

Intel[®] Manycore Platform Software Stack (Intel[®] MPSS)

README (Windows*)

March 2017

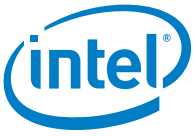
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Document Number: 328510-001US

Revision: 3.8

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



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Revision History

Document Number	Revision Number	Description	Revision Date
328510-001	3.8	Revised for the release of the Intel® MPSS 3.8	August 2016
328510-001	3.7	Revised for the 3.7 Intel® MPSS version	January 2016
328510-001	3.6	Revised the document	September 2015
328510-001	3.5	Added section on Upgrading an installation	March 2015
328510-001	3.5	Upgraded docs to Intel Standard	February 2015
328510-001	3.3	Added instructions for downgrade	June 2014
328510-001	3.3	Corrected OS support statement Section 2.1	April 2014
328510-001	3.2	Revised Section 2.1.	January 2014



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1 About this Document

This README is for the Intel® Manycore Platform Software Stack, which encompasses the Microsoft Windows* driver and supporting tools.

Export Compliance: ECCN = 5D992a; ECCN = EAR99

1.1 Intended Audience

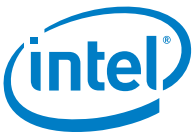
This document pertains to systems containing Intel® Xeon Phi™ Coprocessor. It is intended for system administrators and other IT professionals who are responsible for installing and configuring computer hardware and software.

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

<i>This type style</i>	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.
User>	Denotes a command entered on the host with user privileges.
Admin>	Denotes a command entered on the host with administrative (root) privileges.
[<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.
... (ellipsis)	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 Windows* package.

Detailed **configuration** information and procedures appear in the Intel® MPSS User's Guide for Windows* (*MPSS_Users_Guide-windows.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
- One of supported operating system:
 - Microsoft Windows* 8.1 Enterprise (64-bit)
 - Microsoft Windows* 10 (64-bit)
 - Microsoft Windows* Server 2012
 - Microsoft Windows* Server 2012 R2
 - Microsoft Windows* Server 2016
- Supported hardware platform with at least one Intel® Xeon Phi™ Coprocessor installed; system requirements can be found by following the link below:
<http://software.intel.com/en-us/articles/which-systems-support-the-intel-xeon-phi-coprocessor>
- The host platform BIOS supporting large Base Address Registers (or large BAR). Contact your BIOS vendor to ensure this is the case.
- Administrator privileges for execution of Intel® MPSS commands.

2.2 Installation

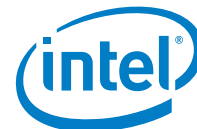
This section describes the steps required to install the Intel® MPSS.

2.2.1 Preliminary Steps

Verify whether 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.

2.2.2 Intel® Xeon Phi™ Software Installation

- 1) Extract the *mpss-<version>-windows.zip* file.
- 2) Double-click the file *Intel(R) Xeon Phi(TM) Coprocessor.exe*.
- 3) Select the language for the installation (Chinese (simplified), English, Japanese) and click **OK**. Click **Next**.



- 4) If prompted, install Microsoft* Visual C++ Redistributable 2012 package.
- 5) Read the License Agreement. If you agree, select 'I accept the terms of this license agreement' and click **Next**.
- 6) Now you can change the **Destination** folder or keep it as the default (*C:\Program Files\Intel\MPSS*) and click **Next**.
- 7) Choose the setup type: **Complete** (default) or **Custom** and click **Next**.
- 8) Click **Install** and wait for the installation to complete. If the Windows Security pop-up appears, select the **Always trust software from Intel®** check box during installation.

Note: Initialize default configuration in order to successfully boot the coprocessors after initial installation and after each software stack update. The default configuration is loaded by running the *micctrl -g* command or by manually booting the coprocessors with *micctrl --start* (as in [Section 2.2.4](#)). Trying to boot the coprocessors without initializing the default configuration (e.g. during system reboot) may cause errors and result in boot failure.

2.2.2.1 Unattended Intel® Xeon Phi™ Software Installation

- 1) In a command window, navigate to the directory that contains the extracted Intel® Xeon Phi™ software (for example: *C:\Users\<username>\Downloads\mpss-<version>*)

```
User> cd C:\Users\<username>\Downloads\mpss-<version>
```

- 2) Enter the following command:

```
User> "Intel(R) Xeon Phi(TM) coprocessor.exe" /s /v /qn  
/V"/quiet /norestart"
```

When using the unattended installation process, after entering the command it may take a few moments to complete the installation.

2.2.2.2 Upgrade Instructions

Upgrading the Intel® MPSS can be achieved by following instructions in [Section 2.2.2](#). Users may choose to manually uninstall the previous version or let the installer automatically search and remove previous release prior to installing the latest version.

2.2.3 Update the Flash

It is necessary to update the coprocessor's SMC Bootloader and flash image for this release. Execute the steps below to perform the update.

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

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

```
Admin> 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:

```
Admin> micctrl -r
```

```
Admin> micctrl -w
```

```
mic0: ready
```

- 2) Run from the command prompt:

```
Admin> 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 coprocessors with B1 stepping, or newer, or that already have SMC bootloader version 1.8 or newer. To verify the card stepping run the command:

```
Admin> micinfo -group Board
```

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

```
Admin> 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:

```
Admin> micflash -update -device all
```

- 9) Reboot the physical host system for all flash and SMC changes to take effect.

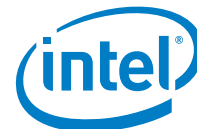
- 10) After the physical host reboot is complete, it is necessary to fully restart the coprocessor(s):

```
Admin> micctrl -r
```

```
Admin> micctrl -b
```

For additional micflash options, refer to:

```
Admin> micflash -help
```

2.2.4 Boot the Coprocessors

- 1) Run the command:

```
Admin> micctrl --start
```

After each power cycle of the host machine, the coprocessors are booted automatically using the last booted configuration settings. Additionally, after upgrading the Intel® MPSS it is necessary to restart the coprocessors.

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

```
User> ping 192.168.1.100
```

Examples in this *README* and in the Intel® MPSS User's Guide (Windows*) assume that coprocessor's IP address is 192.168.N+1.100 for each coprocessor micN within the system.

2.2.5 Installing Windows* Cross-SDK

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

The SDK for the Coprocessor's native compiler is included in the 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) Extract the *mpss-<versopm>-windows.zip* file.
- 2) Install *Intel(R) Xeon Phi(TM) Coprocessor.exe* (if not previously installed), as in [Section 2.2.2](#)
- 3) Install *Intel(R) Xeon Phi(TM) Coprocessor essentials.exe* (this installs the SDK).

Installing the SDK is mandatory when using offload programming directive or cross compiler.

It is not necessary to uninstall previous versions of the software. The installer will automatically search for a previously installed version and remove it prior to installing current version.