

# Intel® Integrated Performance Primitives v6.0 for Windows\* OS Release Notes

---

## Contents

[Overview](#)

[New in Intel® IPP 6.0](#)

[System Requirements](#)

[Installation](#)

[Documentation](#)

[Resources](#)

[Technical Support and Feedback](#)

[License Definitions](#)

## Overview

The Intel® Integrated Performance Primitives (Intel® IPP) 6.0 for Windows\* OS contains 3 separate install packages.

- Intel® IPP for Windows\* OS on IA-32 Intel® Architecture
- Intel® IPP for Windows\* OS on Intel® 64 (Intel® EM64T) architecture
- Intel® IPP for Windows\* OS on Intel® Itanium® Architecture

This Release Notes file refers to the Intel® IPP 6.0 for Windows\* OS.

Intel® Integrated Performance Primitives (Intel IPP) is a software library which provides a broad range of functionality including general signal, image, speech, graphics, data compression, cryptography, text strings and audio processing, vector manipulation and matrix math, as well as more sophisticated primitives for construction of audio, video and speech codecs such as MP3 (MPEG-1 Audio, Layer 3), MPEG-4, H.264, VC-1, H.263, JPEG, JPEG2000, GSM-AMR\* and G.729, plus computer vision. By supporting a variety of data types and layouts for each function and minimizing the number of data structures used, the Intel IPP library delivers a rich set of options for developers to choose from while designing and optimizing an application.

The Intel IPP application programming interface (API) is a cross-platform, low-level software interface that abstracts multimedia and signal processing functionality from the processor underneath. This allows transparent use of recent Intel® architecture enhancements such as Intel® Core™2 Quad and Intel® Core™ 2 Duo Microarchitectures, Intel® 64 Technology (Intel® EM64T), Streaming SIMD Extensions (SSE), SSE2, SSE3, SSSE3, SSE4.1, MMX™ technology, and Intel XScale® technology. Intel IPP is optimized for the broad range of Intel® microprocessors: Intel® Atom™ Processor, Intel® Core™2 Quad processors, Intel® Core™ 2 Duo Processors, Intel® Xeon® processors, Intel® Pentium® 4 processor, the Intel® Itanium® 2 processor and Intel® IXP4XX Network Processors. With a single API across the range of architectures, application developers can have platform compatibility and reduced cost of development. Using Intel IPP, you can simplify integration of basic functions and focus more of your time and efforts on building the value-add functionality that will differentiate your

product in the market.

## Processor Terminology

Intel IPP supports 4 platforms: general combinations of processor and operating system type. This section explains the terms that Intel uses to describe the platforms in its documentation, installation procedures and product web site.

**IA-32:** Any systems based on 32-bit processors generally compatible with the Intel Pentium® processor, (for example, Intel® Core™2 Duo, Intel® Core™, Pentium® 4, Pentium® D, Centrino®, Celeron® or Intel® Xeon®), or processors from other manufacturers supporting the same instruction set, running a 32-bit operating system.

**Intel® 64** (Intel® Extended Memory 64 Technology): any systems based on IA-32 processors which have 64-bit architectural extensions, (for example, Quad-Core Intel® Xeon® Processor and Intel® Core™2 Duo processor), running a 64-bit operating system such as Microsoft\* Windows\* OS XP Professional x64 Edition or Microsoft Windows Server 2003 x64 Edition.

**Intel Itanium®** :any systems based on the Intel Itanium® 2 processor running a 64-bit operating system.

**Intel® Atom™ Processors:** any systems based on Intel Atom processor , it will enable the industry to design new Mobile Internet Devices (MIDs) and affordable Internet-focused notebooks (netbooks) and desktops (nettops). This new processor also serves as the foundation for the all new Intel® Centrino® Atom™ processor technology

## New in Intel® IPP 6.0

- - Expanded Optimizations in latest Intel Micro-architecture
    - Intel® Atom™ Processor support
    - Intel® Core™ i7 processor support
  - High-level Data Compression library Support Izo and new continued performance improvement for zlib, gzip, bzip2 algorithms.
  - New Deferred Mode Image Processing (DMIP) Layer is introduced as a [sample](#) on top of Intel IPP libraries, it provides solutions on pipelined image operations for larger images, utilizes in memory optimization and improves performance on multi-threading environment.
  - New Unified Image Codec (UIC) frameworks implementation to standardize the interfaces as plug-and-play of various image codecs (JPEG, JPEG2000,etc), it is introduced via [sample](#) implementation.
  - Threaded Static Libraries are added to cover all functional domains ( in directory `.\lib\*_t.lib`)
  - New Functional Domains
    - Data Integrity Functions based on operations over finite fields for error-correcting coding, support Reed-Solomon Algorithm (ippDi)
    - Generated domain/functionality for Spiral (ippGen)
  - New functions in existing domains, check "*NewFunctionsList.txt*" in directory

\doc for more details :

- New 3D Image Processing functions - 3D geometry, filtering, remap, etc (ippRR)
- New Video coding functions for Video Enhancement on Denoising / Deinterlasing / Demosaicing
- New function implementation in Image Processing domain ippiCopy\* and ippiTranspose\* functions
- New Speech Coding functions to support Microsoft\* RT Audio, G722.1C (SIREN14), Noise suppressor, Acoustic Gain and Level Control
- New features and enhancement in Intel IPP samples, download completed samples from [Intel IPP Sample Website](#)
  - New Video AVS Codec Support for both Decoding and Encoding (UMC Sample)
  - ALS Decoder Profile support in AAC Decoding
  - Speech Coding Feature enhancement (USC sample)
    - Microsoft RT Audio support via USC RTA codec support
    - ITU G722.1 Annex C support (a.k.a. super-wideband SIREN14 codec)
    - RFC 3047, RFC 3351, RFC 4352, RFC 4749, RFC 4867 voice RTP payloads support
    - Acoustic Noise Suppressor support
    - Acoustic Gain and Level Control support
    - G.728J codec 40kbps support
- New Document User's Guide for Intel 64 architecture is added, please check this "*userguide\_win\_ia64.pdf*" in directory \doc
- Internationalization is supported. Intel IPP returns statuses in local languages.
- Other Changes from Intel IPP v5.3 to v6.0
  - The default OpenMP runtime library for Intel IPP has been changed from libguide to libiomp. See the User Guide in the doc directory for more information
  - The Optimized libraries for Intel® Pentium III processors (a6) are removed. Check "*Getting\_Started.htm*" for current support Optimized CPUs in Intel IPP
  - The Intel IPP on Intel® IXP4XX Network Processors package is removed. Check more details on Intel IPP Web site.

## System Requirements

### Requirements to Develop IA-32 Applications:

- **Hardware**

- IA-32 Intel Architecture processors, and software-compatible processors, including software-compatible AMD\* processors
- 900 MB of free hard disk space, plus an additional 300 MB during installation for download and temporary files.

## • Software

- A supported operating system (Intel IPP has been tested with the following):
  - Microsoft\* Windows Vista
  - Microsoft\* Windows XP
  - Microsoft\* Windows Server 2008
  - Microsoft\* Windows Server 2003
- A supported C compiler (Intel IPP has been tested with the following):
  - Intel® C++ Compiler for Windows\* OS version 10.1 and 11.0
  - Microsoft\* Visual Studio\* 2008
  - Microsoft\* Visual Studio\* 2005
  - Microsoft\* Visual C++\* .NET 2003
  - Microsoft\* Windows Software Development Kit for Microsoft\* Windows Vista

## Requirements to Develop Intel 64 based Applications:

### • Hardware

- a PC, workstation or server, with an Intel® Xeon® processor with Streaming SIMD Extensions 3 (SSE3) and Intel 64 or an Intel® Pentium® D processor
- 800 MB of free hard disk space, plus an additional 300 MB during installation for download and temporary files.

### **IMPORTANT NOTE FOR APPLICATIONS BUILT TO RUN ON SYSTEMS WITH INTEL 64 ARCHITECTURE**

Due to an incompatible change made by Microsoft in the Windows calling standard, code compiled and built for systems with Intel® 64 architecture against versions of the Microsoft Platform SDK earlier than Build 1289, including those compiled with version 8.1.015 or earlier of the Intel C++ Compiler, must be recompiled with the version 9.1 compiler and with Build 1289 or later of the Platform SDK. Failure to do so could cause unpredictable application failures when run on newer versions of Microsoft Windows, including Windows XP Professional x64 Edition and Windows 2003 Server x64 Edition.

### • Software

- A supported operating system (Intel IPP has been tested with the following):

- Microsoft\* Windows Vista x64 Edition
- Microsoft\* Windows XP x64 Edition Version 2003
- Microsoft\* Windows Server 2008
- Microsoft\* Windows Server 2003 x64 Edition
- A supported C compiler (Intel IPP has been tested with the following):
  - Microsoft\* Visual Studio\* 2008
  - Microsoft\* Visual Studio\* 2005
  - Intel® C++ Compiler for Windows\* OS version 10.1 and 11.0 for processors with Intel® 64
  - Microsoft\* Platform SDK, Version 3790.1830 (April 2005)
  - Microsoft\* Platform SDK R2, Version 3790.2075 (March 2006)

## Requirements to Develop Intel Itanium based Applications :

### • Hardware

- a PC, workstation or server, with an Intel® Itanium® 2 processor
- 600 MB of free hard disk space, plus an additional 300 MB during installation for download and temporary files

### • Software

- A supported operating system (Intel IPP has been tested with the following):
  - Microsoft\* Windows Server 2008
  - Microsoft\* Windows Server 2003
- A supported C compiler (Intel IPP has been tested with the following):
  - Intel® C++ Compiler for Windows\* OS version 10.1 and 11.0 for Intel Itanium Processors
  - Microsoft\* Platform SDK, Version 3790.1830 (April 2005)
  - Microsoft\* Platform SDK R2, Version 3790.2075 (March 2006)

Recommended documentation viewer: Adobe\* Acrobat\* Reader Software version 7.0 or later (provides better keyword search capabilities for viewing documentation in PDF format)

## Installation

Guidance on the installation of Intel IPP is provided at install time. Links will be provided to a file with step by step instructions (filename: Install.htm). This file can also be found in the \doc directory. Please see the separate "Installation Guide" for Intel IPP installation. The default installation directory is:

C:\Program Files\Intel\IPP\6.0.x.xxx\ia32 ( IA-32 based system)

or C:\Program Files\Intel\IPP\6.0.x.xxx\em64t (Intel 64 based system)

or C:\Program Files\Intel\IPP\6.0.x.xxx\itanium (Intel Itanium based system)

## Documentation

The Documentation Index (ipp\_documentation.htm in the doc directory) has a list of the principal Intel IPP documents. The Reference Manuals are also available at: <http://www3.intel.com/cd/software/products/asm-na/eng/346532.htm>

## Resources for Addition Information

- For the latest product support information and errata, please visit [Intel IPP Support Website](#).
- Extensive Intel IPP samples have been created to help demonstrate the use of Intel IPP and to help accelerate the development of your application, components, and audio/video/image/speech codecs. More information can be found at the [Intel® IPP Sample Website](#).
- To get started using the library and to find information on building options, please refer to the Getting Started document included in this release.
- Cryptography for Intel IPP requires additional registration to download, please click [<Cryptography Download>](#) from Intel IPP Website for details.

## Technical Support and Feedback

### Self Help and User Forums

A rich repository of self-help product information such as tutorials, getting started tips, known product issues, product errata, compatibility information and answers to frequently asked questions can be found at the [Intel IPP Technical Support site](#). It's a great place to find answers quickly or to gain insight in using our products effectively.

[The Intel IPP User Forum](#) is the place to ask questions of and share information with other users of Intel® IPP.

### Submitting Issues

Your feedback is very important to us. To receive technical support for the tools provided in this product, technical information including FAQ's and product updates, you need to be registered at <https://registrationcenter.intel.com> with your given serial number of this product to create an account at secure [Intel® Premier Support web site](#).

- If you are having trouble registering or are unable to access your Intel® Premier Support account, please contact us via [this channel](#).

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

Steps to submit an issue:

1. Go to <https://premier.intel.com/>.

2. Log in to the site. Note that your username and password are case-sensitive.
3. Click on the "Go" button next to the "Product" drop-down list.
4. Click on the "Submit Issue" link in the left navigation bar.
5. Choose "Development Environment (tools,SDV,EAP)" from the "Product Type" drop-down list.
6. If this is a software or license-related issue, choose " **Intel® IPP for Windows\***" from the "Product Name" drop-down list.
7. Enter your question and complete the fields in the windows that follow to successfully submit the issue.

Guidelines for problem report or product suggestion:

1. Describe your difficulty or suggestion.

For problem reports please be as specific as possible, so that we may reproduce the problem. Please include a small test case if possible.

2. Describe your system configuration information.

Be sure to include specific information that may be applicable to your setup: operating system, name and version number of installed applications, and anything else that may be relevant to helping us address your concern.

## License Definitions

Please see the End User License Agreement file for the license definitions and restrictions on the library.

MPEG-1, MPEG-2, MPEG-4, H.263, H.264, MP3, DV SD/25/50/100, VC-1, G.722.1, G.723.1A, G.726, G.728, G.729, GSM/AMR, GSM/FR, JPEG, JPEG 2000, Aurora, TwinVQ, AC3 and AAC are international standards promoted by ISO, IEC, ITU, SMPTE, ETSI and other organizations. Implementations of these standards, or the standard enabled platforms may require licenses from various entities, including Intel Corporation.

The information in this manual is subject to change without notice and Intel Corporation assumes no responsibility or liability for any errors or inaccuracies that may appear in this document or any software that may be provided in association with this document. This document and the software described in it are furnished under license and may only be used or copied in accordance with the terms of the license. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document. The information in this document is provided in connection with Intel products and should not be construed as a commitment by Intel Corporation.

EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. Intel products are not intended for use in medical, life saving, life sustaining, critical control or safety systems, or in nuclear facility applications.

Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them.

The software described in this document may contain software defects which may cause the product to deviate from published specifications. Current characterized software defects are available on request.

Intel, the Intel logo, Intel SpeedStep, Intel NetBurst, Intel NetStructure, MMX, i386, i486, Intel386, Intel486, Intel740, IntelDX2, IntelDX4, IntelSX2, Celeron, Intel Centrino, Intel Xeon, Intel XScale, Itanium, Pentium, Pentium II Xeon, Pentium III Xeon, Pentium M, and VTune are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

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

Copyright © 2002-2008 Intel Corporation.