

# Intel® System Studio 2018 Update 2

## Release Notes

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# 1 Introduction

This document provides an overview of the **Intel® System Studio 2018 Update 2** product and provides pointers to where you can find new features and changes, the release history, installation instructions additional product information and references to articles and whitepapers.

The Intel® System Studio has three editions, covered by three different licenses: Composer Edition, Professional Edition, and Ultimate Edition. Each edition consists of a separate download packages for Linux\* and Windows\* hosts.

The target audience is the performance-orientated C/C++ embedded/mobile/wearable/IoT developer who is developing on Linux\*, Windows\*, and/or macOS\* host environments for Embedded Linux\*, Wind River Linux\*, and/or Android\* targets. For more details please refer to the *Product Contents and Cross Reference* section to identify which sections of this document are relevant for the edition of Intel® System Studio you are using.

For full product information for the previous release, as well as links to evaluation licenses (30-days), please refer to Intel® System Studio product webpage <https://software.intel.com/intel-system-studio>.

For licensing information, please refer to the Intel End User Licensing Agreement (EULA) available at <https://software.intel.com/articles/end-user-license-agreement>.

## 2 System Requirements

System requirements can be found online here: <https://software.intel.com/articles/intel-system-studio-system-requirements>

## 3 What's New

Information on the new features can be found online here:

<https://software.intel.com/en-us/articles/whats-new-in-intel-system-studio-update-2>

## 4 Product Contents and Cross Reference

The following table outlines which versions of the Intel® Software Development Tools are present in Intel® System Studio 2018 Update 2.

Component	Version
<b>Composer Edition</b>	
Docker* based application workflow	2018
Eclipse* IDE	Neon
GNU* GDB and source	7.12
Intel® C/C++ Compiler	18.0 Update 4
Intel® Data Analytics Acceleration Library (Intel® DAAL)	2018 Update 3
Intel® Debugger for Heterogeneous Compute	2018
Intel® Integrated Performance Primitives (Intel® IPP)	2018 Update 3
Intel® Math Kernel Library (Intel® MKL)	2018 Update 3
Intel® Threading Building Blocks (Intel® TBB)	2018 Update 4
IoT Connectors (UPM / MRAA / Cloud Connectors)	2018
MRAA IO Communication Layer	1.9.0
Sample Applications	N/A
UPM Sensor and Actuator Library	1.6.0
<b>Professional Edition</b>	
Composer Edition	N/A
Energy Analysis	0.1
Intel® Graphics Performance Analyzers (Intel® GPA)	See <a href="#">Link</a>

Intel® Inspector	2018 Update 3
Intel® SoC Watch for Android*	2.6.1
Intel® SoC Watch for Linux*	2.6.1
Intel® SoC Watch for Windows*	2.6.1
Intel® VTune™ Amplifier and Performance Snapshots	2018 Update 3
<b>Ultimate Edition</b>	
Professional Edition	N/A
Intel® Debug Extensions for WinDbg*	2018
Intel® System Debugger (System Debug and System Trace)	2018

Starting with Intel® C++ Compiler 18.0 Gold Release, Intel® Cilk™ Plus will be marked as deprecated and eventually removed in a future release. To learn how to migrate to OpenMP\* or Intel® Threading Building Blocks, see this article (link <https://software.intel.com/en-us/articles/migrate-your-application-to-use-openmp-or-intelr-tbb-instead-of-intelr-cilk-plus>).

Release notes for individual components are linked to from the main release notes page: <https://software.intel.com/en-us/articles/intel-system-studio-release-notes>

In this document when we refer the directory where the product is installed we use this label to represent the path: <INSTALL\_DIR>

Where the <INSTALL\_DIR> is by default:

**Windows\* Host:**

**Windows\* Target:** C:\Program Files (x86)\IntelSWTools

**Linux\* Target:** C:\IntelSWTools\system\_studio\_2018

**Linux\* Host:**

**sudo/root install:** /opt/intel/system\_studio\_2018

**macOS\*:**

/opt/intel/system\_studio\_2018

## 4.1 Intel® Software Manager

The Intel® Software Manager, automatically installed with the Intel® System Studio product, is a graphical tool and with Windows\* Target package it provides a simplified delivery mechanism for product updates, current license status, news on all installed Intel Software Development.

It can also be manually started as well from these locations:

- Linux\*: /opt/intel/ism/ism
- Windows\* 8.x/10: Launch the *Intel® Software Manager* application for the start screen
- Windows\* 7: Start / Intel System Studio 2018 / Intel Software Manager

The software manager from this release replaces any previous installed software manager and manages all installed Intel® Software Development Tools licenses on the system.

When you install Intel® System Studio, we collect information that helps us understand your installation status and environment. Information collected is anonymous and is not shared outside of Intel. See <https://software.intel.com/en-us/articles/data-collection> for more information on what is collected and how to opt-out.

You can also volunteer to provide Intel anonymous usage information about these products to help guide future product design. This option, the Intel® Software Improvement Program, is not enabled by default – you can opt-in during installation or at a later time, and may opt-out at any time. For more information please see <http://intel.ly/SoftwareImprovementProgram>

## 5 Technical Support and Documentation

### 5.1 Technical Support

Registration entitles you to free technical support, product updates and upgrades for the duration of the support term.

To submit issues related to this product please visit the [Intel Online Service Center](#) webpage, click “Request Support” and search for the product **Intel System Studio** to submit your support request.

Additionally you may submit questions and browse issues in the [Intel® System Studio User Forum](#).

For additional information about how to find Technical Support, please visit: <https://software.intel.com/intel-system-studio-support>.

**Note:** If your distributor provides technical support for this product, please contact them for support rather than Intel.

## 5.2 Documentation Locations

The main page for additional information and to download the package can be found here: <https://software.intel.com/system-studio>

You can find documentation in the following locations:

- [Featured Documentation Page \(online\)](#): This page has links to product release notes, what's new information and key articles. You can also check this page for documentation updates.
- [Getting Started Guides \(online\)](#): Links to getting started guides for all Intel® System Studio components.
- In-Package Documentation (offline): Documentation is located inside the product installation directory at: <INSTALL DIR>/documentation\_2018/.
- [Developing C/C++ Projects with Intel System Studio](#)
- [Developing Java\\* Projects with Intel System Studio](#)
- [Developing Wind River Linux\\* Applications with Intel System Studio](#)

## 6 Installation Notes and Log Files

Please refer to the [System Requirements](#) to check the prerequisites for installing the Intel® System Studio 2018 Update 2.

If you run into issues installing the tools then you can refer to the README provided with the installer for more information.

Additionally if you would like to see the install logs (helpful for reporting issues) you can find them here:

Linux\* Host / Linux Target:

The Intel System Studio installer writes log files to /tmp, one for the user and one for root (when the installer is run with sudo). These log file names start with intel.pset, end with a timestamp and have the extension .log.

Windows\* Host / Linux\* Target:

The Intel System Studio installer writes log files to %TEMP%\Intel. These log file names start with intel.pset, end with a timestamp and have the extension .log

Windows\* Host / Windows\* Target:

The Intel System Studio installer writes log files to %TEMP%\pset\_tmp\_ISS2018WT\_[username]. These log files will be in the log directory in the directory with the name matching the date of collection and have the extension .log

macOS\* Host / Linux\* Target:

The Intel System Studio installer writes log files to the system temp directory (echo \$TMPDIR), one for the user and one for root (when the installer is run with sudo). These log file names start with intel.pset, end with a timestamp and have the extension .log.

## 7 Known Issues and Limitations

For the complete list of known issues of individual Intel® System Studio components please refer to the individual component release notes: <https://software.intel.com/en-us/articles/intel-system-studio-release-notes>

### 7.1 General Known Issues and Limitations

#### 7.1.1 <INSTALL\_DIR> must be Limited to 35 Characters

The length of the destination installation folder (in this document also referred to as <INSTALL\_DIR>) MUST NOT exceed the length of 35 characters.

The default destination folders are:

**Windows\* Host – Windows\* Target:** C:\Program Files (x86)\IntelSWTools

**Windows\* Host – Linux\* Target:** C:\IntelSWTools\system\_studio\_2018

**Linux\* Host – Linux\* Target:** /opt/intel/system\_studio\_2018

**macOS\* Host – Linux\* Target:** /opt/intel/system\_studio\_2018

If you decided to specify a customized destination folder, please take care to not exceed this 35-characters limitation.

### **7.1.2 Running online-installer behind proxy server may fail**

Running online-installer for the Windows\* target package behind a proxy server may produce the error: "Connection to the IRC site cannot be established". If the proxy settings issue cannot be resolved, you need to download the full package (from a different computer) and run the installer from the downloaded .exe file.

### **7.1.3 Some hyperlinks in HTML documents may not work when you use Internet Explorer\***

Try using another browser, such as Google Chrome\* or Mozilla Firefox\*, or right-click the link, select Copy shortcut, and paste the link into a new Internet Explorer\* window.

## **7.2 Issues and Limitations by Component**



Component	Description	Implication	Workaround
Docker* based application workflow	Docker is not provided with install	Container based project will fail on these systems without additional setup	Users will need to follow one of these guides to build their projects: <ul style="list-style-type: none"> <li>• <a href="https://software.intel.com/en-us/intel-system-studio-docker-install-windows">https://software.intel.com/en-us/intel-system-studio-docker-install-windows</a></li> <li>• <a href="https://software.intel.com/en-us/intel-system-studio-docker-install-linux">https://software.intel.com/en-us/intel-system-studio-docker-install-linux</a></li> <li>• <a href="https://software.intel.com/en-us/intel-system-studio-docker-install-macos">https://software.intel.com/en-us/intel-system-studio-docker-install-macos</a></li> </ul>
Docker* based application workflow	Installing Intel® System Studio onto a virtual machine is only supported by and has only been tested for Ubuntu* Desktop 16.04 Linux* guest virtual machines. Other guest operating systems (Windows* and macOS*) have not been tested and are not supported configurations.	Certain features of Intel® System Studio (e.g., Docker* and Intel® VTune™ Amplifier) require access to low-level CPU features that are not supported by all virtual machine managers (VMMs or Hypervisors) or are not enabled by default.	Install Intel® System Studio onto a "real" Windows* or macOS* system, not a guest VM. If you must use a VM we recommend you use an Ubuntu 16.04 guest VM with "nested virtualization" enabled and have at least 4GB of RAM dedicated to the VM.
Docker* based application workflow	On Windows* Host / Linux* targets when we create a new project using the "Application Development" -> "C/C++ project for building in a container and running on Linux" workflow, the "Run As" option (when right clicking on the newly created project) displays 2 options: "Intel System Studio" and "Local C/C++ Application."	The "Local C/C++ Application" option will not work as it is not valid for this project type.	Only select "Intel System Studio" when using this "Run As" menu
Docker* based application workflow	Removal of Docker images and containers created by Intel System Studio (especially while Intel System Studio is running) may result in errors. Manual modification of Docker images and containers created by Intel System Studio may result in errors.	Existing projects may stop working. New projects in an existing workspace will not work.	To recover after removing a container or an image, restart Intel System Studio. This should result in containers being re-created. In the case where both image and container have been removed, Intel System Studio should prompt the user to re-download the image. After the image has been re-downloaded, the container will be recreated.

Docker* based application workflow	When the proxy bypass includes non-default values (e.g., entries other than localhost and 127.0.0.1), the project creation internet connectivity check may fail even when a valid connection is available.	When this condition occurs, new projects for "building in a container" cannot be created.	Temporarily remove non-default entries from proxy bypass list when creating a new project. After project creation internet connectivity check succeeds, add the entries back to proxy bypass list.
Eclipse* Based IDE	On Red Hat* and CentOS* Hosts the welcome screen in the Intel® System Studio ide may be empty, non-responsive or display an error message.	Users will be unable to read welcome screen content.	User must install "epel-release" and "webkitgtk" packages using the following commands at a bash shell (in a terminal window):  \$ sudo yum install epel-release \$ sudo yum install webkitgtk
Eclipse* Based IDE	If you choose to use GCC when creating a project using the "Project to build and run on this Linux operating system" option, the build profiles will contain incorrectly configured optimization level and debug options.	Difficult or impossible to debug your built application and debug option is specified for your release build.	Change the optimization level to -O0 in the "Debug" build configuration and remove the -g option from the "Release" build configuration. Alternatively, you can select each build configuration in the "Tool Chain Editor" property, change to a different toolchain and change back to correct the issue (right-click your project > Properties > Tool Chain Editor > Current toolchain).
Eclipse* Based IDE	Intel System Studio includes a JRE that does not include a JDK. Java application development requires that a JDK be installed on the host system (Java 8+).	A dialog is displayed indicating "Wrong or No JDK Found." After closing this dialog, the Installed JREs preference page is displayed.	After the JDK is installed, it must be added to the list of installed JREs in Intel System Studio Preferences -> Java -> Installed JREs. The easiest way to do this is to open the preference page, click "Search" and browse to the root of the JDK install directory on the host development system. Note: this must be done prior to creating a Java project in Intel System Studio.
GNU* GDB	By default the "Function call history" will be empty after enabling reverse debugging option.	The user cannot see any history in the Function call history window	Send "record btrace pt" command manually once debugging is started from the Debugger Console window.

How-to-Code Samples	How-to-code samples may not work for all target operating systems.	Samples might not compile for all target operating systems, resulting in build errors	None. Updates to these samples will be made over the next weeks / months and will be dynamically available.
Intel® Data Analytics Acceleration Library	Intel® DAAL Python API (a.k.a. pyDAAL) is provided as source.	When building it on Windows*, users may see warning messages.	Ignore the warnings, the messages do not indicate critical issues and do not affect the library's functionality.
Intel® Data Analytics Acceleration Library	Intel® DAAL Python API (a.k.a. pyDAAL) that built from the source does not work on OS X* El Capitan (version 10.11).	Users will be unable to use Intel® DAAL Python API (a.k.a. pyDAAL) that are built from the source on OS X* El Capitan (version 10.11).	Users can get the Intel Distribution of Python as an Anaconda package ( <a href="http://anaconda.org/intel/">http://anaconda.org/intel/</a> ), which contains a pre-built pyDAAL that works on OS X* El Capitan.
Intel® SoC Watch	“Eclipse Plugin for Energy Analysis” is not integrated into Eclipse during upgrade from Intel® System Studio 2018 Update 1.	Users are unable to create or run existing “Energy Analysis” projects.	Users can choose one of these ways to enable “Eclipse Plugin for Energy Analysis”: <ul style="list-style-type: none"> <li>• During upgrade installation, deselect “Eclipse Plugin for Energy Analysis.” After upgrade completes, install “Eclipse Plugin for Energy Analysis” using Modify installation mode.</li> <li>• Perform default upgrade. After upgrade completes, uninstall “Eclipse Plugin for Energy Analysis” and install it again using Modify installation mode.</li> </ul>
Intel® System Debugger	Problems may occur when connecting to Intel® Atom™ Processor Z36xx, Z37xx - 2 cores (Baytrail / MinnowBoard MAX*) with the new connection establishment method (TCA)	With the new connection establishment method, user will not be able to debug these targets.	Connect using older connection establishment method to debug these targets.
Samples	The following IoT samples show 50 or more false positive errors: aws-pub-sub, azure-amqp, azure-http, and azure-mqtt	Builds are unaffected, however, Intel® System Studio incorrectly shows 50 or more errors in the Problems List	In the project property's C/C++ General > Paths and Symbols view, Go to GNU C++, and find any directories starting with <code>/\${DOCKER_IMAGE}\${DOCKER_SYSROOT}</code> and replace it with <code>//includes-\${DOCKER_IMAGE}.\${DOCKER_IMAGE_TAG}</code>

Samples	When a project is created using the “Project to build and run on this Linux operating system” option, the “Matrix Multiplication – MKL” sample fails to compile.	The sample cannot be run or profiled.	Select the Intel Compiler -> Matrix Multiplication – ICC sample instead. Alternatively, with the Docker*-based application workflow component installed, select the C -> Intel Math Kernel Library -> Matrix Multiplication sample.
Visual Studio*	Installation of Intel® System Studio with Microsoft Visual Studio* 2017 integration hangs and fails on some systems.	User may see errors or the installation may complete successfully with no error/crashes, however, the integration to Visual Studio* 2017 is not installed.	Installing Visual Studio* 2017 version 15.3.3 may resolve this issue. For additional workaround options, see: <a href="https://software.intel.com/en-us/articles/intel-software-development-tools-integration-to-vs2017-issue">https://software.intel.com/en-us/articles/intel-software-development-tools-integration-to-vs2017-issue</a>
Wind River Linux* Kernel Integration	On Linux* development systems (hosts) the wr-iss-2018 “integration folder” contains some bad kernel build configuration files that are used for Wind River integration to build a Wind River Linux* LTS 17 image that includes Intel IPP, Intel MKL and other libraries that have been optimized for Intel Architecture processors.	User would be unable to build a Wind River Linux* 17 LTS kernel that includes the Intel IPP, Intel MKL and other libraries optimized for Intel Architecture processors.	Assuming default install path: Download the “ <a href="#">features.zip</a> ” file onto your host system Downloads folder and enter these commands in the terminal: \$ cd /opt/intel/system_studio_2018 # or to custom install folder \$ sudo unzip ~/Downloads/features.zip  When prompted to overwrite existing files, respond with ‘A’ to overwrite ‘All’ conflicting files.

## 8 Attributions

This product includes software developed at:

The Apache Software Foundation (<http://www.apache.org>).

Portions of this software were originally based on the following:

- software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.
- software copyright (c) 1999, Sun Microsystems., <http://www.sun.com>.
- the W3C consortium (<http://www.w3c.org>),
- the SAX project (<http://www.saxproject.org>)
- voluntary contributions made by Paul Eng on behalf of the Apache Software Foundation that were originally developed at iClick, Inc., software copyright (c) 1999.

This product includes updcrc macro,  
Satchell Evaluations and Chuck Forsberg.  
Copyright (C) 1986 Stephen Satchell.

This product includes software developed by the MX4J project  
(<http://mx4j.sourceforge.net>).

This product includes ICU 1.8.1 and later.  
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This product includes software from the book  
"Linux Device Drivers" by Alessandro Rubini and Jonathan Corbet,  
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This product includes hashtab.c.  
Bob Jenkins, 1996.

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