSD P4800X/P4801X:<ul style="list-style-type: none"><li>– Windows*/Linux* – E2010485</li><li>– ESXi* – E2010475</li></ul></li><li>• Intel® SSD P4511 M.2 firmware update to VCV10370</li><li>• Intel® SSD D3-S4510 and Intel® SSD D3-S4610:<ul style="list-style-type: none"><li>– Firmware update to XCV10120 with SMART attributes fix firmware</li><li>– Hop-on Firmware XCV1011D is integrated in the tool</li></ul></li><li>• Intel® SSD D3-S4510 M.2:<ul style="list-style-type: none"><li>– Firmware update to XC311120 with SMART attributes fix firmware</li><li>– Hop-on Firmware XC31111D is integrated in the tool</li></ul></li></ul>	June 2020
1.0.5	<p>This is the first revision of the Intel® MAS Tool</p> <p>This version of the tool contains a Command Line Interface (CLI) and the functionality of many current tools, see the User Guide for more information, with support for Client and Datacenter Intel® SSD and Intel® Optane™ Memory</p>	January 2020

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



# 1 Intel® Memory and Storage Tool (Intel® MAS) (CLI)

**Table 1-1. List of Intel® Optane™ Solid State Drives**

Model	Latest Firmware Version(s)
Intel® Optane™ P5800X	L0310600
Intel® Optane™ P4800X/P4801X	E2010603
Intel® Optane™ D4800X	E2010470
Intel® Optane™ SSD P1600X	U5110550
Intel® Optane™ SSD 905P/900P	E2010480
Intel® Optane™ SSD 800P	K4110440

**Table 1-2. List of Intel® Optane™ Memory Devices**

Model	Latest Firmware Version(s)
Intel® Optane™ Memory H20	G003-0552
Intel® Optane™ Memory H10	G003-0440
Intel® Optane™ Memory M10	K4110440
Intel® Optane™ Memory	K3110310

**Table 1-3. Intel® Optane™ Memory H10 Revision History**

Date	Revision	Description
September	G002-0440	This firmware version has the following fixes: <ul style="list-style-type: none"> <li>Complaint with the 10th Generation Intel® Core™ mobile processor Platform</li> </ul>

**Table 1-4. Intel® Optane™ SSD 905P/900P Revision History**

Date	Revision	Description
May 2022	E2010603	This firmware version has the following fixes. <ul style="list-style-type: none"> <li>Fix Windows Server* 2022/Windows* 11 certification related I/O test issue</li> </ul>

July 2020	E2010480	<p>This firmware version has below fixes:</p> <ul style="list-style-type: none"> <li>Fix for drive fails to set correct Native Max Logical Block Address (LBA) when forcing maximum address capacity to smaller one</li> <li>Fix for media errors + E2E error increments after coming back to the native capacity</li> <li>Fix for drive sometimes fails PCIe* training during reboots resulting in reduced link width or speed</li> <li>Fix Link width degrades during link disable/enable on some platforms</li> <li>Fix for Serial number is all zeroes after U.2 drive hot plug operation</li> <li>Fix for Quality Reliability Test encountered Cold ECC Failure</li> <li>"Mitigates security vulnerability (see Intel Advisory <a href="#">INTEL-SA-00362</a>)"</li> </ul>
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**Table 1-5. Intel® Optane™ SSD P4800X and P4801X Revision History**

Date	Revision	Description
May 2022	E2010603	<p>This firmware version has the following fixes:</p> <ul style="list-style-type: none"> <li>Fix Windows Server* 2022/Windows* 11 certification related I/O test issue</li> </ul>
August 2021	Windows* / Linux* - E2010600	P4800X/P4801X updates to MR5 firmware E2010600 for Windows* / Linux* (ESXi* version will be released later)
August 2020	Windows/Linux* - E2010485 ESXi* - E2010485	Intel® Optane™ SSD P4800X Series FW update to FW 485 (for ESXi*)
July 2020	Windows*/Linux* - E2010485 ESXi* - E2010475	Intel® Optane™ SSD P4800X 375 GB AIC SKU now supported for upgrade
May 2020	Windows*/Linux* - E2010485 <sup>1</sup> ESXi* - E2010475 <sup>1</sup>	<p>This revision adds the following firmware updates for Intel® Optane™ SSD P4800X/P4801X:</p> <ul style="list-style-type: none"> <li>Windows*/Linux* - E2010485</li> <li>ESXi* - E2010475</li> </ul> <p><b>Note:</b> 1. P4800X 375 GB Add-in Card (AIC) SKU with firmware E2010211 will not support upgrade firmware to E2010475 or E2010485, this is targeted for a future release.</p> <ul style="list-style-type: none"> <li>Minor Bug fixes and enhancements</li> </ul>
December 2019	E2010435	<p>The following changes are included in this firmware update:</p> <ul style="list-style-type: none"> <li>QAN 9871</li> </ul>
February 2018	E2010324 (375 GB) EB3B0306 E2010325 (750 GB) EB3B0309	<p>The following changes are included in this firmware update:</p> <ul style="list-style-type: none"> <li>Bug fixes from previous firmware on 375 GB (from FW: E2010320)</li> <li>Note that 750 GB was qualified on firmware E2010325. There is no maintenance release past that FW. Additionally, there is limited applicability of this firmware on qual samples. Please reach out to Intel representative if your 750 GB samples are on earlier revision than FW E2010325.</li> </ul>

**Table 1-6. Intel® Optane™ SSD P5800X Series Revision History**

Date	Revision	Description
November 2022	Windows*/Linux* - L0310600	<p>This firmware version has the following fixes:</p> <ul style="list-style-type: none"> <li>Fix for multiple "Firmware Activation Without Reset" use cases</li> <li>Fix for "Format Progress Indicator" display issue</li> <li>Fix for "NVMe format over NVMe-MI failure" issue</li> <li>Fix for "Device-Self-Test maybe rejected" issue</li> </ul>

June 2021	Windows*/Linux* - L0310200 ESXi* - L0310100	This firmware version has the following fixes: <ul style="list-style-type: none"><li>• Add "Firmware Activation Without Reset" feature</li><li>• Fix SMART log page issue for sanitize over NVMe*-MI issue</li></ul>
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