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

# Intel Technical Advisory

**TA-1125**

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August 01, 2017

## Intel® Server Board S2600WF, S2600BP and S2600ST Product Family fail to initialize the operating system video driver for the ASPEED* Base Management Controller (BMC)

### Affected Products

| Product Code | MM# |
|---|---|
| S2600WFT | 952641 |
| S2600WF0 | 952644 |
| S2600WFQ | 952645 |
| S2600BPB | 948899 |
| S2600BPQ | 948900 |
| S2600BPS | 952609 |
| S2600STB | 957180 |
| S2600STQ | 957318 |

### Description

Intel® has discovered an issue in which the host fails to initialize the operating system video driver for the ASPEED* Baseboard Management Controller (BMC). Headless or remote management environments are not affected.

On different Linux* distributions the failure might be displayed as a **CPU soft lockup** message as shown in the example below:

```
[  OK  ] Reached target Paths.
[  OK  ] Reached target Basic System.
         Mounting Configuration File System...
[  OK  ] Mounted Configuration File System.
[   36.219792] BUG: soft lockup - CPU#3 stuck for 22s! [migration/3:918]
[   36.233800] BUG: soft lockup - CPU#4 stuck for 22s! [migration/4:923]
[   36.247806] BUG: soft lockup - CPU#5 stuck for 22s! [migration/5:928]
[   36.321831] BUG: soft lockup - CPU#6 stuck for 22s! [systemd-udevd:1538]
[   36.335837] BUG: soft lockup - CPU#7 stuck for 22s! [migration/7:938]
[   36.349842] BUG: soft lockup - CPU#8 stuck for 22s! [migration/8:943]
[   36.363847] BUG: soft lockup - CPU#9 stuck for 22s! [migration/9:948]
[   36.377852] BUG: soft lockup - CPU#10 stuck for 22s! [migration/10:953]
[   36.391857] BUG: soft lockup - CPU#11 stuck for 22s! [migration/11:958]
[   40.193314] BUG: soft lockup - CPU#1 stuck for 22s! [migration/1:908]
[   40.193316] BUG: soft lockup - CPU#0 stuck for 22s! [migration/0:7]
```

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**Root Cause**
Full root cause of this issue has been determined. Intel has confirmed that the failure has no bearing on system performance, it only impacts local video graphics. In detail, when the operating system loads, the OS-embedded ASPEED* video driver is not able to access a portion of the BMC memory space, therefore the process stalls.

**Corrective Action**
This issue is resolved at the driver level.
ASPEED* released an updated driver version v1.03 (https://www.aspeedtech.com/support.php) that corrects the failure for multiple operating systems. More details in the next section.

Red Hat*Enterprise Linux* will include the driver update in RHEL* v7.4
SUSE* Linux* Enterprise Server will include the driver update in SLES* v12 SP3
Ubuntu* Server will include the driver update in Ubuntu* v16.04.3 and v17.04

**Recommended Customer Action / Workaround**
Intel® developed a set of Installation Guides with step-by-step instructions to workaround this issue and to load the updated ASPEED* video driver v1.03. Please refer to these documents already included in every System Update Package (firmware) release.

The following are simple guidelines for three common operating systems:

Red Hat* Enterprise Linux* v7.3

1. Append the text **`modprobe.blacklist=ast`** before the **`quiet`** option at the end of the **`linuxefi`** line in the GRUB boot loader option
2. Upgrade the ASPEED* video driver

SUSE* Linux* Enterprise Server v12 SP2

1. Append the text **`modprobe.blacklist=ast`** at the end of the **`linuxefi`** line in the GRUB boot loader option
2. Upgrade the ASPEED* video driver

Microsoft* Windows* Server 2016

1. Windows built-in video driver will display graphics
2. Upgrade the ASPEED* video driver

If local video graphics features are not required, the driver update is not required in these environments.

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