**# Title:**

Clarify implied shareability requirement on EFI\_MEMORY\_WB and EFI\_MEMORY\_WT for AArch64.

**# Status:**

Draft

**# Document:**

UEFI Specification 2.10 Errata

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**# Summary of the change**

The ECR:

- clarifies the implied shareability of the EFI\_MEMORY\_WT and EFI\_MEMORY\_WB memory attributes on AArch64 systems.

**# Benefits of the change**  
An OS expects pages marked as EFI\_MEMORY\_WT and EFI\_MEMORY\_WB to be mapped with inner-shareable attributes.  
This change prevents coherency issues if FW were to incorrectly map pages, tagged as EFI\_MEMORY\_WT and EFI\_MEMORY\_WB, with non-shareable shareability attributes.

**# Impact of the change**The AArch64 EDK2 codebase correctly maps EFI\_MEMORY\_WT and EFI\_MEMORY\_WB pages with inner-shareable attributes, no changes are expected to EDK2.

Other UEFI implementations may be affected and must correct the mappings of EFI\_MEMORY\_WT and EFI\_MEMORY\_WB pages in order to be compliant.

**# Detailed description of the change [normative updates]**

* Insertions highlighted
* Removals in ~~red~~

**2. Overview  
…**

**2.3 Calling Conventions**

**…**

**2.3.6. AArch64 Platforms**

**…**

**2.3.6.1. Memory types**

*Table 2.5 Map EFI Cacheability Attributes to AArch64 Memory Types*

|  |  |  |  |
| --- | --- | --- | --- |
| **EFI Memory Type** | **ARM Memory Type: MAIR attribute encoding Attr<n> [7:4] [3:0]** | **ARM memory shareability attribute SH[1:0]** | **ARM Memory Type: Meaning** |
| EFI\_MEMORY\_UC (Not cacheable) | 0000 0000 | Not applicable | Device-nGnRnE (Device non-Gathering, non-Reordering, no Early Write Acknowledgement) |
| EFI\_MEMORY\_WC (Write combine) | 0100 0100 | Not applicable | Normal Memory Outer non-cacheable Inner non-cacheable |
| EFI\_MEMORY\_WT (Write through) | 1011 1011 | 11 | Normal Memory Outer Write-through non-transient Inner Write-through non-transient, inner-shareable |
| EFI\_MEMORY\_WB (Write back) | 1111 1111 | 11 | Normal Memory Outer Write-back non-transient Inner Write-back non-transient, inner-shareable |
| EFI\_MEMORY\_UCE |  | Not applicable | Not used or defined |
| EFI\_MEMORY\_ISA\_MASK | Direct copy of the values of MAIR Attr<n> [7:4][3:0] | Not used or defined | As defined in the ARM Architecture Reference Manual. |