



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

Intel Technical Advisory

TA-1180-00

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Intel® Server Boards D50TNP and Intel® Server Systems D50TNP may have incorrect MAC address programming that could result in MAC address duplication on the network.

Products Affected

Product Name	Product Code	MM#	PBA
Intel® Server Board D50TNP1SB	D50TNP1SB	99A2AT	K14754-351
Intel® Server Board DDR4 D50TNP1SBCR	D50TNP1SBCR	99AA23	M12931-152
Intel® Server System D50TNP1MHCPAC Compute Module	D50TNP1MHCPAC	99A2DZ	K14754-351
Intel® Server System D50TNP1MHCRAC Compute Module	D50TNP1MHCRAC	99A84D	M12931-152
Intel® Server System D50TNP2MHSTAC Management Module	D50TNP2MHSTAC	99A2F1	K14754-351
Intel® Server System D50TNP2MHSVAC Storage Module	D50TNP2MHSVAC	99A27J	K14754-351

Description

Intel has discovered that Intel® Server Boards D50TNP and Intel® Server Systems D50TNP built with the onboard Intel® Ethernet Controller X550-AT2 coupled with incorrect BMC firmware could result in MAC address duplication in the customer's network environment. The incorrect MAC address programming occurs on the Baseboard Management Controller's (BMC) shared port and dedicated port. Boards and systems built with onboard Intel® Ethernet Controller X550-AT are not impacted. The specific board PBA and BMC firmware combinations are listed in the Root Cause section of this advisory

Root Cause

Root cause has been determined to be that incorrect BMC firmware was used exclusively on boards and systems built with the onboard Intel® Ethernet Controller X550-AT2. The following table reflects the problematic board and BMC firmware combinations:

Onboard Ethernet Controller	Board Level PBA	BMC Firmware Revisions
X550-AT2	K14754-351	v2.81.99B20E11 and v2.87.be6beeae
X550-AT2	K14754-352	v2.81.99B20E11 and v2.87.be6beeae
X550-AT2	M12931-151	v2.81.99B20E11 and v2.87.be6beeae
X550-AT2	M12931-152	v2.81.99B20E11 and v2.87.be6beeae

The BMC firmware versions listed in the table use incorrect MAC address programming rules for the Intel® Ethernet Controller X550-AT2, which is the ultimate root cause. Boards that are programmed with BMC firmware versions 2.87.EA0DA84B and 2.88.E5F45B9C properly implement MAC address assignment and are not impacted by this issue.

Impact/Workaround

The correct MAC address programming rules are as follows:

- NIC 1 MAC address (for operating system usage). *Example: Base MAC Address = A4BF01910FCD*
- BMC LAN channel 1 MAC address = NIC1 MAC address + 1 *Example: Base +1 = A4BF01910FCE*
- BMC LAN channel 3 (Intel® Dedicated Server Management NIC) MAC address = NIC1 MAC address + 2
Example: Base +2 = A4BF01910FCF

When programmed with the incorrect BMC firmware version, the incorrect MAC address programming rules are as follows:

- NIC 1 MAC address (for operating system usage). *Example- Base MAC Address = A4BF01910FCD*
- BMC LAN channel 1 MAC address = NIC1 MAC address + 2 *Example- Base +2 = A4BF01910FCF*
- BMC LAN channel 3 (Intel® Dedicated Server Management NIC) MAC address = NIC1 MAC address + 3
Example- +3 = A4BF01910FDD

Note: The onboard LOM (Intel® Ethernet Controller X550-AT2) is NIC 1 and is the base MAC address used for the calculation. The NIC1 base address is always correct and is not impacted. The subsequent calculations for the BMC shared port and BMC Dedicated port is where the impact is seen.

The impact of the miscalculation primarily results in potential duplication and conflicts between the MAC addresses of NIC 1 on one system and the Dedicated Management port on another system. Our modeling reveals that Dedicated port to Dedicated port MAC address duplications are not likely to occur.

One workaround is to not use the onboard Network Controller if the BMC Dedicated Management Port is configured for server management use. This will require that an add-in Network adapter be installed for use instead of the onboard NIC. The duplication issue is ignored in this configuration.

Customers may determine if they are impacted by checking the board PBA version programmed in the FRU and the BMC firmware versions. If one of the previously listed combinations are detected, the board is impacted by this issue.

Corrective Action / Resolution

This issue is resolved in the latest BMC firmware. Firmware version 2.88.e5f45b9c is contained in the latest System Update Package (SUP) and System Firmware Update Package (SFUP) R01.01.0005, which are both publicly available on the product website. Updating to this, or any later released version of the SUP or SFUP packages will resolve or prevent the issue from occurring in deployed systems.

Please, contact your Intel support or sales representatives if you require additional information for this issue.

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