Intel® Rapid Storage Technology (Intel® RST) 16.8.2.1002 Production Version Release

08 March 2019

Supported Operating Systems#
Microsoft Windows 10 RS4 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
08 March 2019	16.8.2.1002 Production Version (RS4)	1002
21 December 2018	16.8.0.1000 Production version (RS5)	1000
12 December 2018	16.8.0.1000 Production version (RS4)	1000

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. **Security update:** Intel® RST 16.8.2.1002 has been updated to include SqLite DLL version 3.27.1, which includes functional and security updates. Users should update to the latest Intel® RST version. (SqLite DLL is used to maintain the database for storing file related information by the NGSA service which is used for File caching).
   - Configuration Impacted: Intel® Optane™ Memory volume – 32 GB and higher.

Limitations:

1. If the driver is installed through Windows* Update, the Intel® Optane™ memory application and the Intel® RST application will not be updated. To resolve this, an installation of the application package from downloadcenter.intel.com should be performed. For additional details, please see following article:
   https://www.intel.com/content/www/us/en/support/articles/000031845.html

Supported Hardware

Initial RST Release Version						Chipset Name	Platform / PCH / (Segment)	PCH SKU Details
16.x							Cannon Lake (CNL)/Coffee Lake (CFL) PCH: Cannon Point-H (CNP-H) (DT, HEDT)	- H310[A] - H310C[A] - H370 - Z390 - Q370 - B360[O] - B365
						Intel® 300/240 Series Chipset Family	CNL/CFL PCH: CNP-H (WS)	- C246
							CNL/CFL PCH: CNP-H (Mobile Halo)	- QM370 - HM370 - CM246
						Intel® 8th Generation Core Processor Family Platform I/O SATA AHCI/RAID Controller	WHL PCH: CNP-LP (Mobile LP)	- Premium-U - Base-U[A]
N - 1								
	15.8 / 15.9					Intel® 200 Series Chipset Family	Coffee Lake (CFL-S, 8+2) PCH: Kaby Point (KBP-H) (Desktop)	- Z370***
		15.7				Intel® 200 Series Chipset Family	Basin Falls (w/ KBL-X CPU) PCH: KBP-H (HEDT)	- X299
						Intel® 8th Generation Core Processor Family Platform I/O SATA AHCI/RAID Controller	Kaby Lake Refresh (KBL-R) PCH: SPT-LP (Mobile-LP)	- Base-U - Premium-U - Premium-Y
			15.5			Intel® 100/C230 Series Chipset Family	Greenlow-Refresh (w/ KBL CPU) PCH: SPT PCH-H (WS)	- C236
				15.2		Intel® 200 Series Chipset Family	KBL PCH: KBP-H (Desktop)	- Q250[O] - B250[O] - Z270 - H270 - Q270
						Intel® 100/C230 Series Chipset Family	(w/ KBL CPU) PCH: SPT-H (Mobile Halo)	- HM175 - QM175 - CM238
					15.0	Intel® 7th Generation Core Processor Family Platform I/O SATA AHCI/RAID Controller	(w/ KBL CPU) PCH: SPT-LP (Mobile-LP)	- Base-U[A] - Premium-U - Premium-Y

[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)

Resolved Issues

Resolved Issues in 16.8.2.1002 Release

ID	Title	Operating System
N/A	Refer notes section for Security Update	N/A

Resolved Issues in 16.8.0.1000 Release*

ID	Title	Operating System
1806474992 1805898415 1806665709 1806668684	Driver issue with Intel® Optane™ memory enabled systems with Intel® Rapid Storage Technology (RST) driver v.16.0.x, 16.5.x, or 16.7.x may potentially cause the loss of end user data or render a system inoperable TA CDI **#604382**	windows.10_rs4.x64
1806486353	RST Installers to inject driver to recovery partition	windows.10_rs4.x64
1806668676	Add HfcDisableService.exe service to run DISM tool	windows.10_rs4.x64
1806265299	Certain NVMe SSDs cannot be detected after installing Windows 10 RS4 w/RAID mode using F6 driver loading.	windows.10_rs4.x64
1806347440	Intel® RST 16.5.0.1030 will cause BSOD with NVMe drives with more than 32 MSI-X	windows.10_rs4.x64
1806301640	DPM installation failure is observed with 32G Intel® Optane Memory	windows.10_rs4.x64
1806416498	Uninstall "Intel® Optane Pinning Explorer Extensions" will cause Windows Explorer hang.	windows.10_rs4.x64
1806349753	High CPU Utilization while system idle with Intel® Optane™ memory Disabled (explorer pinning feature re-enabled which was disabled in RST 16.7.0.1009 because of this issue)	windows.10_rs4.x64

*: Resolve issues were the comparison to 16.7.0.1009

Known Issues

Known Issues in 16.8.2.1002 Production Version Release

ID	Title	Operating System
1805815700	Sporadically restart option not showing, After enabling/disabling Intel® Optane™ Memory with one click installer	windows.10_rs3.x64
1604306111	BSOD is observed during Shrink of Disk Partition (C:) drive after enable Intel® Optane™ Memory before Restart the SUT	windows.10_rs1.x64
1806916393	Lower performance (S4 suspend time and S4 resume time) for user experience at RAID 0 than non-RAID	windows.10_rs4.x64
1807075852	L10N Chinese Traditional OS Intel® RST driver not translate into target language	windows.10_rs5.x64
1806514730	When S3 or shutdown, the system run will black screen/BSOD with certain HMB PCIE M.2 SSD	windows.10_rs4.x64

1806301478	RAID Volume have lost after load f6 driver during RS4 OS installation	windows.10_rs4.x64
1806420500	OS DRIPS percentage is low when PSON is enabled on the system with OPTANE+HDD as boot media.	windows.10_rs4.x64
1806343993	Standby performance test result in S3 suspend violate certain spec.	windows.10_rs4.x64
1806255084	Create tab of Intel® RST UI Stopped Working with NVMe SSD on CPU attached storage present along with other drives and remapping disabled	windows.10_rs4.x64
1806420548	UI setup screen only shows 60GB Optane even though using a 64GB module.	windows.10_rs4.x64
1806021177	BSOD DPC_WATCHDOG_VIOLATION (133) [in SATA] during S4 flow when Intel® Optane™ Memory is enabled	windows.10_rs4.x64
1407988477	ODD is not powered off if ODD tray is closed after system enters modern standby	windows.10_rs4.x64
1806502232	Blue screen may occur during reboot after dirty shutdown happens in the Intel® Optane™ Memory volume enabling process. (RS5 only)	windows.10_rs5.x64
1806123397	The display problem of "Intel® Optane™ Memory" in Intel® RST	windows.10_rs4.x64
1806382332	BSOD "DPC_WATCHDOG_VIOLATION"(113) when run MS	windows.10_rs4.x64
1806536312	TBT3 PCIe Box is attached and unattached, disk device will be delayed to disappear in DM after un-plugging.	windows.10_rs4.x64
1806426523	The system occurred BSOD with bug check code 0x9F (DRIVER_POWER_STATE_FAILURE) during S3 on certain systems.	windows.10_rs4.x64
1806148650	System can't deconfig optane in WinPE if optane been configured intermittently	NA
1305911397	Some character is not in simplified Chinese with Intel® Optane™ Memory UI.	windows.10_rs4.x64
1806301405	ODD serial number shows Not Available in Intel® RST UI.	windows.10_rs4.x64
1806518703	SLP_S0 residency can't meet 95% for monitor MS by PHM for at least 4 hours.	windows.10_rs4.x64

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.
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