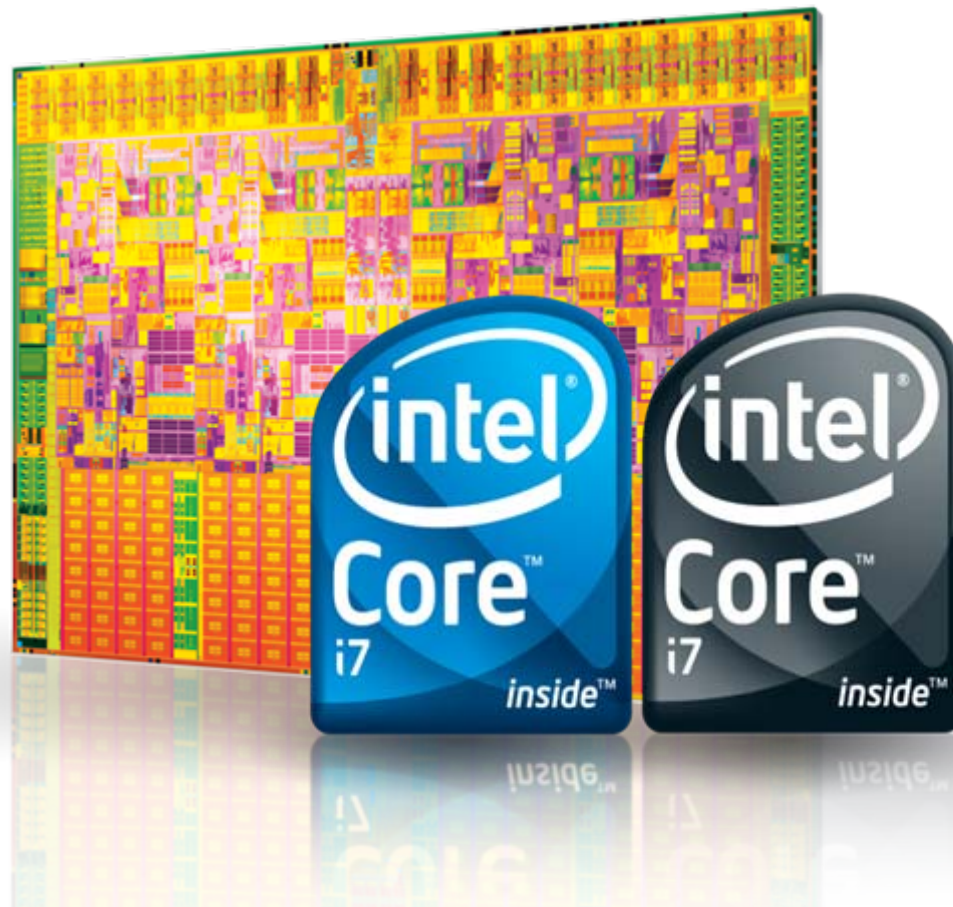


# Intel® Core™ i7 Microprocessor

*The Best Processor On The Planet*

November 3, 2008





*Highest Performing Processor on the Planet!*

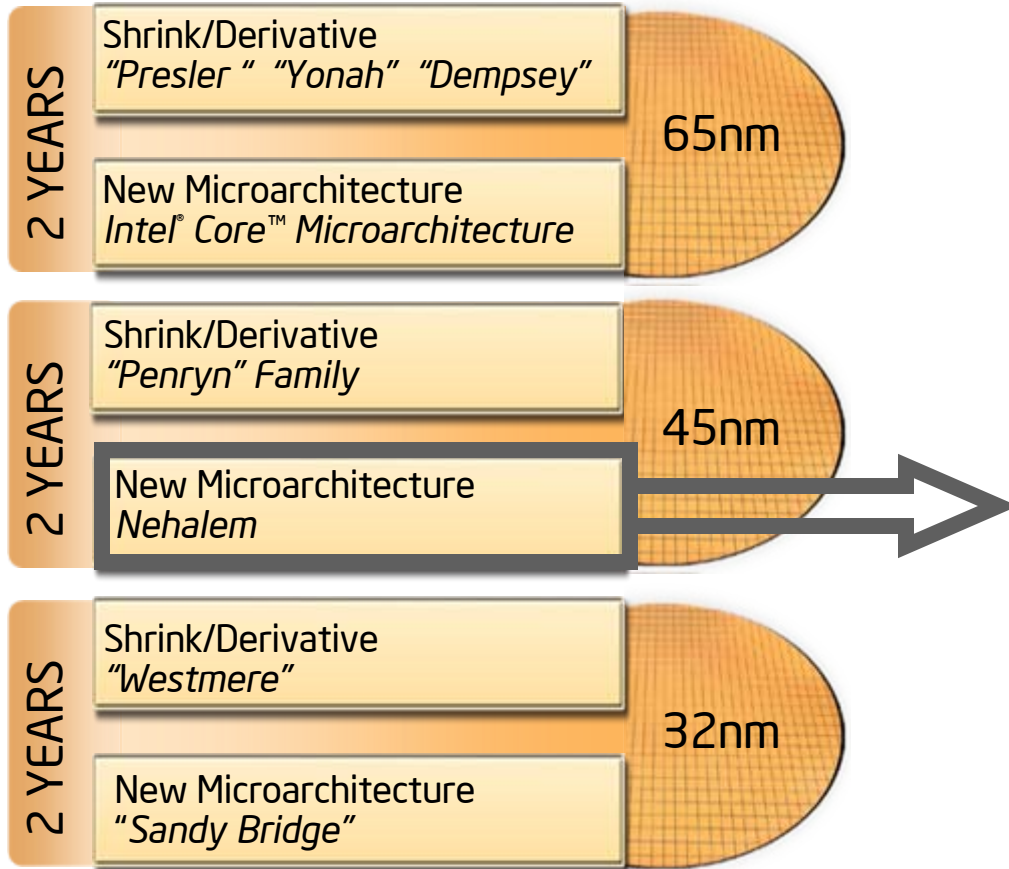
Be  
Creative

Play  
Games

Multitask  
with Ease



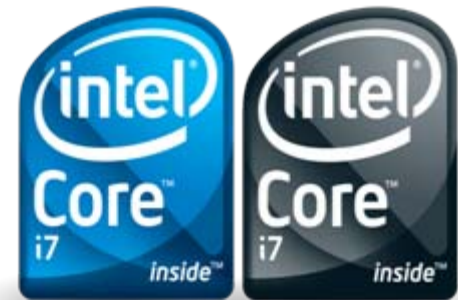
# Architectural Leadership Intel® Microprocessor Design Model



*"Tick Tock"*  
(Shrink) (Innovate)



Intel® Core™ i7 are the  
first desktop processors  
to launch from the new  
Intel® Core™ processor  
family



# 45 nm Process Technology Hits Its Stride...

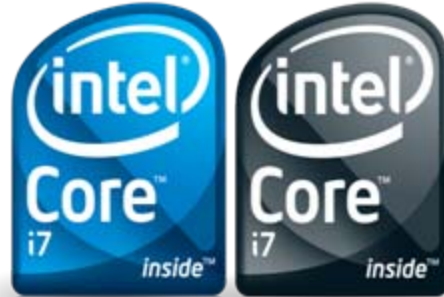
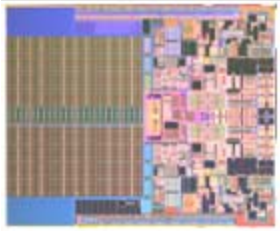
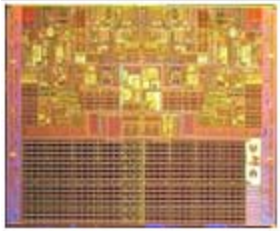
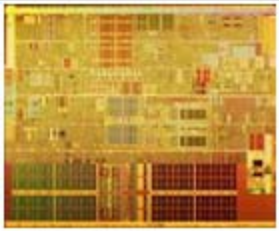
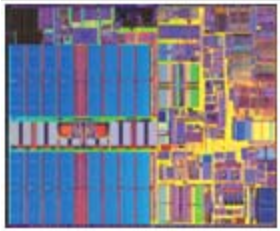
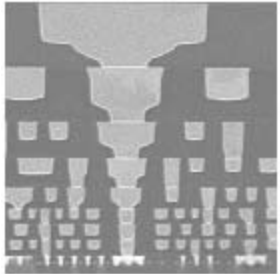
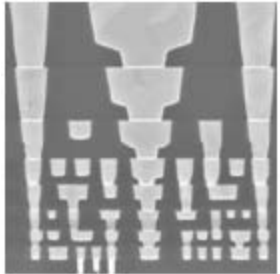
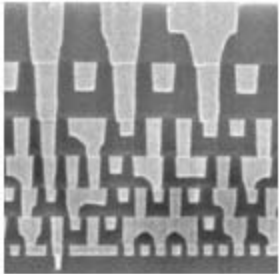
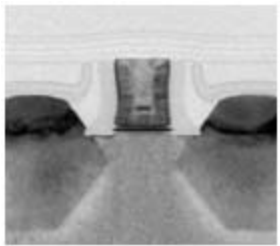
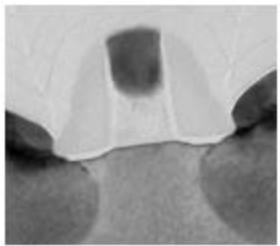
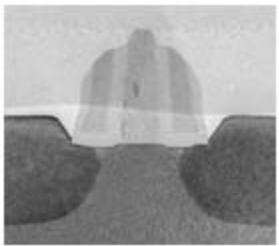
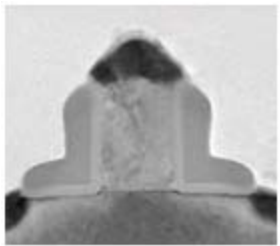
Intel®  
Core™ i7  
2008

130 nm  
2001

90 nm  
2003

65 nm  
2005

45 nm  
2007



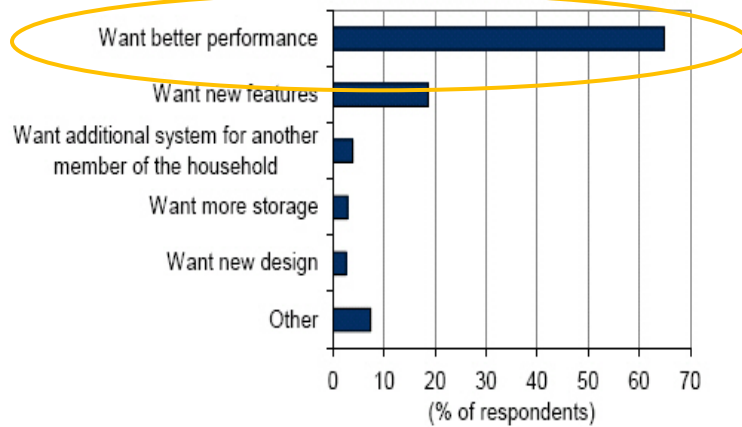
Intel® Core™ i7 Delivers On the Full Promise of 45 nm Process Technology



# Performance Matters!

## Motivation for Buying a New PC

Q. What was your primary motivation for buying a new system?

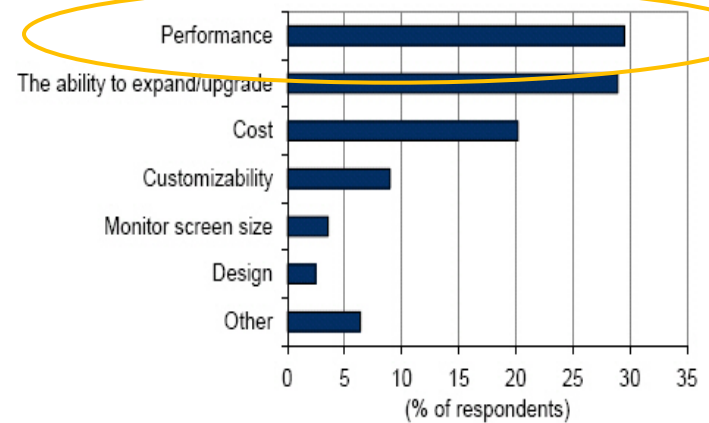


n = 601

Source: IDC's 2007 U.S. Consumer PC Survey

## Reason for Purchasing Desktop Over Notebook

Q. What was your primary consideration in purchasing a desktop over a notebook?



n = 823

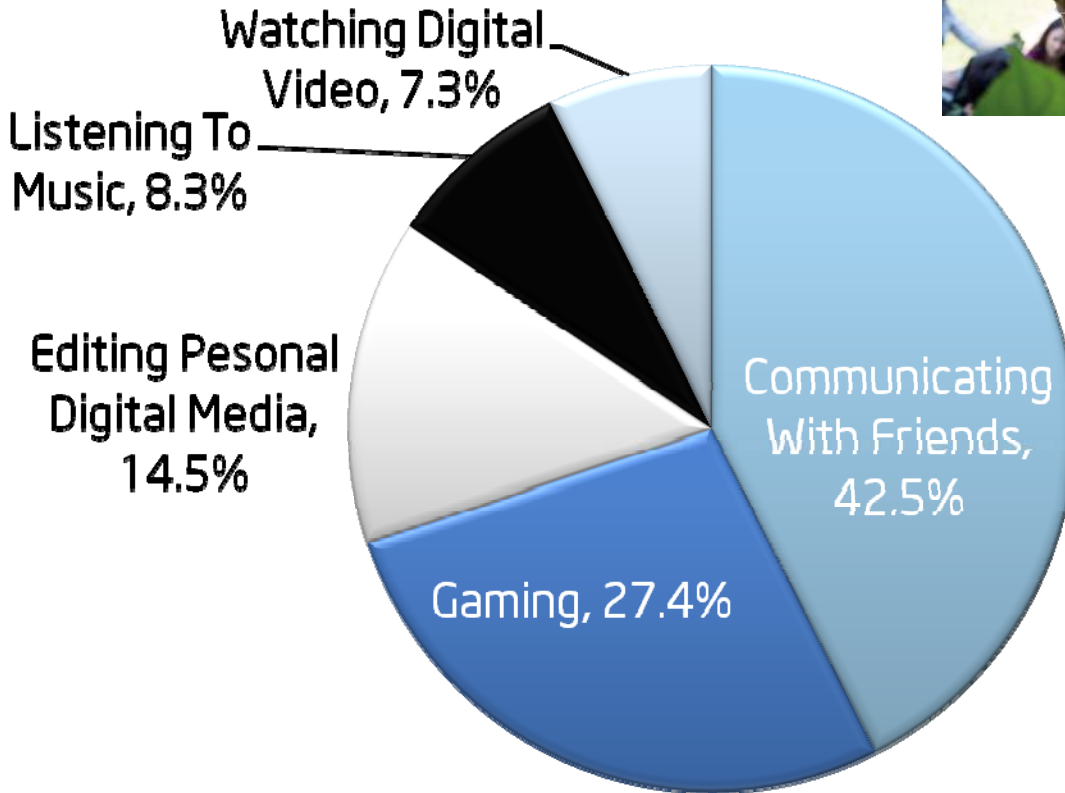
Source: IDC's 2007 U.S. Consumer PC Survey

Desire for improved performance continues to drive PC purchasing



# Consumers Communicate, Game, and Edit\*

Q: Primary Use For Home PC?



**Gaming, Editing, High Def Continue To Grow In The Mainstream**





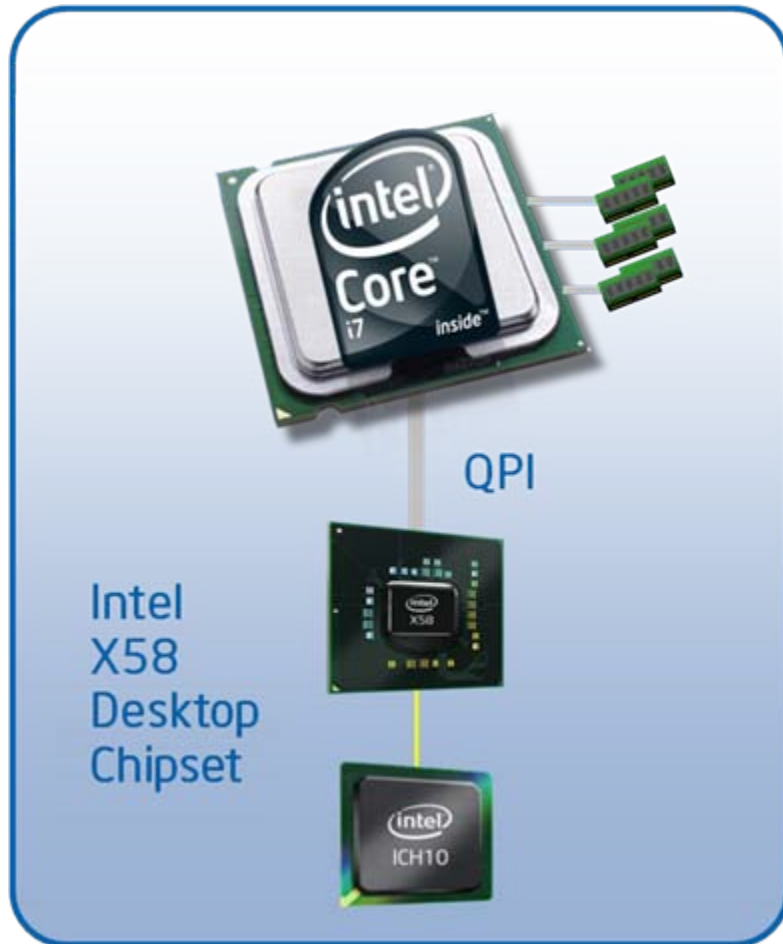
The Highest Performing  
Processor on the Planet!



# Intel® Core™ i7 processor family: What's New

## New processors (1Ku Pricing)

- Intel® Core™ i7-965 processor Extreme Edition (3.2GHz, 8MB L3 Cache, \$999)
- Intel® Core™ i7-940 processor (2.93GHz, 8MB L3 Cache, \$562)
- Intel® Core™ i7-920 processor (2.66GHz, 8MB L3 Cache, \$284)



## New Features

- 4 cores - 8 threads
- Integrated 3-ch DDR3 memory controller
- Intel® Hyper-Threading Technology
- Intel® Turbo Boost Technology
- 8 MB of Intel® Smart Cache
- Intel® QuickPath interconnect
- PCI Express\* 2.0 for discrete graphics





# Platform Ingredients



Intel® Core™ i7  
Intel® Core™ i7 Extreme Edition

+



Intel® X58 Express Chipset with  
ICH10/10R

Flexibility for multiple graphic card configurations  
Optional:

- Intel® Extreme Tuning Utility^
- Intel® Extreme Memory Profiles~
- Intel® High-Performance Solid State Drives~

For high-performance consumer  
desktop PCs





Be Creative

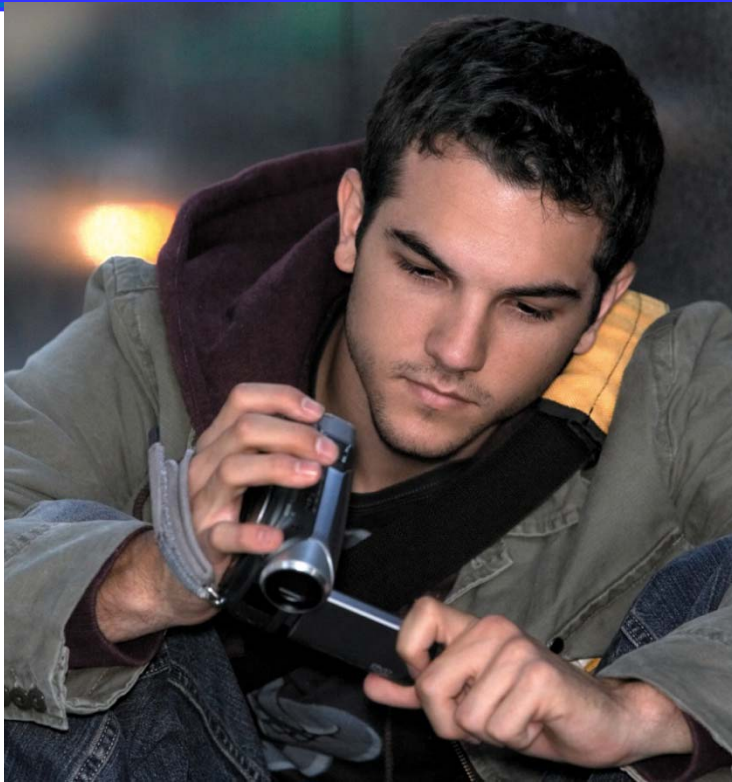


# More Memories in Less Time

Prepare more videos in less time



Using AutoMKV\* you can quickly convert your videos from your DV Camcorder and create a high quality movie to send to your family and friends



Time to convert a high quality movie in minutes<sup>1</sup>

*Lower is Better*

Intel® Core™ i7-965  
processor Extreme Edition

24

Intel® Core™2 Extreme Processor  
QX9770

33

0 10 20 30 40

The Intel® Core™ i7-965 processor helps you quickly deliver high quality movies for family and friends

<sup>1</sup> Extrapolation based on using AutoMKV\* 0.95c on 720x480 video 416MB raw video and converting it into H.264 (253MB) for storage ; movie length is 5 minutes

System Configurations and Disclaimers: Appendix

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



# More Movies in Less Time

Render more frames

Using 3ds Max\* more quickly create the next award winning movie



Number of Frames Rendered in 30 minutes<sup>1</sup>

*Higher is Better*

Intel® Core™ i7-965  
processor Extreme Edition

69

Intel® Core™ 2 Extreme  
Processor QX9770

50

0 20 40 60 80

The Intel® Core™ i7-965 processor Extreme Edition helps you spend more time creating compelling movies

<sup>1</sup> Extrapolation based on 3ds Max\* 2009 rendering single 1080p frame (1920x1080) that could be used in a 3D animated movie

System Configurations and Disclaimers: Appendix

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

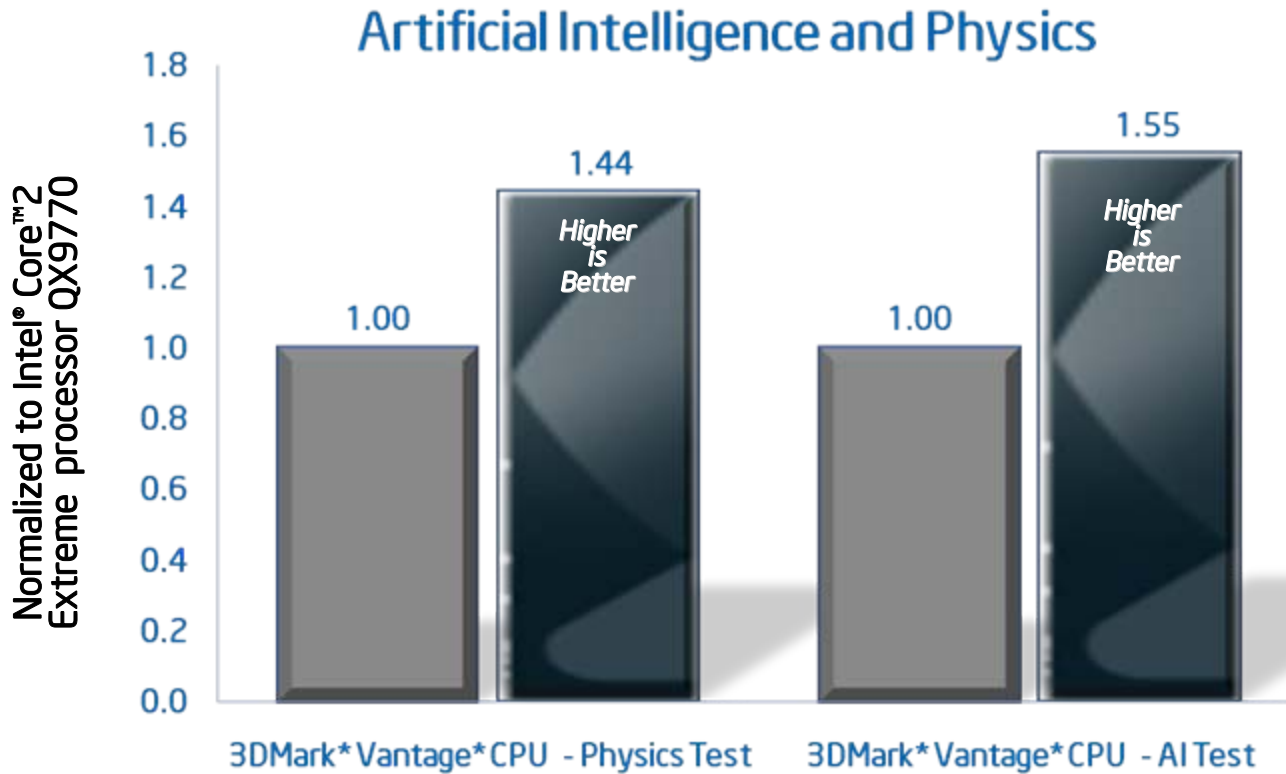




Play Games



# Amazing Immersive Gaming



CPU Test 1: Artificial Intelligence



CPU Test 2: Physics



■ Intel® Core™2 Extreme Processor QX9770 ■ Intel® Core™ i7-965 processor Extreme Edition

**Intel® Core™ i7-965 processor Extreme Edition uses 8 threads to run Artificial Intelligence and Physics to make Games ACT and FEEL real**

System Configurations and Disclaimers: Appendix

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



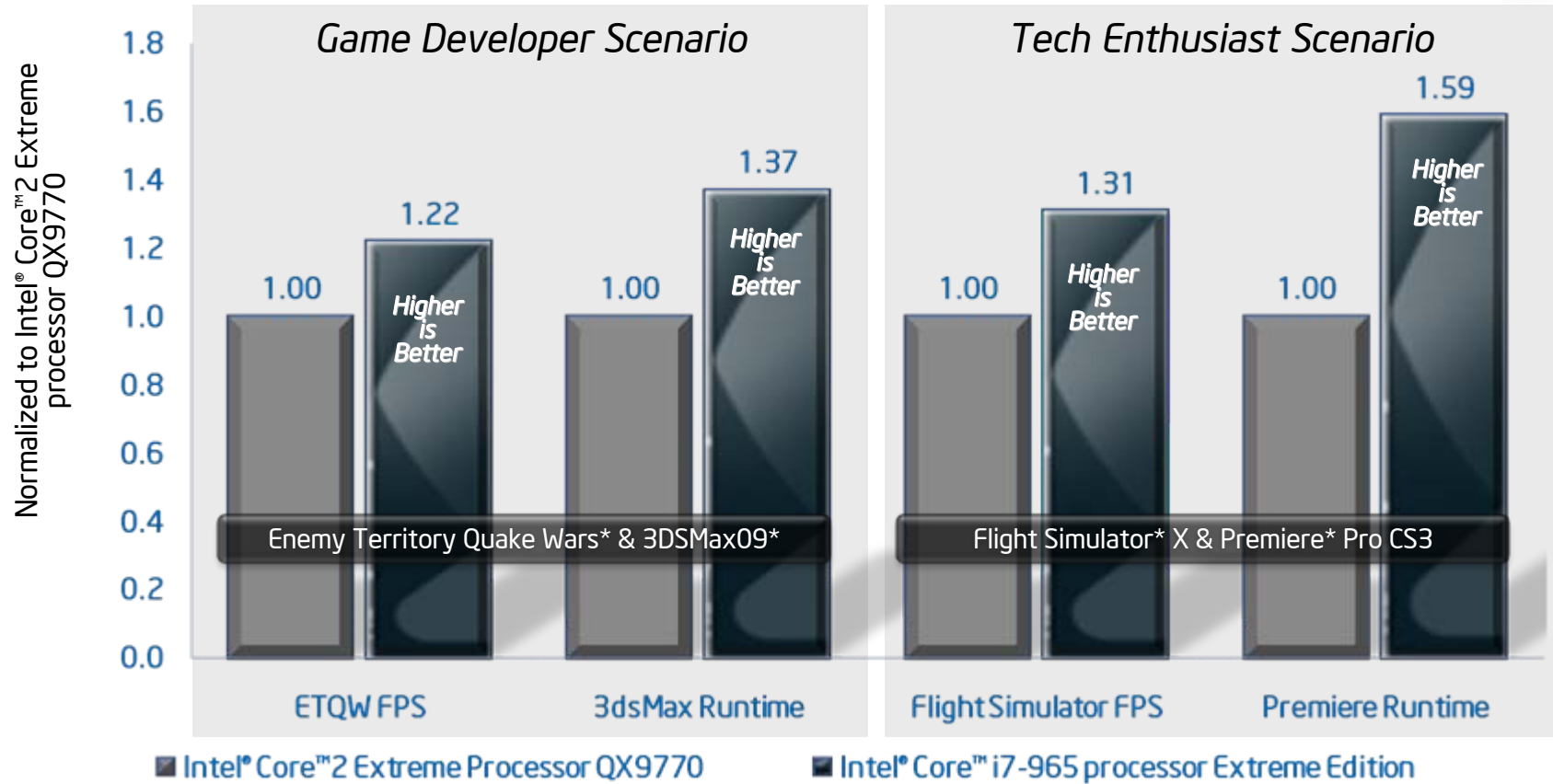


Multitask  
with Ease





# Power to run multiple demanding applications ... at the same time



Intel® Core™ i7 processor Extreme Edition has the power to let you create your next video blockbuster while piloting a simulated cross country flight





# Be More Productive Do More!

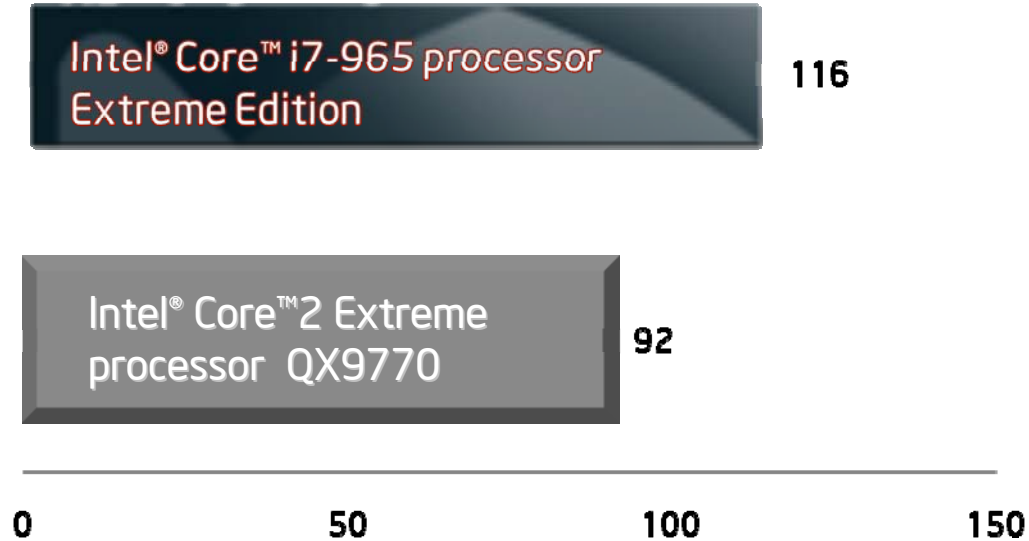


You can use the power of the Intel® Core™ i7-965 processor Extreme Edition to quickly archive your photos using WinRAR\*



Number of Photos Archived in 30 minutes<sup>1</sup>

*Higher is Better*



**Intel® Core™ i7-965 processor Extreme Edition speeds up photo archiving**

<sup>1</sup> Extrapolation based on WinRAR\*. The workload consists of five high-resolution, 48-bit TIFF images whose file sizes are around 70MB each which are then compressed into a single ~297MB file for archiving.

System Configurations and Disclaimers: Appendix

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





*Highest Performing Processor on the Planet!*

*Incredible New Features*



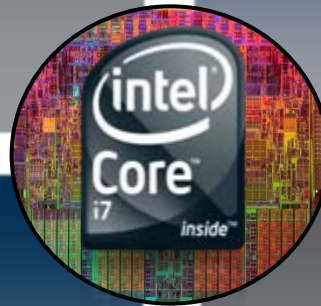
# Intel® Core™ i7: Next Generation Micro-architecture

Energy efficient Performance

Intel Hyper-Threading  
Technology

Intel® Turbo Boost  
Technology

Dynamic power  
management



45 nm High K+ Metal gate  
Transistors

3x memory bandwidth

Best in class bandwidth with QPI

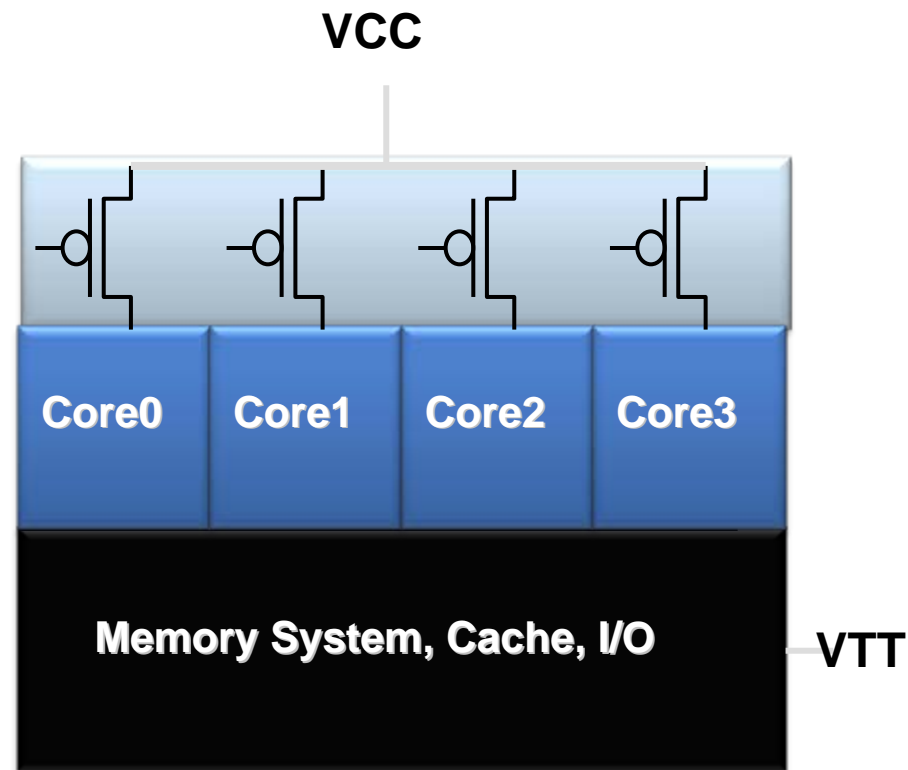
Industry's First Dynamically Scalable Architecture



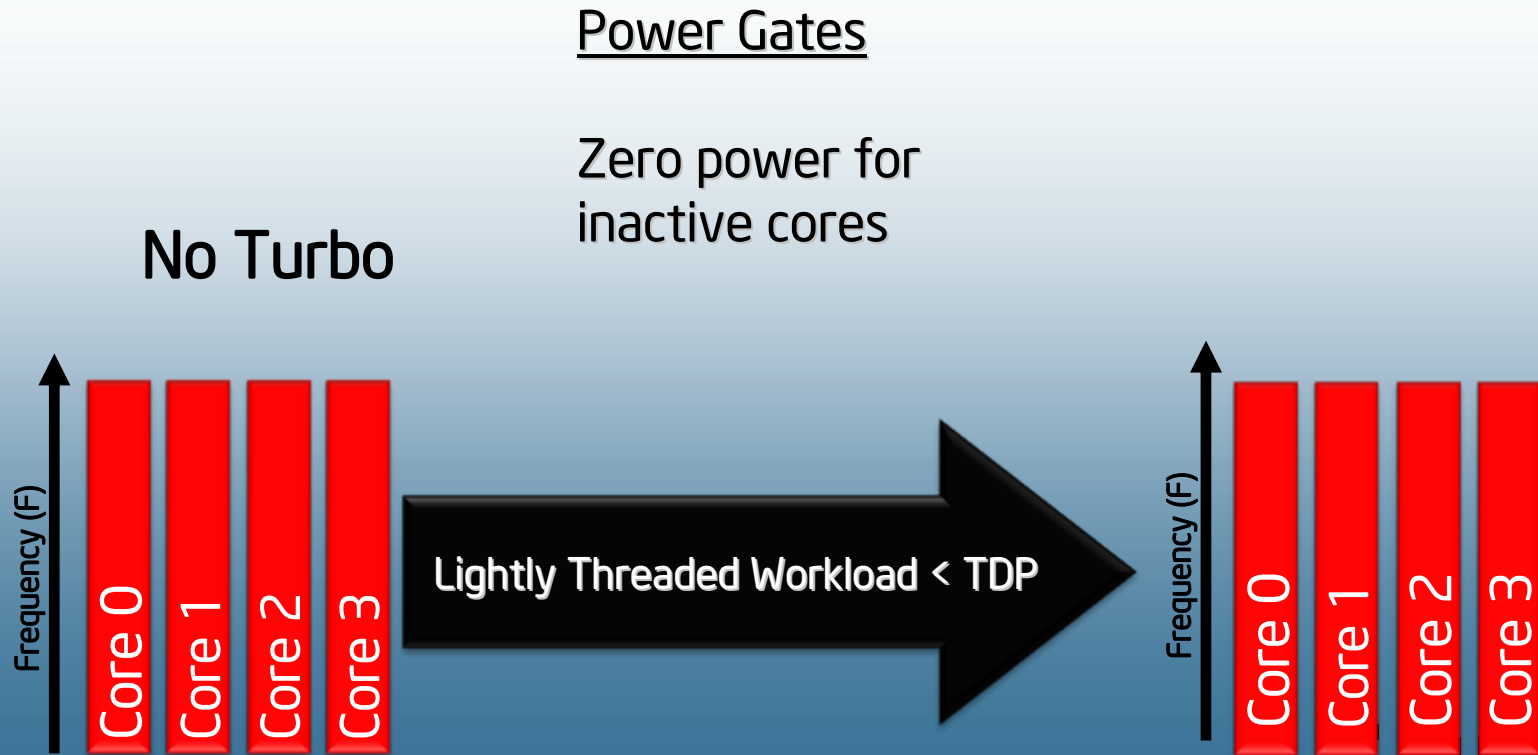
# Integrated Power Gate

Integrated Power Switches turn individual cores on/off

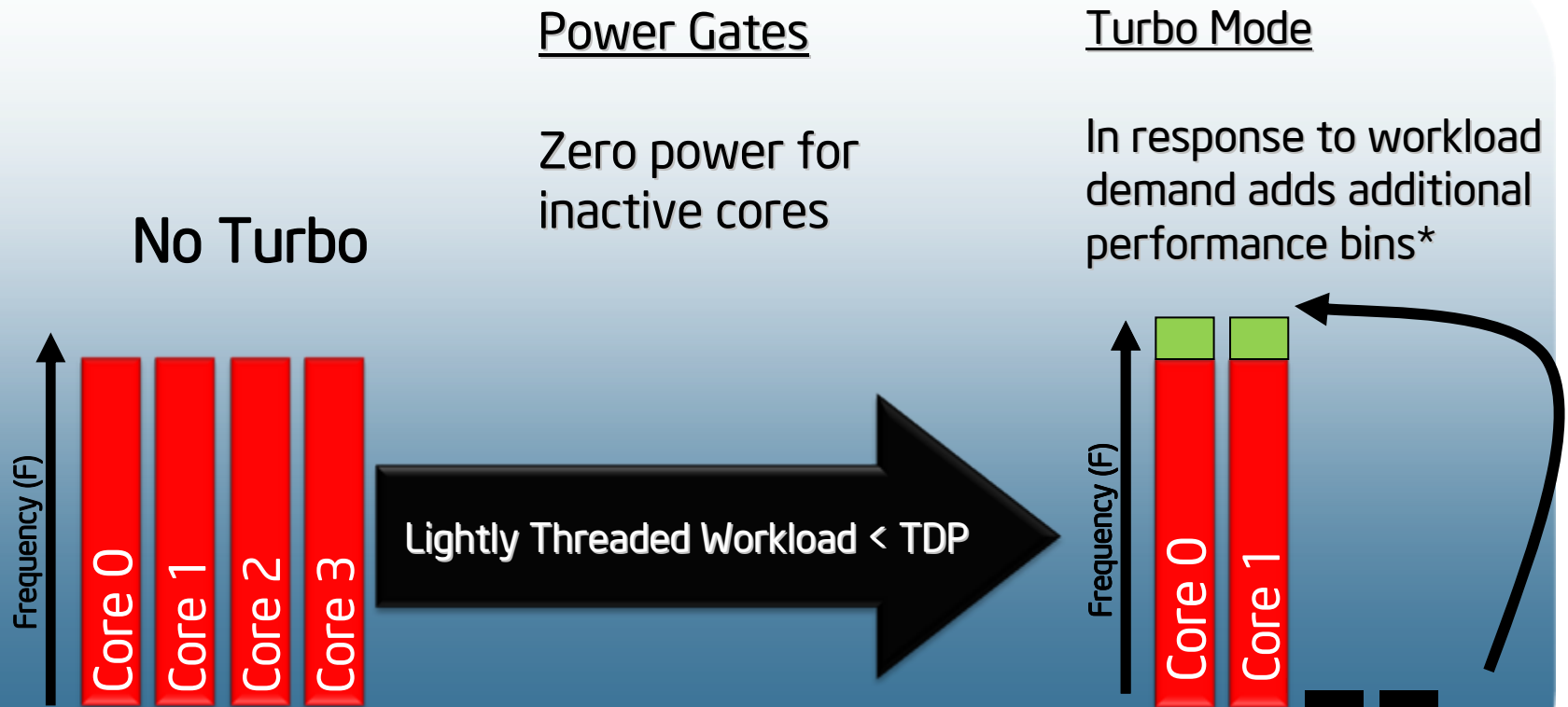
- **Zero leakage power**
  - Transparent to OS
  - Reduces latency to wake a core
- **Novel process technology**
  - Package type
  - Low resistance metal layers in silicon
  - Ultra low leakage transistor to build switch
- **Modular/ Scalable Clocking**
  - Cores, Memory System, I/O can run at independent voltage/frequency



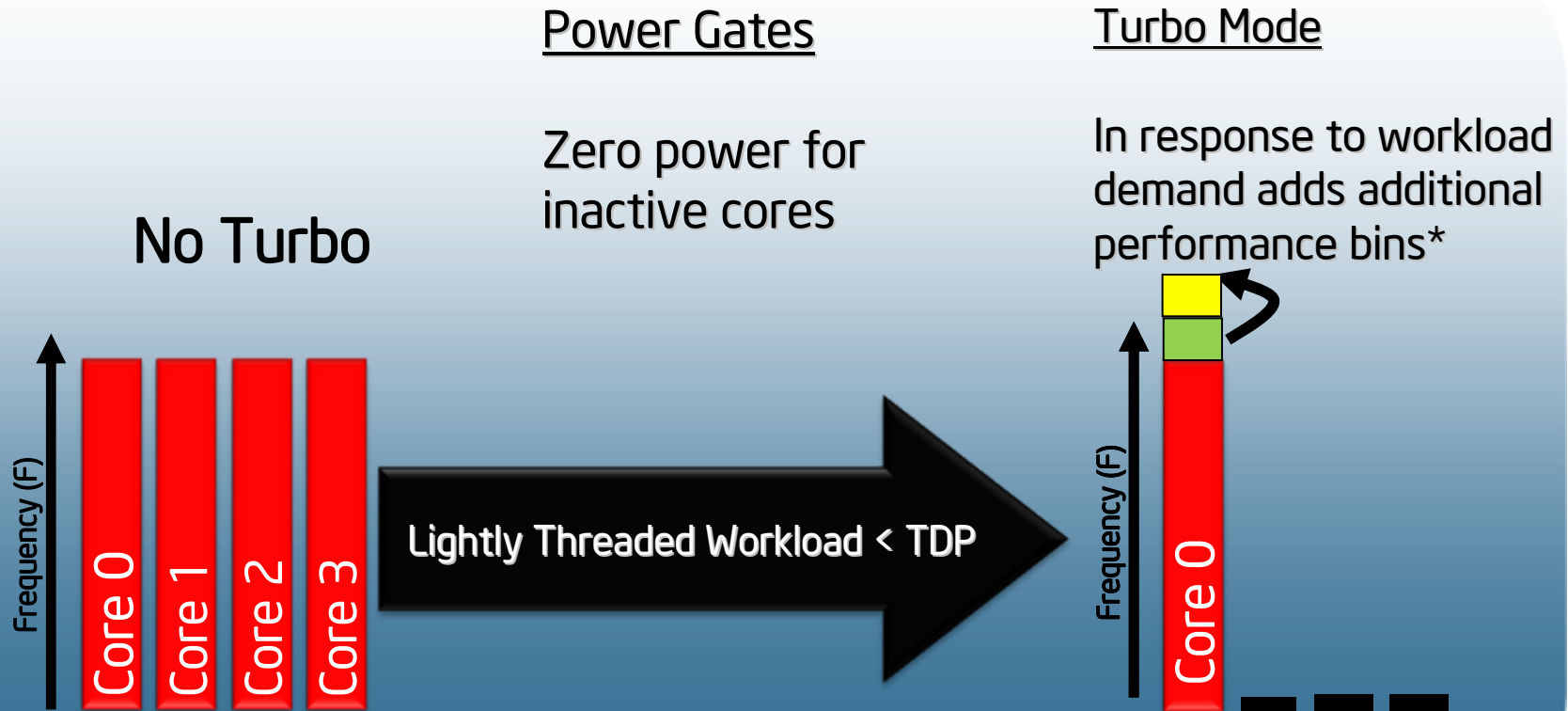
# Intel® Turbo Boost Technology



# Intel® Turbo Boost Technology



# Intel® Turbo Boost Technology



Dynamically Delivering Optimal Performance and Energy Efficiency



# Intel® Core™ i7 Innovations: Dynamic Power Management

Power gates

Short entry/exit latencies for C states

Broader operating voltage range

“Dynamic only load line”

Idle Cores use no power

Available in all segments

Improves scalability

Provides lower power at same performance





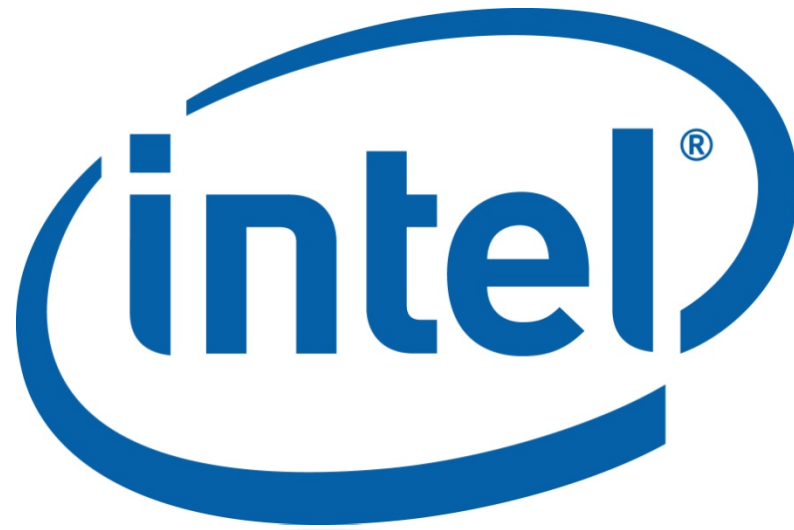
*Highest Performing Processor on the Planet!*

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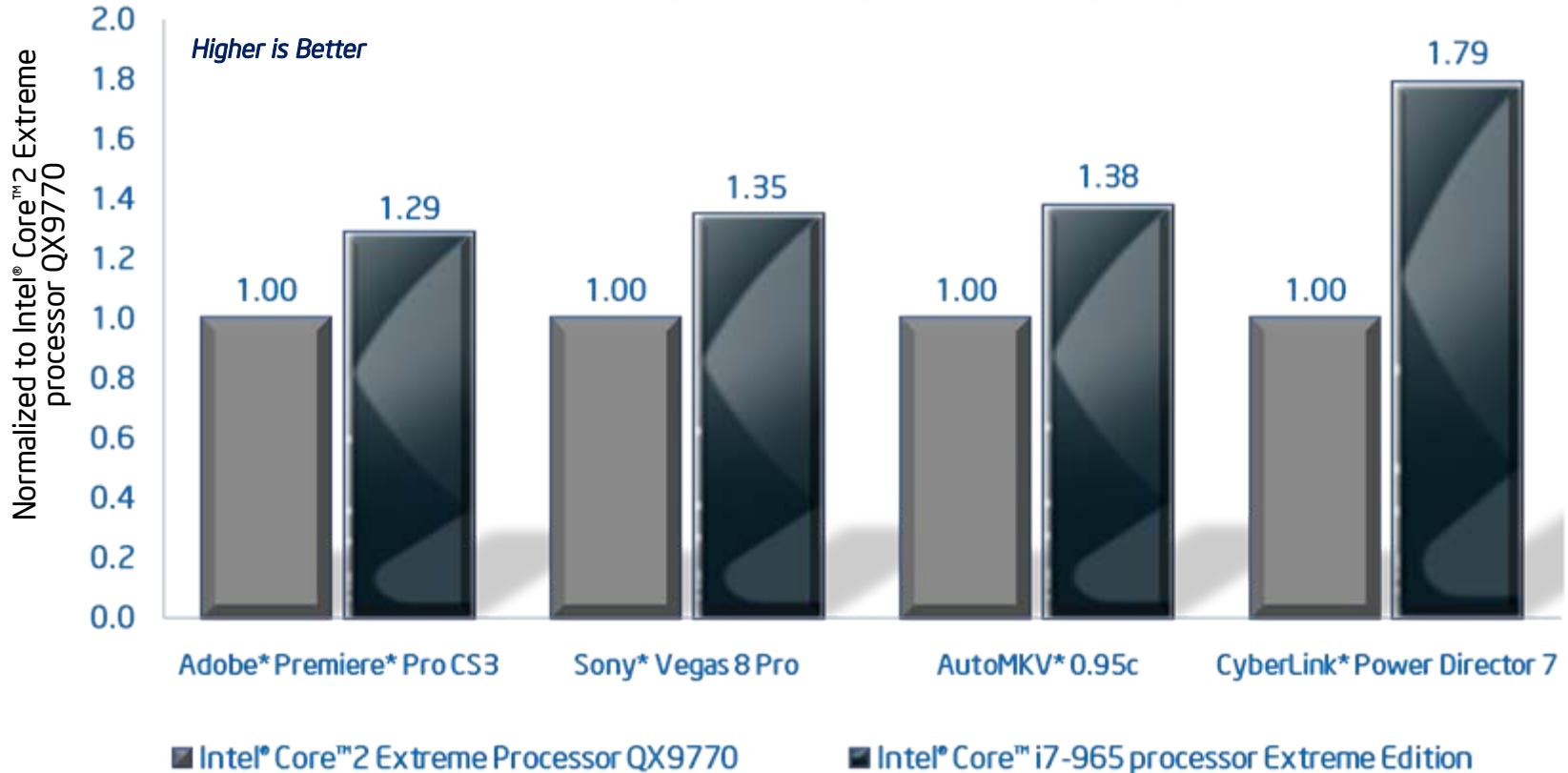




# Create Professional Quality Videos and Images Faster!



## Video Editing and Image Rendering Applications



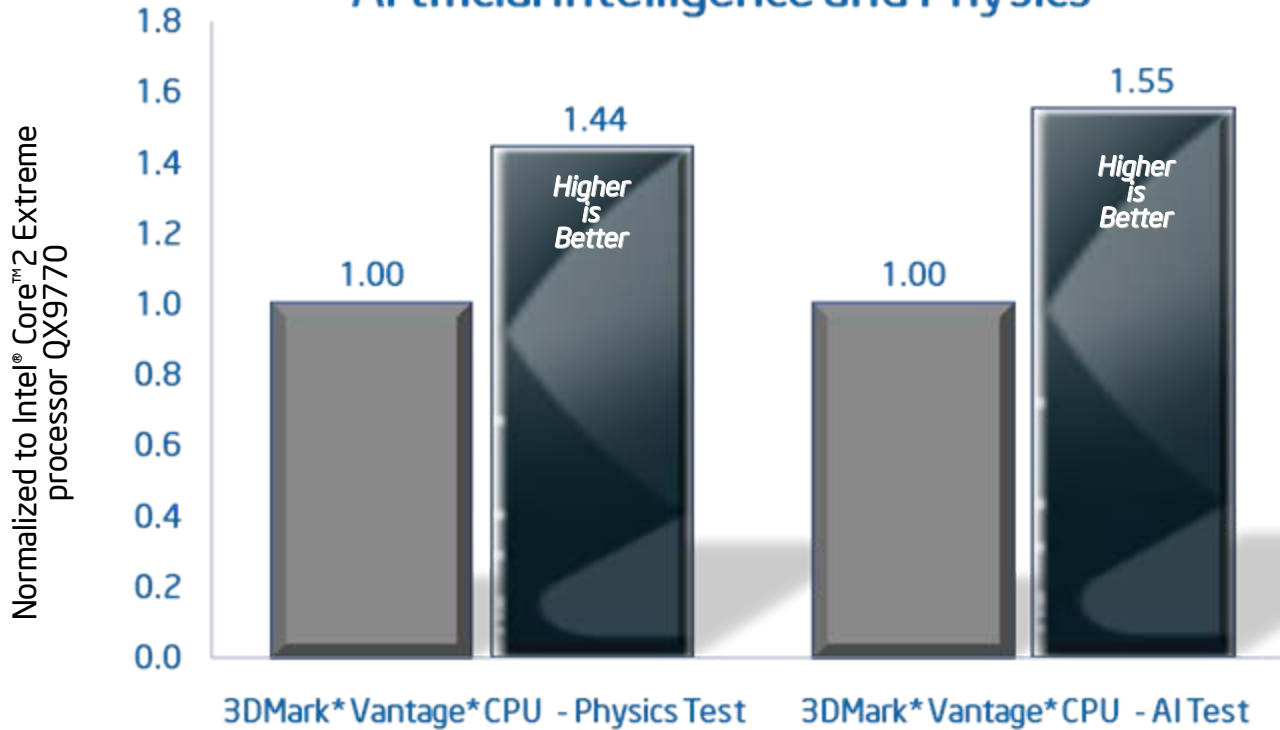
Ready, Set, ACTION!!  
The Speed you need for Independent Film Makers!



# Amazing Immersive Gaming



## Artificial Intelligence and Physics



CPU Test 1: Artificial Intelligence



CPU Test 2: Physics



■ Intel® Core™2 Extreme Processor QX9770 ■ Intel® Core™ i7-965 processor Extreme Edition

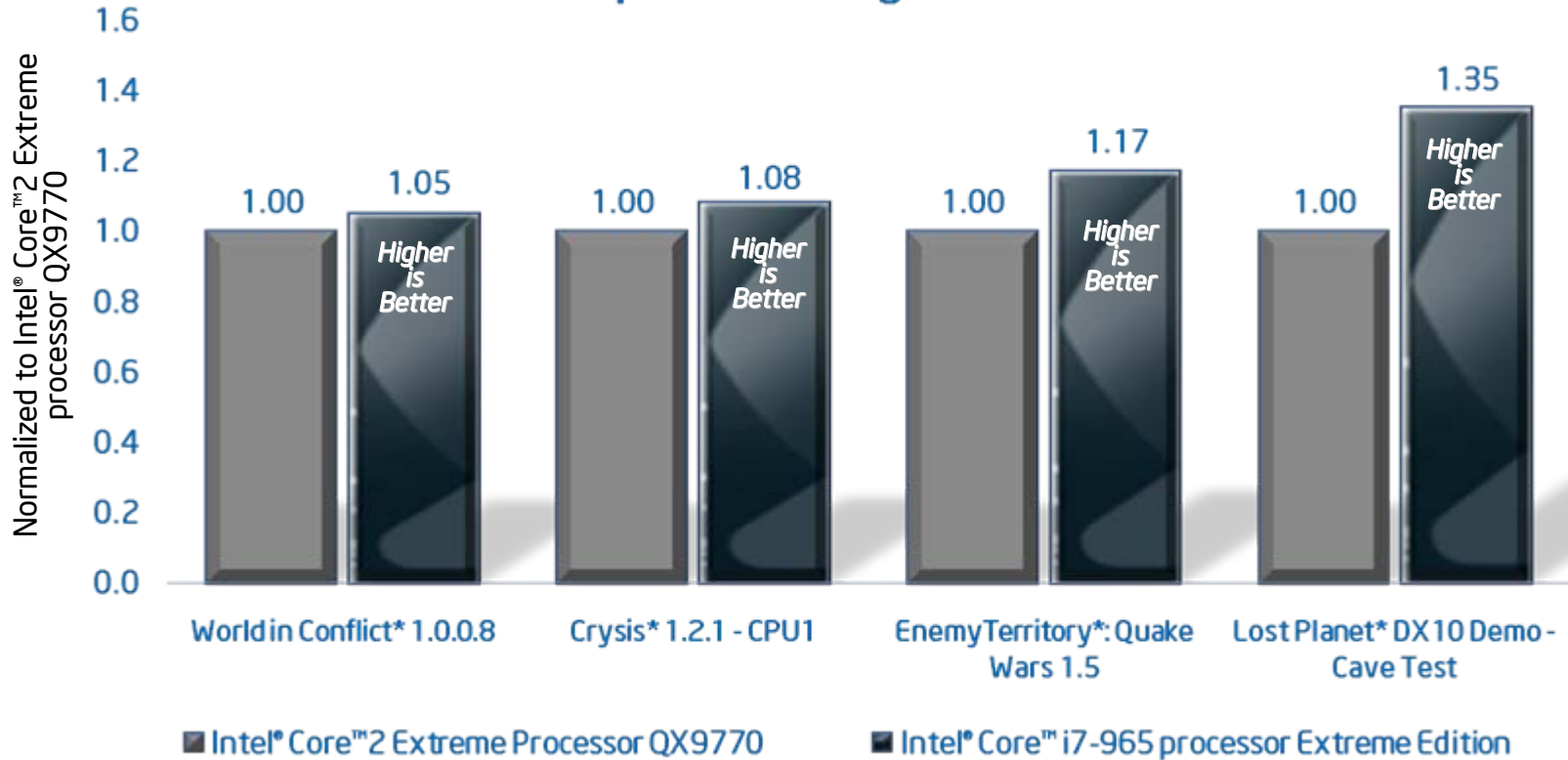
Intel® Core™ i7-965 processor Extreme Edition uses 8 threads to run Artificial Intelligence and Physics to make Games *ACT* and *FEEL* real



# Popular Gaming (Medium Settings @ 1280 x 1024 resolution)



## Popular Gaming Titles



The Intel® Core™ i7-965 processor Extreme Edition delivers higher performance on threaded games like Lost Planet



# Legal Notices and Important Information

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See [www.intel.com/products/processor\\_numbers](http://www.intel.com/products/processor_numbers) for details.

Performance tests and ratings are measured using specific computer systems and / or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, visit <http://www.intel.com/performance/>

Hyper-Threading Technology requires a computer system with a processor supporting HT Technology and an HT Technology-enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. For more information including details on which processors support HT Technology, see <http://www.intel.com/info/hyperthreading>.

Intel® Turbo Boost Technology (Intel® TBT) requires a PC with a processor with Intel TBT capability. Intel TBT performance varies depending on hardware, software and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel TBT. For more information, see <http://www.intel.com/pressroom/archive/releases/20080819comp.htm>.

All products, computer systems, dates, and figures specified are preliminary based on current expectations, and are subject to change without notice.

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# System Configuration for the Intel® Core™ i7-965 processor Extreme Edition except SPEC\* CPU2006\*

**Configuration 1:** Intel® Core™2 Extreme Processor QX9770 (3.20GHz/1600 FSB /2x6 MB L2) Asus P5E3 Premium board, X48 chipset 2 channel Corsair CM3X1024-1600 C7DHXIN XMP @1.8V 2GB (2x1GB) DDR3-1600 7-7-7-20-1T (BIOS: 0402, INF:8.4.0.1016)

**Configuration 2:** Intel® Core™ i7-965 processor Extreme Edition (3.20GHz/6.4GT/s QPI/8MB L3) SMT ON/Turbo ON, Intel® DX58SO 3 channel (3x1GB) Samsung M378B2873DZ1-CF8 DDR3-1066 7-7-7-20 (BIOS: 2260B, INF:9.1.0.1007)

## Important Read This

~~graphics (Graphics Driver: NV177.41), Windows\* Vista\* Ultimate 32bit.~~

Note: These systems contain different amounts of memory. The purpose is to compare the fastest supported Intel® Core™2 Extreme Processor platform (2x1GB of DDR3-1600) versus the recommended configuration (3x1GB of DDR3-1066) for the Intel® Core™ i7-965 processor Extreme Edition platform.



# System Configuration for the Intel® Core™ i7-940 processor except SPEC\* CPU2006\*

**Configuration 1:** Intel® Core™2 Quad processor Q9650 (3.00GHz/1333 FSB/2x6 MB L2) Asus P5E3 Premium board, X48 chipset 2 ch Corsair CM3X1024-1333 C7DHXIN XMP @1.8V 2GB (2x1GB) DDR3-1333 9-9-9-24-1T (BIOS: 0505, INF:8.4.0.1016)

**Configuration 2:** Intel® Core™ i7-940 processor (2.93GHz/4.8GT/s QPI/8MB L3) SMT ON/Turbo ON, Intel® DX58SO 3 ch (3x1GB) Samsung M378B2873DZ1-CF8 DDR3-1066 7-7-7-20 (BIOS: 2260B, INF:9.1.0.1007)

## Important Read This

~~graphics (Graphics Driver: NV177.41), Windows\* Vista\* Ultimate 32bit.~~

Note: These systems contain different amounts of memory. The purpose is to compare the fastest non Extreme version of the Intel® Core™2 Quad processor platform versus the fastest non Extreme version of the Intel® Core™ i7 processor platform.





# System Configuration for the Intel® Core™ i7-920 processor except SPEC\* CPU2006\*

**Configuration 1:** Intel® Core™ 2 Quad processor Q9450 (2.66GHz/1333 FSB/2x6 MB L2) Asus P5E3 Premium board, X48 chipset 2 ch Corsair CM3X1024-1333 C7DHXIN XMP @1.8V 2GB (2x1GB) DDR3-1333 9-9-9-24-1T (BIOS: 0505, INF:8.4.0.1016)

**Configuration 2:** Intel® Core™ i7-920 processor (2.66GHz/4.8GT/s QPI/8MB L3) SMT ON/Turbo ON, Intel® DX58SO 3 ch (3x1GB) Samsung M378B2873DZ1-CF8 DDR3-1066 7-7-7-20 (BIOS: 2260B, INF:9.1.0.1007)

## Important Read This

graphics (Graphics Driver: NV177.41), Windows\* Vista\* Ultimate 32bit.  
Note: These systems contain different amounts of memory. The purpose is to compare the Intel® Core™ 2 Quad processor platform versus the same frequency Intel® Core™ i7 processor platform.

