

Re: Intel releases 64bit Xeon

Source: <http://unix.derkeiler.com/Newsgroups/comp.os.vms/2004-03/0433.html>

From: Dan Foster (usenet_at_evilphb.org)

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In article <4046C790.253C5463@istop.com>, JF Mezei

<jfmezei.spamnot@istop.com> wrote:

> *Bill Todd wrote:*

>> > *Note that the 370 architecture doesn't have a bright future since IBM*

>> > *is porting MVS over to POWER. (or has that been cancelled ?)*

>>

>> *Nobody's talking about the 370 architecture, JF.*

>

> *Isn't that what the p390 systems are ????? I realise that since the*

> *370s, IBM has managed to go to 31 bit addressing (from 24), but isn't it*

> *the same assembler instructions with a few additions ??*

There are three addressing modes (due to historical growth) for current mainframe processors:

24 bit, 31 bit, *and* the current 64 bit.

The zSeries systems are based on a 64 bit architecture that is a superset of ESA/390. Perhaps this is the port you were thinking of? If so, it was completed a while ago.

The zSeries 990 contains MCMs (multi-chip modules, similar to POWER4), LPAR support, high speed interconnectivity, and a lot of other stuff you'd expect with high end hardware.

I'm not clear on the exact relationship between POWER and the mainframe CPUs but it seems that there is a fair amount of common stuff between POWER4 and the current mainframe CPUs.

It may be partly due to the in-house reorganization IBM did a few years ago where they ordered their engineers from various teams to collaborate more in-house to share talent, resources, and adapt the best ideas to products that they could adapt for their product family or to introduce an one-size-fits-all product.

A perfect example is the ESS (Shark) disk subsystem that was originally designed for the mainframe but adapted with lower-end features and qualified for lower end hardware without having to come out with four

separate disk products.

At any rate... IBM is big on maintaining compatibility modes throughout decades of advances in hardware (and software) so it seems rather unlikely the old architectures will be dropped; more likely it will continue to run on newer/current hardware in some sort of compatibility mode. It's impressive when I see a number of older mainframe programs, some about 40 years old, continue to compile and execute correctly on modern hardware.

VMS is nearly as good... I say 'nearly' because there are RTL lib changes that sometimes breaks application behavior and VMS hasn't been around for the same 40+ years... but it's still pretty good where you can often recompile programs from much older VMS versions and still have it run well today on modern hardware.

So getting back to this thread... I honestly don't think that IBM's going to suddenly drop older architectures because it would be a major selling point for their competitors, and IBM prides themselves on giving customers a good feeling of 'can plan on their current apps working for many years, even across hardware families' -- which is a major selling point for the mainframe market. IBM would find a way to make older stuff work on newer hardware, and it seems that they have done so.

If you ever want to find *the* definitive mainframe information, you could ask one of the long-time IBM mainframe people... such as Mr. Lynn Wheeler (now retired) whom typically hangs out in comp.arch and is full of interesting details about the evolution of the mainframe hardware and software, and would know this stuff very well.

Also: <http://www-1.ibm.com/servers/eserver/zseries/>

-Dan

Disclaimer: I don't work for any computer manufacturer or vendor. :-)