



Intel® Manycore Platform Software Stack (Intel® MPSS)

README (Windows*)

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Document Number: 328510-001US

Revision: 5.2

World Wide Web: <http://www.intel.com>



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Revision History

Document Number	Revision Number	Description	Revision Date
<XXXX>	0.1	Initial release	November 2012
<XXXX>	0.2	Updated formatting in MS Word. Revised text.	December 2012
328510-001	0.3	Updated formatting. Added tables, images. Revised text.	January 2013
328510-001	0.4	Revised text in Sections 2.2.2 and 2.3.	January 2013
328510-001	0.5	Moved Section 6 up to Section 2.2.5. Added note to Section 2.2.5.	February 2013
328510-001	0.6	Revised text in Section 2.2.5, in items 1 and 3.	March 2013
328510-001	0.7	Added text to Section 2.2.5, item 3.	March 2013
328510-001	0.8	Added new Sections 2.4 and 6.1. Revised text in Sections 2.2.2, 2.2.4, 2.5 (formerly Sec. 2.4), 3.1, 3.2, and 6.3 (formerly Sec. 6.2). Revised Table 2.	March 2013
328510-001	0.9	Revised text in Sections 6.3.	March 2013
328510-001	1.0	Revised text in Section 2.2.5, in item 3.	March 2013
328510-001	1.1	Revised text in Sections 2.2.2, 2.2.3, 3, 3.2, 5, 6.1, and 6.2. Revised Table 2. Removed Section 2.6.	March 2013
328510-001	1.2	Added new Section 5. Updated internal links.	March 2013
328510-001	1.3	Added new section for Micsmc (now Section 5). Updated internal link.	April 2013
328510-001	1.4	Revised text in Section 7, in item 16.	April 2013
328510-001	1.5	Revised text in Sections 6.1, 6.2, 8.1, and 8.2.	April 2013
328510-001	1.6	Minor corrections, trademark symbols.	April 2013
328510-001	1.7	Added Windows* 8 and Windows* Server 2012 to supported operating systems in Section 2.1. Revised note in Section 7.	April 2013
328510-001	1.8	Restored Section 2.6. Removed Sections 3.1 and 3.2. Revised text in Sections 2.2.1, 3, 5, 8.1	April 2013
328510-001	1.9	Added note to Section 2.2.2.	April 2013
328510-001	2.0	Added compliance information to Section 1.	April 2013



328510-001	2.1	Revised Table 2. Revised text in Sections 2.2.1 and 3.	April 2013
328510-001	2.2	Added new content and subsections to Section 7.	May 2013
328510-001	2.3	Revised text in Sections 2.1 and 2.2.1.	May 2013
328510-001	2.4	Added Section 9.1. Revised text in several sections.	May 2013
328510-001	2.5	Fixed page numbering issue.	June 2013
328510-001	2.6	Added Sections 2.2.4.1 and 6.1.1. Revised text in several sections.	June 2013
328510-001	2.7	Moved Sections 7 and 8 to MPSS Boot Configuration Guide (Windows*).	June 2013
328510-001	2.8	Moved Section 3 content into Section 2.2.3. Moved Sections 2.4 through 6.2 to the MPSS Users Guide (Windows*).	June 2013
328510-001	2.9	Minor corrections.	June 2013
328510-001	3.0	Revised text in Sections 2.1, 2.2.2, and 2.2.3.	June 2013
328510-001	3.1	Revised text in Sections 2.1, 2.2.1, 2.2.2, and 2.2.5.	August 2013
328510-001	3.2	Revised supported OS list in Section 2.1.	August 2013
328510-001	3.3	Revised Sections 2.1, 2.2.2, and 2.2.5.	August 2013
328510-001	3.4	Revised Section 2.2.2.	August 2013
328510-001	3.5	Revised Section 2.2.5.	August 2013
328510-001	3.6	Added Section 2.2.2.1. Revised Section 2.2.2.	August 2013
328510-001	3.7	Removed Section 2.2.4.1. Revised Section 2.2.4.	August 2013
328510-001	3.8	Revised Section 2.2.2.1.	August 2013
328510-001	3.9	Revised Sections 1, 2, 2.1, 2.2, and 2.2.2.1.	August 2013
328510-001	4.0	Revised Sections 2.1, 2.2.1, 2.2.2, and 2.2.5.	September 2013
328510-001	4.1	Revised Sections 2.2.2 and 2.2.4.	September 2013
328510-001	4.2	Revised Section 2.2.3 and Table 1.	September 2013
328510-001	4.3	Revised Section 2.2.3.	September 2013
328510-001	4.4	Added Section 2.2.2.1.	September 2013
328510-001	4.5	Revised Sections 2.2.3 and 2.2.5.	September 2013
328510-001	4.6	Revised Section 2.2.3.	September 2013



328510-001	4.7	Revised Section 2.2.2.1.	October 2013
328510-001	4.8	Removed Table 2. Revised Section 2.2.3.	October 2013
328510-001	4.9	Revised Sections 1.0, 2.0, 2.2, and 2.2.2.2.	November 2013
328510-001	5.0	Revised Sections 1.0, 2.0, 2.2, and 2.2.2.2.	December 2013
328510-001	5.1	Revised Sections 1.0, 2.0, 2.2, and 2.2.2.2.	December 2013
328510-001	5.2	Revised Section 2.1.	January 2014



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1 About this Document

This README is for the Intel® Manycore Platform Software Stack (Intel® MPSS) build revision 3.2. This Intel® MPSS 3.2 release encompasses the Microsoft Windows* driver and supporting tools.

Export Compliance: ECCN = 5D992a; ECCN = EAR99

1.1 Intended Audience

This document pertains to systems containing Intel® Xeon Phi™ coprocessor. It is intended for system administrators and other IT professionals who are responsible for installing and configuring computer hardware and software.

1.2 Conventions and Symbols

In this document, lines preceded by `user_prompt>` are used to represent a Windows* command prompt; text following this string on the same line represents commands to be executed in a Windows* command window. Table 1 lists other conventions used in this document.

Table 1 Conventions and Symbols used in this Document

<code>This type style</code>	Indicates an element of syntax, reserved word, keyword, filename, computer output, command, or part of a program example. The text appears in lowercase unless uppercase is significant.
This type style	Used to highlight the elements of a graphical user interface such as buttons and menu names.
<i>This type style</i>	Indicates a placeholder for an identifier, an expression, a string, a symbol, or a value. Substitute one of these items for the placeholder. Also used to indicate new terms, URLs, email addresses, filenames, and file extensions.
[<i>items</i>]	Indicates that the items enclosed in brackets are optional.
{ <i>item</i> <i>item</i> }	Indicates to select only one of the items listed between braces. A vertical bar () separates the items.
... (ellipses)	Indicates that you can repeat the preceding item.
\ (backslash)	Indicates continuation of a command onto the next line in the document.



2 Installation Instructions

This section outlines the system requirements and steps to install the Intel® MPSS 3.2 Windows* package.

Detailed **configuration** information and procedures appear in the Intel® MPSS User's Guide (Windows*) (Windows_MPSS_Users_Guide.pdf).

2.1 Requirements

Before installing the Intel® MPSS driver, the following requirements must be met:

- Administrator privileges are required to install the Intel® MPSS 3.x release.
- Supported operating system. Currently supported operating systems include:
 - Microsoft Windows* 7 Enterprise SP1 (64-bit)
 - Microsoft Windows* 8/8.x Enterprise (64-bit)
 - Microsoft Windows* Server 2008 R2 SP1 (64-bit)
 - Microsoft Windows* Server 2012 (64-bit)
 - Microsoft Windows* Server 2012 R2 (64-bit)
- Microsoft .NET Framework 4.0 or higher
- Supported hardware platform with at least one Intel® Xeon Phi™ coprocessor installed - The system requirements can be found here:
<http://software.intel.com/en-us/articles/which-systems-support-the-intel-xeon-phi-coprocessor>
- The host platform BIOS must support large Base Address Registers (or large BAR). Contact your BIOS vendor to ensure this is the case.
- Administrator privileges are required when executing Intel® MPSS commands.

2.2 Installation

This section describes the steps required to install the Intel® MPSS 3.2 release on the Intel® Xeon Phi™ coprocessor.

2.2.1 Preliminary Steps

1. Verify the BIOS setting "Memory Mapped I/O above 4GB" (or similar) is enabled. This setting should be in the advanced PCI configuration menu in the BIOS settings.
2. (This step is only required if test-signing was previously turned on) Test-signing must be turned off to allow the normal Windows* signing process to complete. Execute the following sequence in a command window (select **Run as Administrator**):

```
user_prompt> bcdedit /deletevalue loadoptions
```




```
user_prompt> bcdedit -set TESTSIGNING OFF
```

3. Restart the computer.

The change will take effect after computer is restarted.

2.2.2 Install the Driver

NOTE: If a previous pre-release version of the Intel® Xeon Phi™ software is installed, use Windows* Control Panel to uninstall it prior to installing the current version.

NOTE: To avoid conflict between pre-release versions of binary utilities for the Intel® Xeon Phi™ coprocessor native compiler, delete the C:\Program Files\Intel\MPSS directory after uninstalling pre-release versions of Intel® MPSS software via control panel.

- 1) Unzip the Intel® Xeon Phi™ software package.
- 2) Double-click the file *Intel(R) Xeon Phi(TM) coprocessor.msi*. Follow all prompts to install Intel® MPSS software on the system.
- 3) If the Windows Security pop-up appears, select the **Always trust software from Intel®** check box during installation.

NOTE: If a pre-release version of the Intel® Xeon Phi™ software was previously installed, it is necessary to stop and then restart the Intel® Xeon Phi™ coprocessors.

2.2.2.1 Localized Intel® Xeon Phi™ Software Installation

The Intel® Xeon Phi™ software installers can be set to display dialog boxes in English, Japanese or Chinese. The default language setting is English. An extra step is required to localize the MSI files to display dialog boxes using Japanese or Chinese language.

There are four transform files (.mst) stored in a sub-folder `\mpss-3.x\languages\` in the `mpss-3.x.windows.zip` file:

- ja.mst
- ja_essentials.mst
- zh-CN.mst
- zh-CN_essentials.mst

For Japanese translation of the dialog boxes, *ja.mst* and *ja_essentials.mst* are required. For Chinese translation of the dialog boxes, *zh-CN.mst* and *zh-CN_essentials.mst* are required.

For example, to install *Intel(R) Xeon Phi(TM) coprocessor essentials.msi* using Chinese translation in the dialog boxes, execute the following in a command window:

```
msiexec /I "Intel(R) Xeon Phi(TM) coprocessor essentials.msi" \  
TRANSFORMS=languages\zh-CN_essentials.mst
```

After executing this step, the dialog boxes will appear in Chinese when the end-user installs the MSI from the command line, or double-clicks the MSI.



NOTE: The language used for the initial installation will persist for all subsequent interactions with that MSI (uninstall/modify/repair). To apply a new language transform, it is necessary to uninstall the MSI and then reinstall it specifying the new transform.

2.2.2.2 Unattended Intel® Xeon Phi™ Software Installation

- 1) In a command window, navigate to the directory that contains the Intel® Xeon Phi™ software (e.g. C:\Users*username*\Downloads\mpss-3.2-windows)

```
user_prompt> cd C:\Users\username\Downloads\mpss-3.2-windows
```

- 2) Enter the following command:

```
user_prompt> "Intel(R) Xeon Phi(TM) coprocessor.msi" /quiet /norestart
```

2.2.3 Update the Flash

It is necessary to update the SMC Bootloader for this release, as well as to install the latest flash for the Intel® Xeon Phi™ coprocessor. Execute the steps below to update.

NOTE: Firmware and flash images are located in the C:\Program Files\Intel\MPSS directory.

- 1) Check the status of the coprocessor(s):

```
user_prompt> micctrl -s
```

If the status for all of the coprocessors shows 'ready', skip to step 2. Otherwise, set the coprocessor(s) to a 'ready' state:

```
user_prompt> micctrl -r
```

```
user_prompt> micctrl -w
```

```
mic0: ready
```

- 2) Run from the command prompt:

```
user_prompt> cd C:\Program Files\Intel\MPSS\bin
```

```
user_prompt> micflash -update -device all
```

- 3) If step 2 was successful, jump to step 9.

- 4) If the update fails with the following error message, continue to step 5:

```
ERROR: micflash: mic0: SMC update failed: SMC buffer size exceeded (0x1)
```

- 5) Reboot the host system.

- 6) Ensure that the status for the coprocessor(s) is 'ready' (same as step 1 above).

- 7) Run the following from the command prompt:

```
user_prompt> cd C:\Program Files\Intel\MPSS\bin
```

```
user_prompt> micflash -update ..\<Bootloader FLASH FILE> \  
-device all
```

NOTE: *<Bootloader FLASH FILE>* represents an SMC firmware file usually named *EXT_HP2_SMC_Bootloader_1_8_4326.css_ab*.



- 8) Re-run this command to update the flash:

```
user_prompt> micflash -update -device all
```
 - 9) Reboot the physical host system for all flash and SMC changes to take effect.
 - 10) After the physical host reboot is complete, it is necessary to fully restart the coprocessor(s):

```
user_prompt> micctrl -r  
user_prompt> micctrl -b
```
- For additional micflash options, refer to:

```
user_prompt> micflash -help
```

2.2.4 Boot the Coprocessors

- 1) At the command line, run the command:

```
user_prompt> micctrl --start
```

NOTE: After each power cycle of the host machine, the coprocessors are booted automatically, using the last booted configuration settings. Additionally, if a pre-release version of the Intel® Xeon Phi™ software was previously installed, it is necessary to stop and then restart the Intel® Xeon Phi™ coprocessors.

- 2) Confirm that the coprocessor is booted by pinging the card:

```
user_prompt> ping 192.168.1.100
```

NOTE: Examples in this README, as well as the MPSS User's Guide (Windows*), use the default IP address: 192.168.1.100

2.2.5 Installing Binutils

NOTE: To avoid conflict between pre-release versions of binary utilities for the Intel® Xeon Phi™ coprocessor native compiler, delete the C:\Program Files\Intel\MPSS directory after uninstalling pre-release versions of Intel® MPSS software via control panel.

The binary utilities for the Intel® Xeon Phi™ coprocessor native compiler are included in the Intel® Xeon Phi™ installation zip file package. The binary utilities are required in order to compile and run applications for the Intel® Xeon Phi™ coprocessor. To install the binary utilities:

- 1) Unzip the Intel® Xeon Phi™ installation zip file package.
- 2) Install Intel(R) Xeon Phi(TM) coprocessor.msi (if not previously installed), as in Sec. [2.2.2](#).
- 3) Install Intel(R) Xeon Phi(TM) coprocessor essentials.msi (this installs Binutils).

NOTE: Installing Binutils is mandatory when using offload or cross compiler.