(intel®)

A New Era for Media Processing

Intel solution delivers excellent performance while minimizing software optimization and development effort
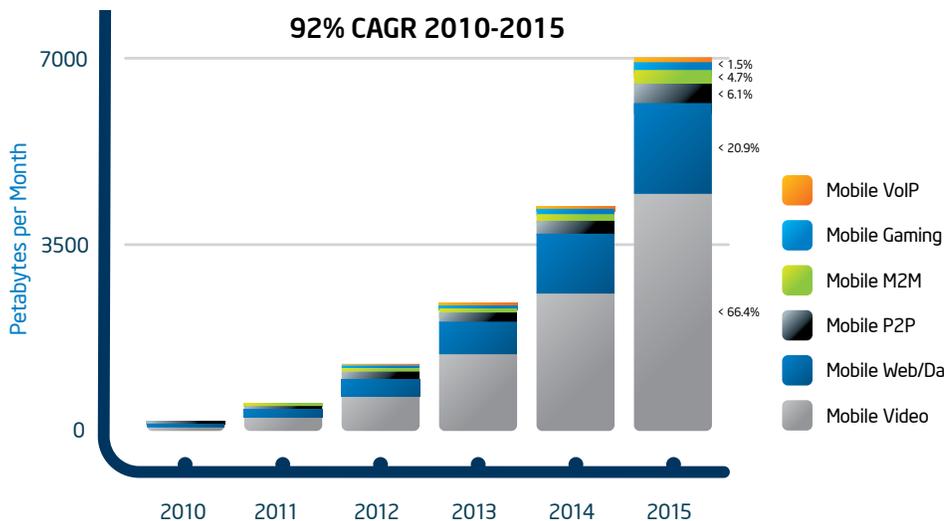
Network traffic is exploding, placing unprecedented demands on media servers to increase workload density and throughput. Video has and will continue to be a driving force in this trend, due to the popularity of social media such as YouTube* and Facebook*, and consumer devices such as smart phones, tablets, and mobile TVs. It is predicted that, "two thirds of mobile data traffic will be video by 2015...and mobile video will more than double every year between 2010 and 2015."[1]

Challenges

This tremendous growth will require significant infrastructure build outs and leave service providers to balance demands for power, bandwidth, advanced traffic control, differing standards, and quality. These increases in network costs (capital and operating) can easily outpace revenue growth. As service providers position themselves for the next cycle of network upgrades, they must decide how to simplify the convergence of multiple media workloads onto one platform, while insuring flexibility in the network to deploy new intelligent services as they come to market.

Media processing workloads —for example, transcoding/transrating media streams in real-time— have traditionally been managed by a range of multicore DSP-, ASIC- or multicore MIPS-based solutions. However, software must often be optimized to partition workloads among the cores, requiring programmers with a specific skill set in order to achieve optimal performance. Moreover, these solutions normally host a local management processor for control and workload distribution, all of which adds to the cost of development, scaling, and time-to-market.

92% CAGR 2010-2015

Petabytes per Month

7000

< 1.5%
< 4.7%
< 6.1%

< 20.9%

3500

< 66.4%

0

■ Mobile VoIP
■ Mobile Gaming
■ Mobile M2M
■ Mobile P2P
■ Mobile Web/Da
■ Mobile Video

2010   2011   2012   2013   2014   2015

VoIP traffic forecasted to be 0.4% of all mobile data traffic in 2015
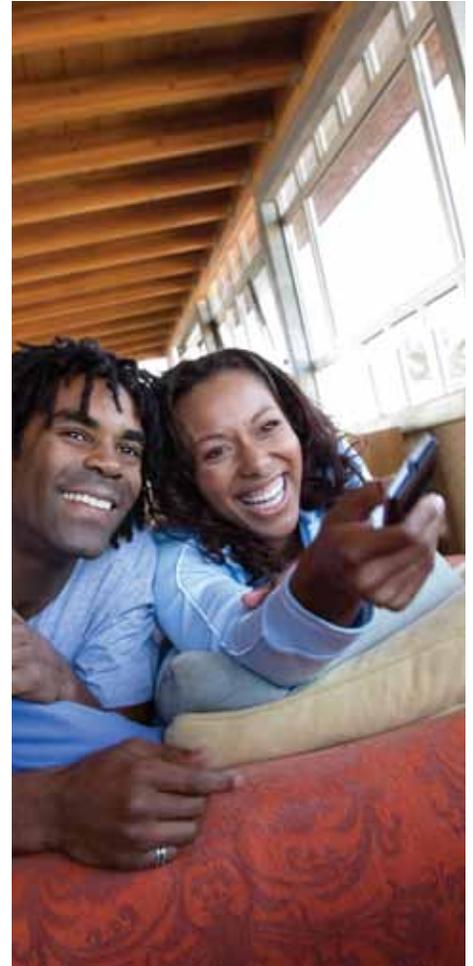Source: Cisco* VNI Mobile, 2011

Solutions

The 3rd generation Intel® Core™ processor family (codename Ivy Bridge) in mobile, desktop and workstation platforms, is extremely well-suited to handle media processing workloads through hardware acceleration. While leaving CPU headroom for other workloads such as cryptography or control plane, the on-chip processor graphics provide a low-power, high-density performance solution for media processing while minimizing power consumption and maximizing performance.

The Intel® Media Software Development Kit (Intel® Media SDK) provides an API interface for decoding, encoding and video pre-processing to help developers rapidly create applications that take advantage of hardware acceleration for video codecs, while moving to market more quickly. It delivers the performance of hardware-accelerated media processing on Intel® architecture processors with minimal software implementation. The Intel Media SDK can access various commonly used video codecs such as H.264, MPEG-2 and VC-1, with selectable video profiles and preprocessors. The SDK is extensible, and developers may incorporate their own software encoding and decoding in place of the default codecs, when a newer and more efficient codec becomes available.

Intel Inside® for Media Processing

As media traffic continues to surge, media processing technology will play an important role in helping service providers meet the demand for growth, quality delivery and diverse services. 3rd generation Intel Core processors with the Intel Media SDK provide an excellent platform for optimizing content delivery while enabling low power, highly density and scalable solutions for use at the network edge or in the core network.

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