

Assume that you're purchasing new servers for a medium-sized network where the primary server functions are file and printer sharing. Which CPU— Pentium, Xeon, Itanium, or POWER—is the best choice? Assume that you're purchasing new servers for a server farm. The servers host e-commerce Web sites and supporting software such as an Oracle DBMS. Which CPU is the best choice?

Either a Xeon or Pentium processor would best suit the first scenario. Print and file sharing aren't demanding on a processor at all for up to 200 users. According to Microsoft's website on SNA servers:

For up to 200 users:

<blockquote>

486/66 with approximately 32 megabytes of memory.

Two or more SNA servers per domain for hot backup.

With limited load, connections that can handle 56 kilobits/second or more may still provide adequate response time. However, at speeds below 56 kilobits/second, multiple SNA adapters will be needed.

A more powerful CPU and more RAM may be needed if SNA servers must support significant additional loads, such as file sharing.

</blockquote>

Microsoft Technet, <I>Basic Methods for Evaluating Hardware Requirements</I>. Retrieved January 21, 2009 from Microsoft website:

The article must be pre-year-2000, since Microsoft switched to HIS servers eight years ago.

Some sites I looked at suggested the Xeon might have an edge in having more cache and multiprocessing capabilities, which is nice for occasional high-traffic moments. It's not fun to have your boss breathing down your neck about the print server chewing on requests when everyone's trying to meet a proposal deadline. However, Fermilab happened to have some benchmarks up comparing Pentium and Xeon, which appears to show negligible differences in performance:

<http://www.microsoft.com/technet/archive/sna/plan/plangde/pl03hdw.mspx?mfr=true>

Fermilab (2003, Sep 4) *Xeon vs Pentium 4 Performance*. Retrieved January 21, 2009 from Fermilab website: http://lqcd.fnal.gov/benchmarks/xeon_p4.html

For e-commerce and Oracle DBMS, an enterprise server is necessary; therefore, the Itanium or Power server seems like the best fit for the second case. Since these two servers are competitors, it's difficult to figure out which one has the edge. Considering the expense, and the potential need to scale into future applications, a more comprehensive analysis is needed before making this kind of a purchase.

Ars Technica, (2005, Mar 3). <I>IDF: Itanium vs. Power</I>. Retrieved January 23, 2009 from Ars Technica website: <http://arstechnica.com/news.ars/post/20050303-4668.html>

Clabby Analytics (2006, Jun). <I>Itanium vs. Power Architecture</I>. Retrieved January 23, 2003 from Power.org: http://www.power.org/news/articles/Itanium_vs_Power_Architecture_More_Bunk_From_the_ISA.pdf

Final:

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A more powerful CPU and more RAM may be needed if SNA servers must support significant additional loads, such as file sharing (Microsoft).

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servers are competitors (Ars Technica, 2005), it's difficult to figure out which one has the edge (Clabby Analytics, 2006). Considering the expense, and the potential need to scale into future applications, a more comprehensive analysis is needed before making this kind of a purchase.

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Very interesting point about using gaming systems as a way of gauging computer power. I know that personal computers geared toward gaming are the most powerful on the market. When Windows Vista was just coming out, many of the reviews I read talked about how people with gaming systems wouldn't need to upgrade, but everyone else would have to buy a new computer.

One complication I can see with using gaming systems as a benchmark is the processing power of the graphics card. My understanding of graphics cards these days is that they are taking on bigger and bigger shares of the processing work to render graphics. This fact, if I'm understanding it correctly, could complicate this benchmark.

Going along with Jose's research. I found this spec, an IBM power running Oracle and Windows server from the Transaction Processing Performance Council:

http://www.tpc.org/results/individual_results/IBM/IBM_P570_Linux_Oracle_071005_ES.pdf

It prices an IBM Power system at more than half a million dollars. I believe our Itanium server at the Coast Guard was somewhere in this ballpark. When you quantify this server purchase another way, that you could higher 8 to 12 personnel for a year with that money, it puts it into a different perspective.