Dueling Dual Cores: AMD vs. Intel

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During SimHQ's recent looks at both AMD and Intel dual-core processors, the testing of these new parts with our benchmark suite gave the expected results and showed that the PC game development community has long been accustomed to producing titles coded for single- rather than multi-core systems. In fact, the only game among the list of titles used for testing that demonstrated any tangible performance gains from the additional core in these new processors was Microprose's rather aged title, Falcon 4. SimHQ therefore thought it would be of interest to our readers if we were to take a slightly more in-depth look at how Falcon 4 performs on AMD and Intel's new dual-core parts with some direct comparison benchmarking. In addition, we included high-end single-core processors from both companies to see how they would fare against the dual cores in both Falcon 4 and several non-threaded games.

Also included in today's testing is the new Pentium D Model 820, a 2.8GHz dual-core part. Perhaps in an effort to differentiate this line of dual cores from the Pentium Extreme Edition 840, the D Models do not support Hyper-Threading, though both have an 800 MHz front-side bus and 1 MB of L2 cache per core. The most interesting aspect of the D Model 820, however, is that of price: the 820 is currently stickered at $241 in units of 1,000, making it extremely affordable for home builders interested in experimenting with a dual-core system. In contrast to this low price, the Pentium 840 runs at $999 and AMD's X2 4800+ $1,001, though as SimHQ's initial testing showed the Athlon dual core demonstrated very strong performance in today's non-threaded titles while the Extreme Edition 840 lagged somewhat behind Intel's single-core processors due to a larger clock speed difference between the parts. Worth noting for overclockers, however, is that Intel is currently shipping the EE 840 with an unlocked multiplier.

SimHQ tried obtaining an Athlon 64 X2 4200+, the low-end of AMD's announced dual-core lineup, in time for this article but were unsuccessful. AMD stated that the handful of 4200+ review samples available to them had already been sent out during initial dual-core reviews and were unsure when more would become available.

Test Systems Setup

Intel

Intel 955XBK (955X chipset) motherboard
1 GB (2x512 MB) Micron DDR2 533MHz memory (4-4-4-12)
Pentium 4 670 (3.8GHz)

Pentium Extreme Edition 840 (3.2GHz dual core)
Pentium D Model 820 (2.8GHz dual core)

AMD

ASUS A8N SLI Deluxe (nForce4 chipset) motherboard
1 GB (2x512 MB) Corsair DDR400 memory (2-2-2-5)
Athlon 64 FX-55 (2.6GHz)
Athlon 64 X2 4800+ (2.4GHz dual core)

Full Review [3].

Hardware Reviews

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