Intel® Rapid Storage Technology (Intel® RST) 16.7.0.1009–(Intel® Optane Memory SDK Only) Production Version Release

18 October 2018

Supported Operating Systems#

Microsoft Windows 10 Redstone4 x64*
Microsoft Windows Server 2016 x64 Edition*
 # - The OS support list referred here is a high-level OS support list for this release. However support varies by platform. Please refer the platform POR for the respective platform OS support.

Revision History

Date	Driver Revision	Build Number
18 October 2018	16.7.0.1009 Optane-SDK release	1009
26 September 2018	16.7.0.1009-InstallerUpdated PV	1009
3 August 2018	16.7.0.1009 PV	1009

Notes:

1. Known Issue is defined as a potential Intel® RST issue that has been replicated internally by the Intel® RST team but has not been root caused to be an Intel® RST defect.

2. This production version release only includes Intel® Optane memory SDK. For the required 16.7.0.1009 Intel® driver package for use with this SDK please refer kit# 129391.

    a. The RAID OROM & UEFI version for this release is 16.7.0.3513, the driver and user interface version is 16.7.0.1009, HSA app version is 16.10700.1003.0. For Intel® RST Premium features (e.g. RAID, Intel® Optane™ memory, CPU Attached Storage), it is recommended that both the Intel® RST pre-OS and Intel® RST OS driver components are updated. Please contact your CE for further details.

3. If RTD3 is enabled, Windows can turn off disk for very short time (e.g. 20ms). The minimum off time for some disks can be much longer (even 1s). If the disk is turned on too fast, it can hang in some undefined state. RTD3 should be disabled if the disk specification states longer minimum off time.

4. New features and updates added for this release:

    a. Combined RST and Intel® Optane™ Memory interface with HSA support.
    b. RCRs added:
        i. Incomplete Intel® Optane™ memory volume disks now shows under "Optane volume info" page instead of Non-RAID physical disks in the RST UEFI driver.
        ii. Restoring APM values to SSD/HDD default APM level when resuming from Connected Standby.
        iii. Intel® Optane Memory SDK

5. For more information on these features, please refer to RST_OEM Tech Guide 16.7-rev.1.0.pdf or later.

Supported Hardware

Initial Intel® RST Release Version	Chipset Name	Platform / PCH / (Segment)	PCH SKU Details
16.x	Intel® 300 Series Chipset Intel® X299 Chipset Mobile Intel® 300 Series Chipset Mobile Intel® CM246 Chipset	Desktop	Intel® H310 Chipset(A) Intel® Q370 Chipset Intel® H370 Chipset Intel® B360 Chipset(O) Intel® Z370 Chipset
		High End Desktop	Intel® X299 Chipset
		Mobile	Intel® HM370 Chipset Intel® QM370 Chipset Intel® CM246 Chipset
N - 1			
	Intel® H110 Chipset Intel® 200 Series Chipset Intel® C236 Chipset Mobile Intel® 100 Series Chipset Mobile Intel® CM238 Chipset	Desktop	Intel® H110 Chipset(A) Intel® Q250 Chipset(O) Intel® H270 Chipset Intel® B250 Chipset(O) Intel® Z270 Chipset
		Workstation	Intel® C236 Chipset
		Mobile	Intel® HM175 Chipset Intel® QM175 Chipset Intel® CM238 Chipset

(A) This base SKU of the chipset supports AHCI mode only
(O) This base SKU of the chipset supports both AHCI and Intel® Optane™ memory modes only (nonRAID)
SX This SKU is supported with SKL-X CPU only

Terminology

Common Terms and Acronyms	Definition
AEN	Asynchronous Event Notification
AHCI	Advanced Host Controller Interface
ATA	Advanced Technology Attachment
ATAPI	Advanced Technology Attachment Packet Interface
BIOS	Basic Input / Output System

BUS PROTOCOL GROUP	A bus protocol group represents a set of bus protocols with similar performance characteristics. Bus Protocol Groups are listed here in descending order of speed: 1- PCIe* 2- SATA
Chipset	A term used to define a collection of The PNHCI components required to make a PC function.
CSMI	OEM Common Storage Management Interface for reporting RAID configurations and SMP, SSP, STP pass through.
DEVSLP	Serial ATA Device Sleep
DMA	Direct Memory Access
DOS	Disk Operating System
DIPM	Device Initiated Power Management
Disk's Write Cache	A memory device within a hard drive, which is allocated for the temporary storage of data before that data is copied to its permanent storage location.
GB	Giga-byte = 1024^3 bytes
HDD	Hard Disk Drive
HIPM	Host Initiated Power Management
Hot Plug	A term used to describe the removal or insertion of a SATA disk while the system is powered on.
HSA	Hardware Supported App
ICH	Input / Output Controller Hub
InstantGo*	Microsoft Windows* 8.1 connected standby low-power state that features extremely low power consumption while maintaining Internet connectivity.
KB	Kilo-byte = 1024 bytes

LPM	Link Power Management
M.2	Specification for internally mounted computer expansion cards and associated connectors. It replaces the mSATA standard. Formerly known as the Next Generation Form Factor (NGFF)
MB	Mega-bytes = 1024^2 bytes
MEMORY GROUP	A memory group represents a set of backend storage media types with similar performance characteristics. Memory Groups are listed here in ascending order of speed: 1- Spindle Device (HDD) 4- PCIe* NAND Device (SSD) 2- NAND Spindle Hybrid Device 5- PCIe* NAND Device (SXP) 3- PCH SATA NAND Device (SSD)
mSATA	Computer bus interface that connects host bus adapters to mass storage devices such as hard disk drives and optical drives. Uses PCI Express Mini Card-like connector that is electrically SATA.
NAI	Notification Area Icon
NTFS	NT File System
NVC	Non-Volatile Cache
NVMe*	Non-Volatile Memory Express: Non-Volatile Memory Host Controller Interface Specification (NVMHCI), is a specification for accessing solidstate drives (SSDs) attached through the PCI Express (PCIe*) bus
OEM	Original Equipment Manufacturer

ODD	Optical Disk Drive
OROM	Option ROM
OS	Operating System
PCH	Platform Controller Hub
PCIe*	PCI Express (Peripheral Component Interconnect Express): is a highspeed serial computer expansion bus standard
Port	The point at which a SATA drive physically connects to the SATA controller.
PRD	Product Requirements Document
PUIS	Power Up In Standby - Drive feature that allows a spindle device to be powered up in standby mode without spinning the disk up.
RAID	Redundant Array of Independent Disks Matrix RAID: A configuration supporting two RAID levels by having two volumes in a single RAID array that use Intel® RST
RTD3	Runtime D3
RS2	Redstone2
SATA	Serial ATA
SIPM	Software Initiated Power Management

S.M.A.R.T.	Self-Monitoring, Analysis and Reporting Technology: an open standard for developing hard drives and software systems that automatically monitors a hard drive's health and reports potential problems.
SED	Self-Encrypting Drive
SRT (EOL)	Intel® Smart Response Technology. Intel® RST's premium feature to use caching technology that enables caching of a device or volume using a faster device. **Note: *This feature has EOL'd and is no longer supported beginning with the Intel(R) RST 16.0 product line***
SSD	Solid State Drive – non-volatile memory used as storage media
SSHD	Solid-State Hybrid Drive
TB	Tera-byte = 1024^4 bytes
UEFI	UEFI pre-OS driver
UI	User Interface
VC	Validation Candidate
ZPODD	Zero Power Optical Disk Drive