A comprehensive software tool suite for developing enterprise-grade, high-performance, quality media solutions and applications

Intel® Media Server Studio helps media software developers deliver fast, high-density, high-quality video transcoding—and innovate immersive viewing experiences on Intel® Xeon® and Core™ processor-based platforms for Linux*. 1

- Develop media and video solutions and applications to achieve best performance and quality.
- Speed the transition to 4K and HEVC and optimize for high frame rate and resolutions.
- Reduce infrastructure costs with hardware-accelerated video transcoding.
- Cut product time to market. Write applications once and run them anywhere, with forward and backward compatibility.
- Supports select Intel Xeon and Core processors and formats including HEVC, AVC, MPEG-2, and more.
- A Linux and Open Source version is available.

Global video traffic is soaring—forecast to be up to 80 percent of all consumer Internet traffic by 2019*. This trend creates high demand for media and video processing in the network and the cloud. Video solution providers need efficient video transcoding to reduce infrastructure and development costs while delivering reliable, high-quality viewing experiences. To stay competitive and meet consumer content viewing demands, it’s essential to be ready to transition quickly to high frame rates (60fps and higher) and resolutions (4K and higher). Intel Media Server Studio helps the industry meet these challenges by enabling media developers to take full advantage of the power of Intel® processors and providing access to real-time, hardware-accelerated HEVC and AVC codecs.

Deliver Fast, High-Quality Video Transcoding

Intel Media Server Studio is a comprehensive software development tool suite for:

- Data center, visual cloud, and network media distribution
- Live and over-the-top (OTT) broadcasting and streaming
- Cloud gaming and remote desktop
- Video conferencing applications

The tool suite simplifies media and video application development by including state-of-the-art components and features for tailoring visual quality and performance. It includes Intel® Media SDK, Intel® SDK for OpenCL™ Applications, runtimes, graphics drivers, and advanced performance and quality analysis tools and supports Linux.^3
These capabilities allow developers to achieve real-time 4K@60fps HEVC decode and encode and up to 18 AVC full HD@30fps transcoding sessions on Intel Xeon processor E3-1500 v5 and 6th generation Intel Core processors on Linux platforms.\(^3\)

**Why You Need It**

- **Stay competitive by building high-density media pipelines.** Achieve outstanding performance and density by taking advantage of the Intel® Quick Sync Video-enabled, hardware-accelerated codecs on Intel Xeon E3 and Core processor platforms\(^1\) with Intel® Iris\(^\text{™}\), Intel® Iris\(^\text{™}\) Pro, and Intel® HD Graphics.

- **Streamline the development cycle.** Write applications once and run them anywhere. Instead of cobbling together tools and runtimes from different sources, use a consistent set of SDKs, runtimes, and drivers to rapidly develop and optimize media applications and solutions.

- **Develop high-performance, heterogeneous applications.** With the Intel SDK for OpenCL Applications, build, analyze, debug, and customize your solutions and applications. Get full control over media pipelines and exploit the full computational capabilities of Intel® Graphics Processors (GPUs) and CPUs.

- **Select an HEVC encoder that best fits your scenario.** Use Intel's fast, hardware-accelerated HEVC codec for high density Web, OTT, and video conferencing. Or choose GPU-accelerated or software HEVC encoder components if you need broadcast quality. With Intel's award-winning\(^*\) portfolio of HEVC codecs and codec ingredients, benefit from great compression and reduce bandwidth use with a broad range of Intel platforms: Intel Core, Xeon E3, and E5 processors and Intel® Visual Compute Accelerator add-in cards. Tap into a rich set of HEVC codec features such as ROI priority (QP) map for better functionality and control for video conferencing, plus low-delay mode.

- **Accelerate time to market.** Intel Media Server Studio can reduce development time, support, and infrastructure costs—key factors for differentiation in an ever more fragmented and commoditized ecosystem.

- **Virtualized environment.** Use Intel Media Server Studio software implementation on the Intel Xeon processor E5 product family with KVM+Xen on Linux.

- **Optimize application performance and quality with advanced tools.** Intel® VTune™ Amplifier, a performance profiler, gathers a rich set of CPU, GPU, threading, OpenCL\(^\text{™}\), and bandwidth metrics needed to find media processing bottlenecks. Sort and filter the results and then display them for easy analysis on the timeline, code source, and on a GPU architecture diagram that shows VDBox, VEBox, EU utilization, and bus bandwidth. Video Quality Caliper is a graphical tool for objective and visual quality inspection of encoded and uncompressed streams.

Choose the Edition That Meets Your Needs

**Community Edition**

- Delivers full access to Intel Quick Sync Video-enabled, hardware-accelerated codecs (HEVC, AVC, and more) and provides a development environment for heterogeneous apps.
- Includes Intel Media SDK, Intel SDK for OpenCL Applications, runtimes, and graphics drivers.
- Flexible encode infrastructure (FEI) to fine-tune encoding visual quality.
- Support is via an online community forum.

**Essentials Edition**

- Includes everything in the Community Edition.
- Adds Priority Support with direct, confidential access to Intel tech experts for answers to your questions.

**Professional Edition**

- Includes everything in the Community and Essentials editions.
- Enterprise-quality HEVC codec components.
- Expert-grade performance and quality analyzers (Intel VTune Amplifier, Video Quality Caliper)
**What's Inside Intel® Media Server Studio**

Deliver High Performance & Quality Video Transcoding

**COMMUNITY EDITION - FREE**

Intel® Media SDK provides access to Intel® Quick Sync Video for hardware-accelerated encoding, decoding & processing

- H.265 (HEVC)
- H.264 (AVC)
- MPEG-2 & more

Flexible Encode Infrastructure (FEI)
Fine-tune encoding pipeline

Intel® SDK for OpenCL™ Applications
Build, debug, optimize for CPU & GPU

**ESSENTIALS EDITION**
Community Edition + Priority Support

**PROFESSIONAL EDITION**
Essentials Edition, Priority Support +

Performance & Quality Analyzers
Intel® VTune™ Amplifier, Video Quality Caliper

H.265 (HEVC)
Software & GPU-Accelerated Encode & Decode

Graphics Driver for Linux®
Optimized for Intel® Processors & Technologies

Intel® Quick Sync Video

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- **Optimize application performance and quality with advanced tools.** Intel VTune Amplifier, a performance profiler, gathers a rich set of CPU, GPU, threading, OpenCL, and bandwidth metrics needed to find media processing bottlenecks. Sort and filter the results and then display them for easy analysis on the timeline, code source, and on a GPU architecture diagram that shows VDBox, VEBox, EU utilization, and bus bandwidth. Video Quality Caliper is a graphical tool for objective and visual quality inspection of encoded and uncompressed streams.

**Key Features and Components**

- **Video decoders (hardware-accelerated):** H.265 (HEVC) 8-bit, H.264 (AVC) 8-bit, MPEG-2, VC-1, MVC, MJPEG
- **Video encoders (hardware-accelerated):** H.265 (HEVC), H.264 (AVC) 8-bit, MPEG-2, , MJPEG (software)
- **Video codec components:** H.265 (HEVC) software and GPU-accelerated decode and encode, 8- and 10-bit
- **Advanced performance and quality analyzers:** Intel VTune Amplifier and Video Quality Caliper
- **Programmability:** OpenCL 1.2 and 2.0, video motion estimation (VME), VEBox, HEVC PAK extensions
- **Flexible encode infrastructure (FEI)** for AVC encode
- **Video processing filters:** Deinterlacing, Resizing, Rotating, Cropping, Composition and Alpha Blending, Color Conversion, Denoising, Frame-Rate Conversion, Videosignal Info, Advanced Deinterlacing for handling scene changes

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**Technical Specifications**

<table>
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<tr>
<th>Hardware Requirements</th>
<th>Intel Media Server Studio supports the following platforms with integrated graphics:</th>
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<tbody>
<tr>
<td></td>
<td>- Intel Xeon processor E3-1200 v4 family with C226 chipset</td>
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<tr>
<td></td>
<td>- Intel Xeon processor E3-1200 and E3-1500 v5 family with C236 chipset</td>
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<td></td>
<td>- 5th generation Intel Core processors</td>
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<td></td>
<td>- 6th generation Intel Core processors</td>
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<td></td>
<td>Additionally, for Intel Xeon processors E5 v4 and v5, support of software-only (CPU) HEVC decode and encode, select video pre-processing (CSC, scaling, DI), and virtualization (KVM*, Xen*) is available.</td>
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<tr>
<th>Operating Systems</th>
<th>Linux: CentOS® 7.4</th>
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<td></td>
<td>CentOS® is the preferred Linux operating system. Versions and kernels supported vary based on the release. See Release Notes for correct kernel per release.</td>
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<td></td>
<td>Other Linux distributions through generic OS model (Intel Media Server Studio generally works on these operating systems; however, support is not provided for Linux distributions other than Gold OS.) The installation process applies many changes to the kernel, graphics driver, libdrm, and libva graphics stack. These changes would need to be reverted to request OS vendor support.</td>
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See also individual component tools release notes for supported OS and required software.

- Intel SDK for OpenCL Applications
- Intel VTune Amplifier
Technical Specifications (Continued)

<table>
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<tr>
<th>Known OEM/ODM Functional Platforms</th>
<th>Languages</th>
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<tr>
<td>Intel® Visual Compute Accelerator</td>
<td>C++, OpenCL™ 1.2 and 2.0</td>
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<tr>
<td>HPE ProLiant® m710p and m710x Server Cartridges</td>
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<tr>
<td>Super Micro® Microserver 1U or mini tower MBD/System/X1155V-M4F/M4</td>
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<tr>
<td>Kontron SYMKLOUD® MS2900 Media</td>
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<tr>
<td>Artesyn SharpStreamer®</td>
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<tr>
<td>Adlink MCS-2080 Media Cloud Server®</td>
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Get Started Now

- Download the Free Community Edition >
- Get a Free Trial of the Professional Edition >
- Purchase Essentials or Professional Edition>
- Read User Reviews >
- Get Technical Details >
- Learn more: software.intel.com/intel-media-server-studio >

Other Resources

- Intel Xeon Processor E3-1500 v5 Product Brief >

Optimizing Media and Video Processing for Desktop, Client, Embedded, and Mobile Devices?

Download the free Intel® Media SDK to speed video encode/decode, video and image processing, and video conferencing. Embedded Linux, Windows, and Open Source versions are available.

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1 Specific hardware technical specifications apply. See details.


3 Performance results are based on testing as of 2017 and may not reflect all publicly available security updates. See configuration disclosure for details. No product can be absolutely secure.

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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

4 2015 Global Video Encoding & Transcoding Technology Innovation Leadership, Frost & Sullivan, and 2015 HEVC/H.265 Video Codec Comparison Report, and Appendix, Moscow State University

5 Flexible Encoder Infrastructure (FEI) is an extension of Intel Media SDK that gives more control over encoding process compared to the standard Media SDK API. This feature is available with limitations: 1) Only AVC encode supported; 2) Intel does not provide technical support for the FEI through the media community forum or Intel Premier Support; 3) Building an application with FEI may take significantly more effort compared to the standard Intel Media SDK API; 4) FEI validation is limited. Some combinations of encoding parameters may lead to unstable application behavior, crashes and hangs; 5) FEI API is not backward compatible; 6) FEI is subject to the same EULA terms as Media Server Studio. Some FEI components are distributed as "pre-release materials" which restricts their usage according to the EULA.

Benchmark results were obtained prior to implementation of recent software patches and firmware updates intended to address exploits referred to as "Spectre" and "Meltdown". Implementation of these updates may make these results inapplicable to your device or system.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. hese updates may make these results inapplicable to your device or system.

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