

# Intel® Software Guard Extensions SDK for Linux\* OS Release Notes

---

5 April 2017

Revision: 1.8 Open Source (Intel® SGX SDK version: [1.8.100.37689](#))

## Contents:

[Introduction](#)

[What's New](#)

[System Requirements](#)

[Known Issues and Limitations](#)

[Disclaimer and Legal Information](#)

## 1 Introduction

Intel provides Intel® Software Guard Extensions (Intel® SGX) SDK, a software isolation technology, to help you protect your applications.

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

### Product Contents

Intel® Software Guard Extensions SDK package includes:

- An Intel® Software Guard Extensions SDK installer for Linux\* OS. It includes binaries to develop enclave applications. The main components include:
  - Trusted libraries, including standard C library, C++ runtime support, C++ STL, and others
  - Development tools, including edger8r, signing tool, and others
  - Sample projects

## 2 What's New

Intel® Software Guard Extensions SDK includes the following changes in this release:

- Support for the TCMalloc library
- Support for new Linux\* distributions. See Software Requirements for details.
- Bug fixes

## Changes in Previous Releases

- Cryptography for Intel® Integrated Performance Primitives (Intel® IPP) library is updated to version 9.0 Update 4
- New `setjmp/longjmp` APIs in the trusted C library
- Support for profiling Intel SGX applications using Intel® VTune™ Amplifier. To profile Intel SGX applications, use VTune™ Amplifier 2016 Update 2, the “Intel SGX Hotspots” analysis type.
- Intel® SGX Eclipse\* plug-in to create Intel SGX enclave projects
- Support for implicit Thread Local Storage (TLS)
- Support for nested HW exception in a trusted environment

## 3 System Requirements

### Software Requirements

- Supported Linux\* OS distributions:
  - Ubuntu\* 16.04.1 LTS 64-bit Desktop version
  - Red Hat\* Enterprise Linux\* Server 7.2 (for x86\_64)
  - CentOS\* 7.3 (for x86\_64)

#### NOTE:

It is highly recommended to use the listed Linux\* OS distributions. Other distributions have not been tested.

## 4 Known Issues and Limitations

- Intel® SGX for Linux\* OS does not support power management.
- Intel® SGX for Linux\* OS does not support setting a different charset in GNU\* Project Debugger (GDB\*).

- Building the Intel SGX SDK sample project “RemoteAttestation” is possible only within the Intel SGX SDK installation folder.
- Intel® VTune™ Amplifier 2017 Update 1 does not support profiling of Intel SGX 1.8 applications.
- Intel SGX does not support the “long long” type in C++ templates.
- `sgx-gdb` depends on GDB\* 7.9.1 or later versions. Please upgrade in-box GDB\* of RHEL\* 7.2 and CentOS\* 7.3 before using `sgx-gdb`.

## 5 Disclaimer and Legal Information

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

This document contains information on products, services and/or processes in development. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest forecast, schedule, specifications and roadmaps.

The products and services described may contain defects or errors known as errata which may cause deviations from published specifications. Current characterized errata are available on request.

Intel technologies features and benefits depend on system configuration and may require enabled hardware, software or service activation. Learn more at Intel.com, or from the OEM or retailer.

Copies of documents which have an order number and are referenced in this document may be obtained by calling 1-800-548-4725 or by visiting [www.intel.com/design/literature.htm](http://www.intel.com/design/literature.htm).

Intel, the Intel logo, Xeon, and Xeon Phi are trademarks of Intel Corporation in the U.S. and/or other countries.

### Optimization Notice

Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the

availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.

Notice revision #20110804

\* Other names and brands may be claimed as the property of others.

© Intel Corporation.