



This Technical Advisory describes an issue which may or may not affect the customer's product

Intel Action Alert

AA-1105

5200 NE Elam Young Parkway
Hillsboro, OR 97124

April 5, 2016

Possible data integrity issues on Intel® Embedded Server RAID Technology II with NCQ enabled SATA drives.

Products Affected

All the Intel server boards using the Intel® Embedded Server RAID Technology II (ESRT2) with Native Command Queuing (NCQ) enabled SATA drives.

Intel® Server Board S1200BTLR	Intel® Server Board S2400GP2	Intel® Server Board S2600KI
Intel® Server Board S1200BTLRM	Intel® Server Board S2400GP4	Intel® Server Board S2600KP
Intel® Server Board S1200BTSR	Intel® Server Board S2400LP	Intel® Server Board S2600KPF
Intel® Server Board S1200KP	Intel® Server Board S2400SC2	Intel® Server Board S2600KPFRR
Intel® Server Board S1200KPR	Intel® Server Board S2600CO4	Intel® Server Board S2600KPR
Intel® Server Board S1200SPL	Intel® Server Board S2600COE	Intel® Server Board S2600KPTR
Intel® Server Board S1200SPO	Intel® Server Board S2600CP2	Intel® Server Board S2600TP
Intel® Server Board S1200SPS	Intel® Server Board S2600CP4	Intel® Server Board S2600TPF
Intel® Server Board S1200V3RPL	Intel® Server Board S2600CW2	Intel® Server Board S2600TPFR
Intel® Server Board S1200V3RPM	Intel® Server Board S2600CW2R	Intel® Server Board S2600TPR
Intel® Server Board S1200V3RPO	Intel® Server Board S2600CW2S	Intel® Server Board S2600WP
Intel® Server Board S1200V3RPS	Intel® Server Board S2600CW2SR	Intel® Server Board S2600WPF
Intel® Server Board S1400FP2	Intel® Server Board S2600CWTR	Intel® Server Board S2600WPQ
Intel® Server Board S1400FP4	Intel® Server Board S2600CWTSR	Intel® Server Board S2600WT2
Intel® Server Board S1400SP2	Intel® Server Board S2600GL	Intel® Server Board S2600WTT
Intel® Server Board S1400SP4	Intel® Server Board S2600GZ	Intel® Server Board S4600LH2
Intel® Server Board S1600JP2	Intel® Server Board S2600IP4	Intel® Server Board S4600LT2
Intel® Server Board S1600JP4	Intel® Server Board S2600IP4L	Intel® Workstation Board W2600CR2
Intel® Server Board S2400BB4	Intel® Server Board S2600JF	Intel® Workstation Board W2600CR2L
Intel® Server Board S2400EP2	Intel® Server Board S2600JFF	
Intel® Server Board S2400EP4	Intel® Server Board S2600JFQ	

This list only includes the last two generations of server boards, older server boards including the Intel® Embedded Server RAID Technology II are affected too.

Description

Intel has found a problem on the ESRT2 drivers that might cause data corruption when the controller is under simultaneous heavy IO and non-IO workloads; the problem was found on all the versions of the driver released previous to v17.01.2016.0216. This problem can only be reproduced on NCQ enabled SATA drives, the non-NCQ SATA drives and the SAS drives are not affected.



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Root Cause

The ESRT2 driver has a defect where a local buffer attached to a non-IO pass through command is not freed. Under heavy IO operations and non-IO operations, the driver may not properly handle certain interrupts causing the same local buffer to be reused in two commands and corrupt the IO. Simultaneous heavy IO and non-IO commands to NCQ enabled SATA drives might result in Data Integrity issues.

Corrective Action/Resolution

Intel has removed all the affected ESRT2 driver versions and published the new ESRT2 drivers with the fix for this problem. The new driver version is v17.01.2016.0216.

Intel Recommendations

Intel recommends the impacted customer to update the ESRT2 driver to v17.01.2016.0216, which is available at <https://downloadcenter.intel.com/>. Both Linux and Windows versions are available.

Please contact your Intel Sales Representative if you require more specific information about this issue.



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