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**Intel® Firmware Support Package  
(Intel® FSP) for 6<sup>th</sup> Generation Intel®  
Core™ Processor Code-Named  
SkyLake (SKL) Gold**

Release Notes

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*July 2016*



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## Revision History

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These are the main releases of Intel® Firmware Support Package (Intel® FSP) for 6<sup>th</sup> Generation Intel® Core™ Processor Code-Named SkyLake.

| Date           | Revision | Description                           |
|----------------|----------|---------------------------------------|
| Jul 20, 2016   | GOLD     | Gold Release for IOTG supported H Sku |
| March 14, 2016 | BETA     | Beta Release for IOTG supported H Sku |

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## 2.0 Introduction

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This package contains required binary image(s) and collateral for the Intel® Firmware Support Package (Intel® FSP) for 6<sup>th</sup> Generation Intel® Core™ Processor code-named SkyLake H Sku

Compliant with FSP 1.1 External Architecture Specification.

This document provides system requirements, installation instructions, issues and limitations, and legal information.

To learn more about this product, see:

- New and previously new features listed in [Section 3.0, New in This Release](#).
- Reference documentation listed in [Section 2.2, Related Documentation, Tools, and Packages](#).

The following table lists the relevant platform software components used during development and validation of this release.

**Table 1. Platform Software Component Information**

| Component                      | Gold              |
|--------------------------------|-------------------|
| Microcode Update (R0-stepping) | m36506E3_00000092 |
| Microcode Update (Q0-stepping) | m22506E1_0000002A |

## 2.1 Terminology

The following terms are used in this document.

**Table 2. Terminology**

| Term       | Description                       |
|------------|-----------------------------------|
| API        | Application Programming Interface |
| BSF        | Binary Settings File              |
| BCT        | Binary Configuration Tool         |
| CRB        | Customer Reference Board          |
| Intel® EDC | Intel® Embedded Design Center     |
| Intel® FSP | Intel® Firmware Support Package   |
| SoC        | System on Chip                    |



## 2.2 Related Documentation, Tools, and Packages

Table 3. Related Documentation, Tools, and Packages

| Document   | Location   |
|--|--|
| <i>Intel® Firmware Support Package (Intel® FSP) for the SkyLake Platform Integration Guide</i> | Available in this release package                        |
| <i>Intel® Binary Configuration Tool for Intel® Firmware Support Package</i>                    | <a href="http://www.intel.com/fsp">www.intel.com/fsp</a> |

## 2.3 Intended Audience

The intended audience is platform and system developers who intend to use an Intel® FSP-based boot loader for the firmware solution for their overall design based on the Intel® Core™ Processor code-named SkyLake. This group includes, but is not limited to, system BIOS developers, boot loader developers, and system integrators.

## 2.4 Customer Support

Intel offers support for this software at the API level only, defined in the Intel® FSP Integration Guide and reference manuals listed in [Section 2.2, Related Documentation, Tools, and Packages](#).

For technical support, please raise IPS (Intel® Premier Support) at <https://shnintelsf2crm.intel.myshn.net/home/home.jsp>

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## **3.0**     *New in This Release*

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### **3.1**     **New Features**

- Add support for DDR4 DDP parts with shared clock and ZQ pins
- MRC shall ensure DDR4 Self Refresh is set to ASR Mode

### **3.2**     **Beta Features**

- FSP BCT configuration support (via BCT 3.2.1)
- Boot Guard verified boot support

### **3.3**     **Alpha Features**

- SkyLake Processor Q0 stepping and Sunrise Point PCH Do stepping
- DDR4 Memory Detection and Initialization
- MTRR Initialization on all CPU threads
- PCI Express, SATA, XHCI initialization
- Configuration options through Intel BCT tool
- Rebase to a different base address through Intel BCT tool

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## **4.0**     ***Fixed Issues***

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The following table contains the fixed issues in this release:

- Request policy to active the patch fix using BIOS Mailbox to cater MPS VR bug with decay
- MEI driver got yellow bang and not disappear in Device manager when press hot key to pull up HDA\_SDO
- During POST if system BIOS pass NULL of UPD region pointer to FSPinitApi of FSP then system will hang
- MrcSetupVtt uses hard-coded value for CMD Target

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## 5.0 *Limitations*

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### 5.1 **Current Release**

- None

### 5.2 **Previous Releases**

- None

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## **6.0**     *Known Issues*

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### **6.1**     **Current Release**

- None

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## **7.0**      ***Where to Find the Release***

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This package can be found at CDI

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## **8.0**     ***Release Content***

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This release contains:

- Intel® FSP Integration Guide
- Intel® FSP Binary
- Binary Settings File (BSF)
- Release Notes

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## 9.0 Hardware and Software Compatibility

### 9.1 Supported Hardware

This Intel® Firmware Support Package (Intel® FSP) release is specifically targeted for 6<sup>th</sup> Generation Intel® Core™ Processor code-named SkyLake, SKL H Xeon® E3-1505L and E3-1515M.

### 9.2 Supported Operating Systems

This release can be installed on either a Windows\* or a Linux\* system. However, the Intel® FSP binary itself can be used with any software development environment to generate a complete boot loader solution.

The software in this release has been validated on customer reference boards (CRBs) with the boot loader and operating systems listed in the following table.

**Table 4. Operating System/Boot Loader Support**

| Product Family   | Boot Loader                     | Operating System                  |
|--|---------------------------------|-----------------------------------|
| 6 <sup>th</sup> Generation Intel® Core™ Processor code-named SkyLake | Coreboot* with the UEFI payload | Yocto Project*<br>Windows 10 Core |
| 6 <sup>th</sup> Generation Intel® Core™ Processor code-named SkyLake | SeaBios legacy payload          | Windows 7                         |
| 6 <sup>th</sup> Generation Intel® Core™ Processor code-named SkyLake | U-Boot payload                  | Yocto Project*                    |

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## 10.0 Configuration

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Intel® Binary Configuration Tool (BCT) for Intel® Firmware Support Package (Intel® FSP) is provided as a companion tool and is intended to be used to:

- Customize the Intel® FSP binary configuration options based on the Binary Settings File (BSF).
- Rebase the Intel® FSP binary to a different base address.

It is recommended to use the latest version of Intel® Binary Configuration Tool with this release.

See *Intel® Binary Configuration Tool User Guide* for the usage instructions. See [Section 2.2, Related Documentation, Tools, and Packages](#), for information on where to download the tool.

### 10.1 Rebasing

When integrating Intel® FSP with a boot loader, place Intel® FSP at the same base address that it is configured to. Intel® Binary Configuration Tool can be used to rebase the Intel® FSP binary.

### 10.2 Microcode

Use the latest microcode when integrating Intel® FSP. Any processor that does not have the correct microcode update loaded is considered to be operating out of specification. See the integration guide for more details regarding microcode loading.

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