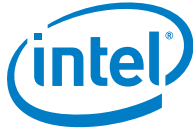


Intel® Firmware Support Package (Intel® FSP) for Intel® Pentium® and Celeron® Processor N3000 Product Families and Intel® Atom™ x5-E8000 Processor (Code-Named Braswell)

Release Version: 01010200 (MR1)

Release Notes

February 2016



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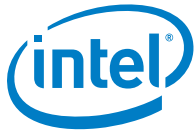


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Revision History

These are the main releases of Intel® Firmware Support Package (Intel® FSP) for Intel® Pentium® and Celeron® Processor N3000 Product Families and Intel® Atom™ x5-E8000 Processor (Code-Named Braswell):

Date	Revision	Description
November 2015	MR1	MR1 Release
August 2015	Gold1	Gold 001 Release
May 2015	Beta1	Beta 001 Release
December 2014	Alpha1	Alpha 001 Release

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1.0 Introduction

This package contains required binary images and collateral for the Intel® Firmware Support Package (Intel® FSP) supporting Intel® Pentium® and Celeron® Processor N3000 Product Families and Intel® Atom™ x5-E8000 Processor (code-named Braswell).

This Intel® FSP binary has been validated on a Cherry Hill customer reference board (CRB).

1.1 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 Intel® Pentium® and Celeron® Processor N3000 Product Families and Intel® Atom™ x5-E8000 Processor. This group includes, but is not limited to, system BIOS developers, boot loader developers, and system integrators.

1.2 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 1.4.

For technical support, see the Intel® Embedded Design Center (Intel® EDC) Support website at:

<http://www.intel.com/content/www/us/en/intelligent-systems/embedded-design-center-contact-us.html>

1.3 Terminology

The following terms are used in this document (arranged in alphabetic order):

Table 1. Terminology

Term	Description
API	Application Programming Interface
BIOS	Basic Input/Output System
BSF	Boot Setting File



Term	Description
CRB	Customer Reference Board
LPSS	Low Power Subsystem
MRC	Memory Reference Code
MTRR	Memory Type Range Register
SoC	System on Chip
UPD	Updatable Product Data
VBT	Video BIOS Table

1.4 Related Documentation, Tools, and Packages

Table 2. Related Documentation, Tools, and Packages

Name	Location
Integration Guide for Intel® Pentium® and Celeron® Processor N3000 Product Families and Intel® Atom™ x5-E8000 Processor	Available in this release package
Intel® Binary Configuration Tool for Intel® FSP	www.intel.com/fsp

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2.0 *Supported Features*

- Braswell C0 and D0 stepping SoC
- Memory Reference Code (MRC) Version 0x00330007
- MTRR initialization on all CPU threads
- Graphics initialization
- SoC I/O controllers initialization
- PCI Express* root port initialization
- Configuration options through Intel® Binary Configuration Tool
- Rebasing to a different base address through Intel® Binary Configuration Tool

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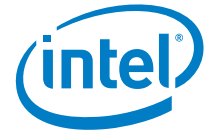


3.0 **Known Issues**

When using Intel® Binary Configuration Tool to configure the "Pnp-Power Performance" option, it displays as blank, enable, and disable. Leaving this field blank will leave a default value of 0x3. The settings for this field can be overwritten in Coreboot* by modifying the UPD PcdPnpSettings field in romstage_fsp_rt_buffer_callback in Coreboot* with the following options:

- 0x0, "Disable"
- 0x1, "Power"
- 0x2, "Performance"
- 0x3, "Power & Performance" — Default

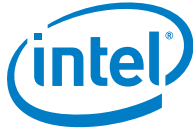
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4.0 *Limitations*

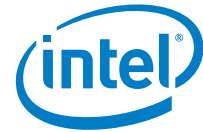
Secure Boot is not supported in this release.

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5.0 *Where to Find the Release*

The release material can be obtained from www.intel.com/fsp. On this page, you will find a section for the Intel® Pentium® and Celeron® Processor Families and Intel® Atom™ Processor with links to download the release.



6.0 Release Content

This release is compliant with Intel® Firmware Support Package (Intel® FSP) 1.1 External Architecture Specification. This document can be found on www.intel.com/fsp under the Documentation > Specifications section.

This release package contains the following:

- Intel® FSP Binary
- Boot Setting File (BSF)
- Integration Guide
- Release Notes
- Intel® FSP Sample Code
- Graphics Video BIOS Table (VBT) Files
- Graphics VBT BSF File

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7.0 *Integration Notes*

This release can be integrated with any boot loader of choice. The integration requirements are documented in the Integration Guide released in this package.

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8.0 Intel® Firmware Support Package (Intel® FSP) Configuration

When integrating Intel® Firmware Support Package (Intel® FSP) with a boot loader, the Intel® FSP image should be placed at the same base address that it is configured to.

The default base address for Intel® FSP is documented in the Intel® FSP Integration Guide.

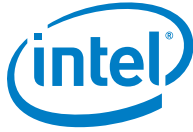
The base address for Intel® FSP can be configured to a different address using Intel® Binary Configuration Tool.

Intel® FSP also provides a set of configuration options for initializing the SoC and can be customized through Intel® Binary Configuration Tool.

Use Intel® Binary Configuration Tool version 3.2 or newer with this release of Intel® FSP.

The latest Intel® Binary Configuration Tool can be downloaded at <http://www.intel.com/fsp>.

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9.0 Graphics Configuration

Graphics initialization is supported in this release of Intel® Firmware Support Package (Intel® FSP). When integrating with a boot loader, a reference to the VBT should be passed in to Intel® FSP via the UPD PcdGraphicsConfigPtr field.

Preconfigured graphics VBT files for use with the Braswell RVP and the Cherry Hill CRB platform are included in this release. Additional configuration of the VBT graphics files is possible via the Binary Modification Program (BMP) utility using the VBT BSF. Contact your Intel representative for access to BMP.

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10.0 Change Log

Release 01010200 (MR1):

- Bug Fixes
 - Address Windows* 8.1 Yellow Bangs
 - Resolve Windows* 7 boot when CMOS is cleared
 - Resolve Windows* 8.1 LPSS Yellow Bang
 - Enable Turbo mode support
 - Resolve AzaliaVerbTable issue pre-OS

Release 01000200 (Gold1):

- Graphics Updates
- Bug Fixes

Release 01000001 (Beta1):

- Pre-Boot Graphics
- Fast Boot
- S3

Release 00070001 (Alpha1):

- Initial Intel® Firmware Support Package (Intel® FSP) release

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11.0 *Hardware and Software Compatibility*

11.1 Supported Operating Systems

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

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