



# Intel<sup>®</sup> Manycore Platform Software Stack (Intel<sup>®</sup> MPSS)

README (Windows\*)

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# 1 About this Document

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This README is for the Intel® Manycore Platform Software Stack (Intel® MPSS) build revision 3.3. This Intel MPSS 3.3 release encompasses the Microsoft Windows\* driver and supporting tools.

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## 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.   |
| <b>This type style</b>        | 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

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This section outlines the system requirements and steps to install the Intel MPSS 3.3 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\* 8/8.1 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 3.3 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® Xeon Phi™ 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® Xeon Phi™ 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\

```
user_prompt> cd C:\Users\
```

- 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> 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.

**NOTE:** Steps 6-10 are unnecessary for cards that are B1 or newer, or that already have SMC bootloader version 1.8 or newer.

- 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 Windows Cross-SDK

**NOTE:** To avoid conflicts 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.

**NOTE:** The Windows SDK does not contain header files necessary for cross-compiling Linux kernel netfilter modules.

The SDK for the Intel® Xeon Phi™ coprocessor native compiler is included in the Intel® Xeon Phi™ installation zip file package. The SDK is 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 the SDK).

**NOTE:** Installing the SDK is mandatory when using offload or cross compiler.