



Intel® Xeon® D-2700 Processor Family (Code named Ice Lake-D) Intel® Firmware Support Package (Intel® FSP) for Edge Platforms

Release Notes

May 2026

Revision 004US



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Revision History

Date	Revision	Description
May 2026	004US	Added new FSP-M UPD data to Intel® FSP Configuration Firmware File: <ul style="list-style-type: none">• PcdNtbPpd• PcdNtbBarSizeOverride• PcdNtbSplitBar• PcdNtbBarSizeImBar1• PcdNtbBarSizeImBar2• PcdNtbBarSizeImBar2_0• PcdNtbBarSizeImBar2_1• PcdNtbBarSizeeEmBarSZ1• PcdNtbBarSizeeEmBarSZ2• PcdNtbBarSizeeEmBarSZ2_0• PcdNtbBarSizeeEmBarSZ2_1• PcbNtbXlinkCtlOverride
February 2024	003US	Introduction of new Intel® FSP-M UPDs for enablement and configuration of spread spectrum: PciePIISsc and SpslccClkSscSetting
December 2022	002US	Release notes for Intel® Firmware Support Package (Intel® FSP) Intel® Software Guard Extensions (Intel® SGX) Flex Release
September 2022	001US	Initial release of the document.

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1.0 Introduction

This package contains the required binary image(s) and collateral for the Intel® Xeon® D-2700 processor family Intel® Firmware Support Package (Intel® FSP).

This Intel® Firmware Support Package (Intel® FSP) is compliant with the *Intel® Firmware Support Package External Architecture Specification v2.5*.

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

To learn more about this product, refer to:

- New features listed in [Section 2](#) or in the help.
- Reference documentation listed in [Section 1.4](#).
- Installation instructions listed in [Section 4.1](#).

1.1 Component Information

The software in this release has been developed and validated using the following information, as shown in [Table 1](#).

Table 1. Intel® FSP Component Information

Component	Version
Code Base	EDKII
Core Version	edk2_stable_202208
Memory Reference Code Version	0.0.4.246
Reference Code Build Version	0028.98

1.2 Bootloader Requirements

It is expected that the bootloader will perform the following:

- Configure the HSUART device for the serial port. Refer to the UPD Data Region section of the *Intel® Xeon® D-2700 Processor Family Intel® Firmware Support Package (Intel® FSP) Integration Guide*.

Note: Intel® Xeon® D-2700 processor family Intel® FSP does NOT support a legacy serial port.

- Implement the following functions depending on the specific platform requirements:
 - Addition of support for the (A0 stepping) silicon
 - Addition of support for required boards/platforms
- Set up of the operating environment for the Intel® FSP Application Programming Interfaces (APIs) that includes, but is not limited to, the following:
 - CPU initialization
 - Loading microcode
 - Board-specific initialization, including PCI enumeration and post-PCI enumeration initialization
 - Serial AT Attachment (SATA) initialization
 - Peripheral Component Interconnect Express* (PCIe*) initialization
 - Universal Serial Bus (USB) initialization
 - Power management initialization (S-states, P-states, wake events, and thermal)
 - Advanced Configuration and Power Interface (ACPI) support
 - Payload to load/boot the OS/Port 80 display
 - Fast boot support
 - Booting from USB2/USB3 storage devices
 - Booting from eMMC* storage device
 - IA64 mode support

1.3 Acronyms and Terms

[Table 2](#) lists the acronyms and terms used in this document (in alphabetical order).

Table 2. Terminology

Term	Description
ACPI	Advanced Configuration and Power Interface
API	Application Programming Interface
BCT	Binary Configuration Tool
BIOS	Basic Input Output System
BKC	Best Know Configuration

Term	Description
BSF	Boot Settings File
CPU	Central Processing Unit
CRB	Customer Reference Board
eMMC	embedded Multi-Media-Card
FIA	Flexible I/O Adapter
Intel® FSP	Intel® Firmware Support Package
IBL	Intel® Business Link
MOW	Message of the Week
NS	Network Solutions
OS	Operating System
PCD	Platform Configuration Database
PCIe*	Peripheral Component Interconnect Express
RMT	Rank Margining Tool
SATA	Serial AT Attachment
SoC	System on a Chip
UPD	Updatable Product Data
USB	Universal Serial Bus

1.4 Related Documentation, Tools, and Packages

Log in to the Resource and Documentation Center (rdc.intel.com) to search for and download the document numbers listed in the following table. Contact your Intel field representative for access.

Note: Third-party links are provided as a reference only. Intel does not control or audit third-party benchmark data or the web sites referenced in this document. You should visit the referenced web site and confirm whether referenced data are accurate.

[Table 3](#) lists the processor family documentation.

Table 3. Intel® Firmware Support Package Documentation

Document	Document No./Location
Intel® Firmware Support Package External Architecture Specification v2.5	824483
Boot Setting File (BSF) Specification	Link
Binary Configuration Tool (BCT) for Intel® FSP	GitHub
Intel® Xeon® D-2700 Processor Family Intel® Firmware Support Package (Intel® FSP) Integration Guide	915060

[Table 4](#) lists the tools applicable to this Intel® FSP release.

Table 4. Tool Versions

Tool	Version
EDKII BaseTools	edk2_stable_202208
Binary Configuration Tool (BCT)	3.4.5
Intel® Server Platform Services (Intel® SPS) FW (CRB) version	SPS_SoC-X_05.00.04.204.0

1.5 Intended Audience

This document is for platform and system developers who intend to use an Intel® FSP based bootloader for the firmware solution for their overall design based on the Intel® Xeon® D-2700 processor family. This group includes system BIOS developers, bootloader developers, and system integrators.

1.6 Customer Support

Intel offers support for this software at the API level only, defined in the *Intel® Xeon® D-2700 Processor Family Intel® Firmware Support Package (Intel® FSP) Integration Guide*. If your field representative has created an account for you, you can submit support requests at <https://premiersupport.intel.com>.

2.0 New in This Release

2.1 New Features

This release includes the following new features and product changes:

- Build version **0028.98**
- Added new FSP-M UPD data to Intel® FSP Configuration Firmware File:
 - PcdNtbPpd
 - PcdNtbBarSizeOverride
 - PcdNtbSplitBar
 - PcdNtbBarSizeImBar1
 - PcdNtbBarSizeImBar2
 - PcdNtbBarSizeImBar2_0
 - PcdNtbBarSizeImBar2_1
 - PcdNtbBarSizeEmBarSZ1
 - PcdNtbBarSizeEmBarSZ2
 - PcdNtbBarSizeEmBarSZ2_0
 - PcdNtbBarSizeEmBarSZ2_1
 - PcbNtbXlinkCtlOverride

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3.0 Software Issues and Limitations

Known and resolved issues relating to the Intel® Firmware Support Package are described in this section.

3.1 Known Issues

None.

3.2 Resolved Issues

None.

3.3 Limitations

None.

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4.0 Where to Find the Release

This package can be found at <https://github.com/intel/FSP>.

4.1 How to Unpack This Release

This release can be unpacked on a Linux* or Windows* system.

4.1.1 For Linux*

Clone IdavilleFspBinPkg from GitHub.

Note: For guidance on how to add the Intel® FSP APIs into the bootloader code, refer to the *Intel® Xeon® D-2700 Processor Family Intel® Firmware Support Package (Intel® FSP) Integration Guide* (refer to [Table 3](#) for more information).

4.2 Microcode Update

The IA-32 processors can correct specific errata through the loading of an Intel supplied data block. This data block is referred to as a microcode update or system configuration data.

Each unique processor stepping/package combination has an associated microcode update that, when applied, constitutes a supported processor (that is, Specified Processor = Processor Stepping + Microcode Update). The proper microcode update must be loaded on each processor in a system. The proper microcode update is defined as the latest microcode update available from Intel for a given processor family, model, and stepping. Any processor that does not have the correct microcode update loaded is operating out of specification.

Intel recommends that future microcode updates be done as soon as the latest ones are released.

4.3 Debug

Debug messages are the primary way of debugging the Intel® FSP. Debug messages are suppressed for the production binary and enabled by default in the debug binary.

4.4 BIOS Shared Software Architecture (BSSA) Rank Margining Tool (RMT)

The RMT can flag areas of concern for platform developers and is disabled by default in this Intel® FSP release.

4.5 Component Extraction

The Intel® FSP binary is released as a single binary. Use the Python* script, SplitFspBin.py, to split the binary into the different components.

SplitFspBin.py is available at:

<https://github.com/IntelFsp/FSP/blob/master/Tools/SplitFspBin.py>

The sample command shown next creates three binaries named after the inputting the Intel® FSP binary and appending with “_M”, “_S”, and “_T”, respectively.

```
python SplitFspBin.py split -f <FSP Binary>
```

Example: python IntelFsp2Pkg\Tools\SplitFspBin.py split -f FspRel.bin

Example Output:

- FspRel_M.bin
- FspRel_S.bin
- FspRel_T.bin

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5.0 Release Content

This release package contains the following contents.

Table 5. Package Contents

Description	Filename	Path
Intel® FSP Binary File	FspRel.bin	ICELAKE-D_FSP_KIT/ IdavilleFspBinPkg/Hcc/FspBin
Boot Setting File (BSF)	FspRel.bsf	ICELAKE-D_FSP_KIT/ IdavilleFspBinPkg/Hcc/FspBin
Documents	915060_Intel_Xeon_D2700_FSP_IG_Rev004.pdf 918113_Intel_Xeon_D2700_FSP_RN_Rev004.pdf	ICELAKE-D_FSP_KIT/ IdavilleFspBinPkg/Hcc/Docs
Sample File	FsptUpd.h FspmUpd.h FspUpd.h	ICELAKE-D_FSP_KIT/ IdavilleFspBinPkg/Hcc/Include

6.0 Hardware and Software Compatibility

6.1 Supported Hardware

The Intel® FSP included in this release is specifically targeted for the Intel® Xeon® D-2700 processor family.

6.2 Supported Operating Systems

This release installs 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 bootloader solution.

The software in this release has been validated against the operating systems given in [Table 6](#) on the Customer Reference Boards (CRBs) for the Intel® Xeon® D-2700 processor family.

Note: While the Intel® FSP is validated on the slim bootloader and Fedora* operating systems on the respective platforms, it is designed to work without any changes on some other bootloader and operating systems.

Table 6. Operating System/Bootloader Support

Software Type	Name	Version
Bootloader	Slim Boot	SBID: SB_IDVH ISVN: 001 IVER: 001.000.001.002.00019
Firmware Component	Intel® Server Platform Services (Intel® SPS) Intel® Management Engine (Intel® ME) Firmware	SPS_SoC-X_05.00.04.204.0
Firmware Component	Intel® FSP	0028.98
Operating System	Yocto*	- Yocto Project* version: v4.0(Kirkstone) - Kernel version: v6.1.69 LTS 2022, v6.1.69-rt21 LTS 2022 RT
Tool	BCT	3.4.5

NOTE: Validation was done on Moro City with Intel® Xeon® D-2700 processor family QYDX and QYDZ QDFs only. ***

7.0 Configuration

A Binary Configuration Tool (BCT) for the 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 Boot Setting File (BSF).
- Rebase the Intel® FSP binary to a different base address (the default base address of the Intel® FSP for Intel® Xeon® D-2700 processor family is 0xFFF85000 for FSP-T, 0xFFDA8000 for FSP-M and 0xFFD3A000 for FSP-S).

Intel recommends using the latest BCT with this release.

Refer to the *BCT User Guide* for usage instructions. Refer to [Section 1.4](#) to obtain the BCT.

7.1 Intel® Firmware Support Package Information

To obtain the Intel® FSP binary information:

1. Run the Binary Configuration Tool.
2. Click the Show Binary Description command button.
3. Select the Intel FSP binary. For this release, the binary included is named:
 - a. FspRel.bin (release version)
4. Click Open. Another window will open and show the Intel FSP binary information.
5. Click OK to close the window.

The following information is displayed in the tool:

FSP-M Header Details.....
 This FSP supports the following:
 ICXD

Build: 0028.D98
 FSP Version: 0.0.28.98
 FSP Header:
 Signature: FSPH
 Header Length: 0x58
 Header Revision: 0x4

SpecVersion: 0x21
Image Revision: 0x2898
Image ID: ICXD-FSP
Image Size: 0x1e5000
Image Base: 0xffdb1000
Image Attribute: 0x20030002
Configuration Region Offset: 0x18c
Configuration Region Size: 0x23b
API Entry Num: 0x0
Temp RAM Init Entry: 0x0
FSP Init Entry: 0x0
Notify Phase Entry: 0x0
FSP Memory Init Entry: 0x4b8
Temp RAM Exit Entry: 0x4c2
FSP Silicon Init Entry: 0x0

FSP Extended Header:
Signature: FSPE
Header Length: 0x18
Header Revision: 0x1
FSP Producer Id: INTELC
FSP Producer Revision: 0x1

FSP-T Header Details.....
This FSP supports the following:
ICXD

Build: 0028.D98
FSP Version: 0.0.28.98
FSP Header:
Signature: FSPH
Header Length: 0x58
Header Revision: 0x4
SpecVersion: 0x21
Image Revision: 0x2898
Image ID: ICXD-FSP
Image Size: 0x6000
Image Base: 0xffff96000
Image Attribute: 0x10030002
Configuration Region Offset: 0x18c
Configuration Region Size: 0x80
API Entry Num: 0x0
Temp RAM Init Entry: 0x551
FSP Init Entry: 0x0
Notify Phase Entry: 0x0
FSP Memory Init Entry: 0x0

Temp RAM Exit Entry: 0x0
FSP Silicon Init Entry: 0x0

FSP Extended Header:
Signature: FSPE
Header Length: 0x18
Header Revision: 0x1
FSP Producer Id: INTELC
FSP Producer Revision: 0x1

FSP-S Header Details.....
This FSP supports the following:
ICXD

Build: 0028.D98
FSP Version: 0.0.28.98
FSP Header:
Signature: FSPH
Header Length: 0x58
Header Revision: 0x4
SpecVersion: 0x21
Image Revision: 0x2898
Image ID: ICXD-FSP
Image Size: 0x91000
Image Base: 0xffd20000
Image Attribute: 0x30030002
Configuration Region Offset: 0x18c
Configuration Region Size: 0x125
API Entry Num: 0x0
Temp RAM Init Entry: 0x0
FSP Init Entry: 0x0
Notify Phase Entry: 0x378
FSP Memory Init Entry: 0x0
Temp RAM Exit Entry: 0x0
FSP Silicon Init Entry: 0x382

FSP Extended Header:
Signature: FSPE
Header Length: 0x18
Header Revision: 0x1
FSP Producer Id: INTELC
FSP Producer Revision: 0x1

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