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DYNAMIC LINK BIOS DEBUG MESSAGE

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Dynamic link BIOS debug message

Abstract:

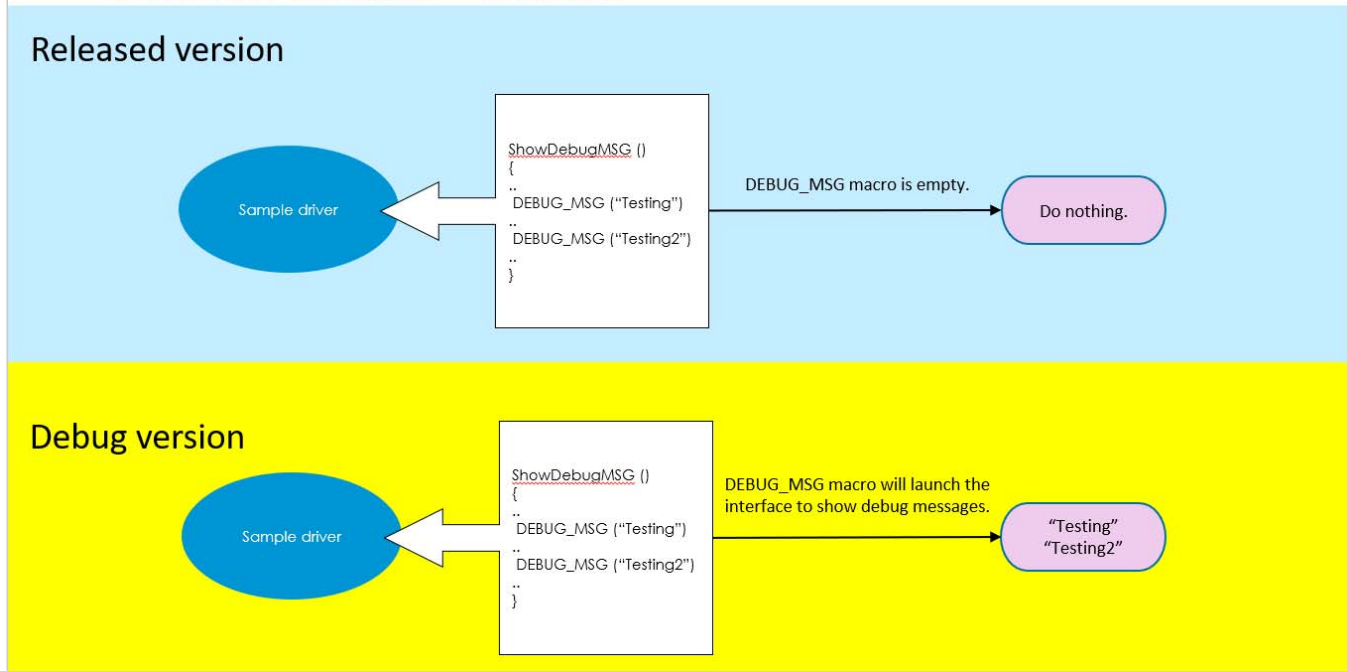
- In current design, the formal released BIOS can't output the debug message and if we want to get the debug message, we need to re-build another debug version BIOS.
- When issue is happened on customer or factory side, it will cost a lot of time to fix an issue. The issue needs to be recorded, reproduced and ship machine to RD to provide the solution.
- Some issues may not be reproduced in debug-version BIOS.
- In order to shorten the turnaround time from issue happened to get the, BIOS support to link debug message database dynamically in formal release version.
- BIOS will prepare a debug message database which can be placed in everywhere that can be accessed by database interface driver.
- BIOS will prepare a debug database interface UEFI driver which can be put everywhere that can be launched by BIOS as earlier as possible.
- Once the formal BIOS detected the debug message database and the debug database interface, then BIOS will auto output the debug by the interface and database.
- The first line staff can plug a removable storage (an example) within the database and the database interface driver into the computer and get the debug message. So that RD can start debugging at very early stage.

Design Construction:

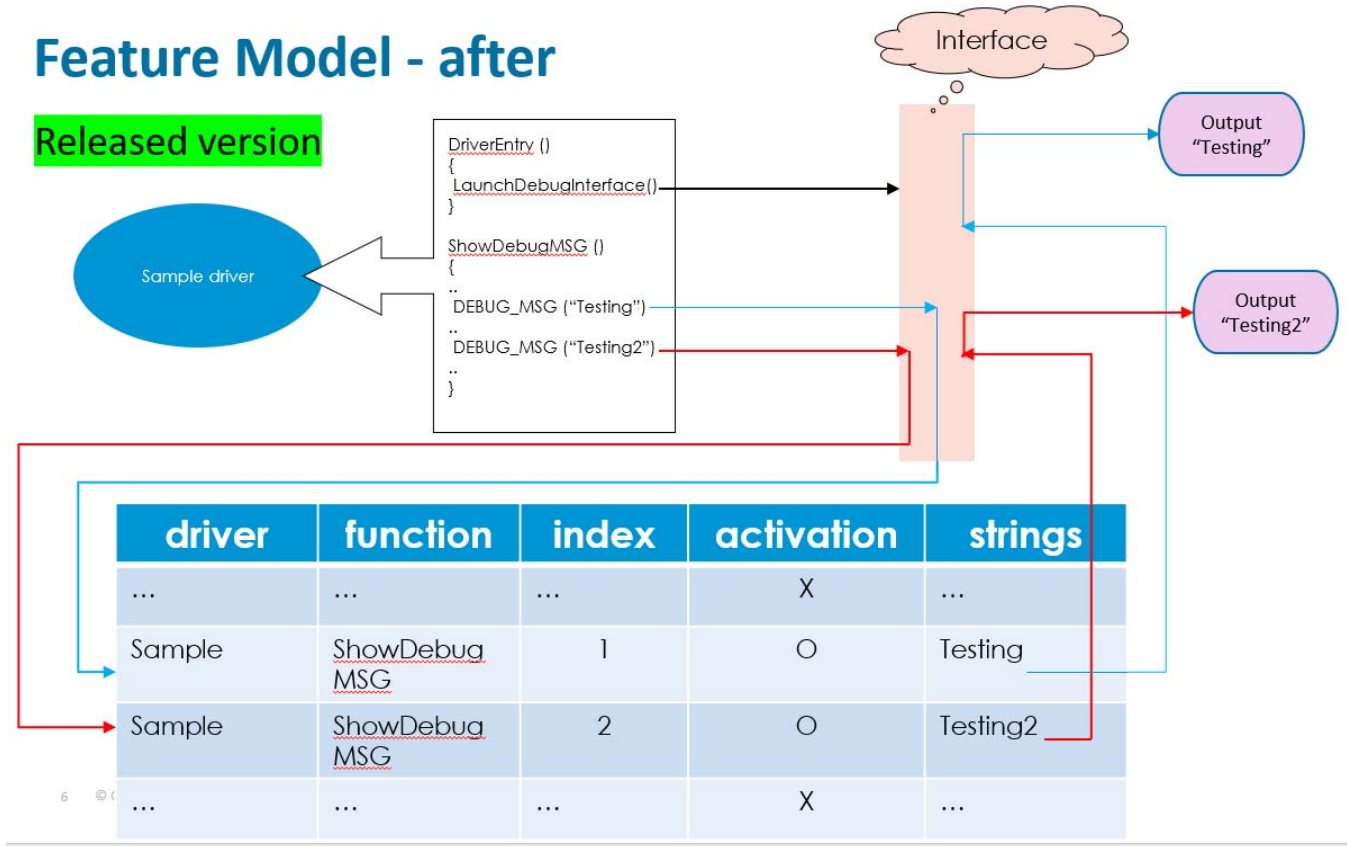
- HW: No HW need.
- SW: No SW need
- BIOS: Pre-prepare a debug message database and the database interface UEFI driver. BIOS will auto link the database and output the debug message through the database interface once detected the database and the database interface driver.

< Block Flow Diagram >

Feature Model – before

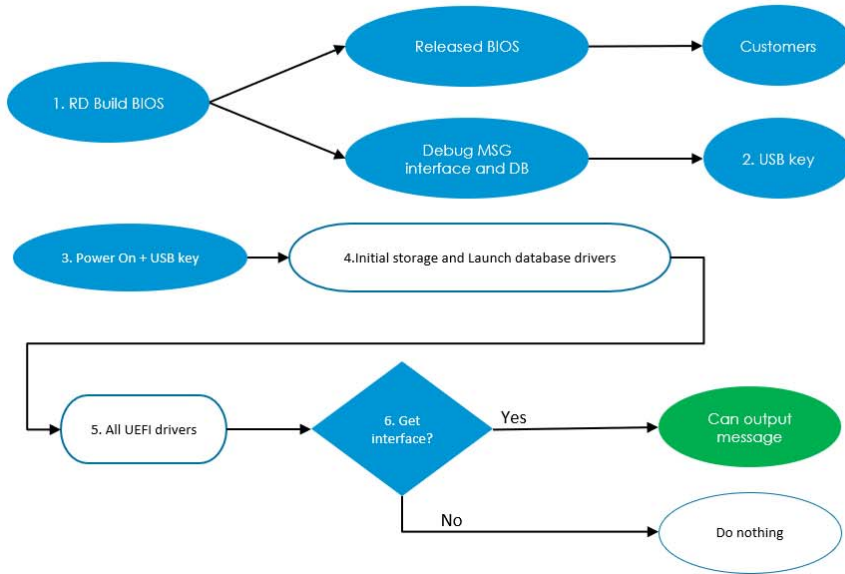


Feature Model - after



< Flow Chart >

Feature Flow



1. Build BIOS and will produce released version BIOS, interface drivers and database.
2. Put database and interface driver to an USB key.
3. Plug-in the USB key and power on system.
4. BIOS will initial the USB key and launch the database drivers.
5. All UEFI drivers in BIOS will try to get the debug message interface at driver entry to not impact the performance.
6. If got the interface, then the debug macro can output messages, else the debug macro will do nothing.

Note: Here use USB key as an example.

- **Business Strategy/Advantages**

1. Shorten the turnaround time from issue happened to provide the solution to customer and can save the shipping cost.
2. Prevent issues can't be reproduced from another debug version BIOS.
3. Can support below features in any machines without changing BIOS.
 - Show all debug messages.
 - Show specific driver debug messages only.
 - Replace a debug message by a new one.
4. No performance impact (POST time) if don't need to output debug messages.

Disclosed by Tsue-Yi Huang, Chia-Cheng Lin, Harry Chang, Hsin-Jen Lin, HP Inc.