THE CLIPPER GROUP

Navigator™

Navigating Information Technology Horizons℠

Published Since 1993 Report #TCG2003034 July 29, 2003

HP Takes First (Super-sized) Step Toward Product Line Consolidation (Simplification)

Analyst: David Reine

Management Summary

Choices, every day we face them. Every day we make them. Never have these choices been more important than the ones that we make regarding our retirement investments. There are plans everywhere: 401Ks, Keoghs, IRAs, ad infinitum. Most of us do not possess the intimate knowledge necessary to select a broad enough base of diversified investments. Nor do we have the time to manage the buys and sells necessary to stay solvent in the rapidly moving financial markets. For that, we depend upon investment vehicles such as mutual funds. We rely upon mutual fund investment companies and the funds managers to keep our investments on track.

With so many mutual funds from which to select, many with similar investment goals and products, how do we select the right one for us? We look first at our investment criteria. What is our desired goal for annual gain? How much risk can we withstand? How long do we have to reach our financial goals? How much are the fees and expenses? We take these criteria, seek out financial advice or do our own research and select the fund that best meets these goals. Then we sit back, wait for retirement, and collect our gains! *Not exactly!* What frequently happens is that we receive an unexpected letter notifying us that our fund, a pillar of our investment portfolio, has changed directions or merged with another, likely altering our original investment strategy. **Certainly, our long-term expectations have been upset. And now to the relevant point - this has been happening in the enterprise systems arena as well.**

What happens when you are informed that the server on which you rely has been scheduled for no further development after a couple of years? After the shock and dismay, and even anger, comes the reality that your long-term plans need to be adjusted. For those of us who have been in the industry for three or more decades, we have seen this happen repeatedly, as vendors have dropped models or even left the computer business. Your challenge is clear, how to get from where you are to some place as good, or even better. With the long string of mergers that resulted in the present-day Hewlett-Packard (HP), we have many such happenings under one roof. So we have been waiting and watching to see how HP will respond to the many disenfranchised customers. Well, the answer is in place, and there is something good for almost everyone except those unwilling to accept the reality of the situation. HP has announced its *Integrity* family of *Itanium 2* servers. Read on to learn more.

IN THIS ISSUE

A Smorgasbord of Platforms

HP has come to possess a smorgasbord of servers, because HP acquired Compaq, which acquired Digital Equipment Corporation (DEC) and Tandem Computers, and by having its own families of servers based on Intel and proprietary processors. From the DEC acquisition, HP inherited *AlphaServers*, with the *TRU64* and *OpenVMS* operating systems, and Tandem *MIPS* RISC-based non-stop systems. From Compaq they obtained the *Proliant* IA32[1] based servers. In addition, from their own product history, HP has the Itanium-based Servers running *Windows, HP-UX* and *Linux*. Hp also has the *PA-RISC* based *HP9000* running the *HP-UX* UNIX operating system. Thus, HP's legacy product set consists of five families that can all run some combination of Windows, UNIX, and/or Linux operating system(s):

- **HP Itanium-based servers** – Itanium & Itanium-2 (*McKinley*) Entry Servers
- **HP 9000/e3000** – PA RISC based Entry/Mid-Range/High End Servers
- **HP AlphaServer** – 64-bit Alpha architecture
- **HP Nonstop S-series** – MIPS-based non-stop Servers
- **HP Proliant** – Xeon IA32-based Servers

This led to a ridiculous and unsustainable situation of having too many platforms to carry through further development, not to mention the loss of manufacturing economies of scale. The infrastructure to design, manufacture, distribute, and support all of these disparate products is an expensive and cumbersome undertaking. Indeed, you may say the same for managing all of these in a single data center.

A Strategy of Consolidation

HP needed to consolidate these to a much smaller number of common platforms, not just for its own benefit, but also to carry forward its relations with all of its server customers. The result is the *HP Integrity Family* of servers, based upon Intel's Itanium 2 processor, plus the continuation of the Proliant IA32 line. These are to be the common server platforms for the future. (See the box above, for the Integrity Family line-up.)

HP's *Itanium 2* Servers

HP *Integrity Family*

- ***rx2600, rx5670*** - 1-4 way servers
- ***models to be announced***– 8-16 way platforms
- ***Superdome*** – 16, 32, and 64 CPU platforms
- ***XC6000*** – HPTC (high-performance technical computing) Engine (expected 9/03)

HP *Integrity NonStop*

- 2004 Announcement

The new Integrity family uses the Itanium 2 microprocessor, developed under a joint effort by HP and Intel. These servers provide HP's customers with a high-tech solution using a low-cost, commodity processor-based platform and the long-term commitment no longer possible for all of the above platforms. For example, OpenVMS originally ran on *VAX* servers. Ten years ago, Digital Equipment migrated the VAX to Alpha. Now, this product has evolved to run on the Integrity Itanium 2 platform. at the very beginning of its life cycle. This is very important for HP's financial services, telecomm, manufacturing, and government customers, who have invested in this "bulletproof" architecture for the past 25 years because of its scalability, performance, and proven robustness.

Likewise, HP has evolved HP-UX 11i into *v2* for Itanium 2, with a common "look and feel" to the previous version, including the operating environment, ISUs and management, security, and availability solutions. **V2, in fact, is the first UNIX**

[1] Intel Architecture 32-bit processor

operating system to scale to 64 CPUs on the Itanium processor

More importantly, HP has provided its customers with a Business Systems evolution, including end-to-end programs designed to ease the transition from legacy platforms, lower the risk and minimize the cost. HP provides a full suite of products and services, and tools ensuring business continuity as customers evolve to the Integrity Itanium 2 platform. In addition, HP has established relationships with a wide range of partners to assist in the consolidation, porting and migration efforts.

The HP Proliant Server will continue as an IA32-based family of processors, with Integrity Servers complementing and extending the Proliant Servers for Linux and Windows computing environments. The other four product sets will evolve into two elements of the HP Integrity family, both using the Itanium 2 CPU.

The first member – *HP Integrity* – will serve as the confluence of the HP Itanium 2-based (*McKinley*), HP 9000, and HP AlphaServer families. **With the capability to run Windows, HP-UX, and OpenVMS simultaneously in separate partitions, the Integrity Server will provide to all enterprises the mission-critical capability to execute a variety of operating systems and applications on a single, flexible, adaptive platform**. It will also encompass a platform for high-performance and technical computing, scheduled for announcement in the fall.

The second member – *HP Integrity NonStop*, scheduled for a 2004 introduction, will continue the HP heritage of nonstop computing, evolving existing enterprise customers to Itanium 2.

Why Itanium?

The Itanium 2 processor is the second in a family of 64-bit commodity[2] CPUs that does more then just bring the high performance and volume efficiencies of the Intel architecture to high-performance and mission-critical enterprise applications. Based upon the Explicitly Parallel Instruction Computing (EPIC), Itanium 2 improves upon the scalability of the IA-32 Proliant, especially above the 8-way configuration, enabling Windows applications to penetrate deeper into the DataCenter. It is also binary compatible with the IA-32 instruction set and brings forward the following features introduced with the first generation Itanium processor:

- **Advanced error detection, correction and containment** provided by Machine Check Architecture (MCA),
- **Comprehensive error logging,** and
- **Error Correcting Code** (ECC) on cache and the system bus.

These features enable enterprises to maximize their investments by delivering industry-leading performance at lower cost with a commodity chip rather than with a proprietary architecture. Itanium 2 is expected to increase performance by 50 to 100% on platforms using it at speeds up to 1.5GHz, as compared to the initial Itanium 1 implementation at 733/800 MHz.

Performance Evolution

In order to be able to protect the investment that enterprises have made in legacy servers, HP needed to produce a platform that not only delivers outstanding performance, it also needs to deliver state-of-the-industry price/performance as well. How well do the new Integrity platforms perform?

In recent TPC-C tests[3] for raw performance, the 64-CPU Itanium 2

[2] *Commodity* is a term with many common uses. In this case, the reference is to widely-used processors (used by many systems vendors) resulting in large-scale manufacturing, which tends to lower the price of the processors, approaching commodity pricing levels. It does not imply that there are multiple, competing sources from which to acquire the component.

[3] *TPC-C* is a Transaction Processing Counsel (TPC) transactional (OLTP) benchmark. This provides an ideal vehicle to compare the Integrity servers with the legacy platforms that preceded it, as well as with the competing platforms. See the TPC-C results at *www.tpc.org.*

Superdome ranked first in its category upon test completion and has significantly more enterprise performance than the legacy servers that preceded it. **In comparison to the PA-RISC implementation of Superdome, the Itanium 2 model has a 67% higher performance rating. Looking at price/performance, the Itanium 2 model is 42% less expensive than its proprietary predecessor. The comparison is even more striking for the AlphaServer. The GS320 has a rating one-third that of the Superdome, with a price/performance almost five times higher**

The same comparisons are true for the departmental servers at the lower end of the scale. A quad-processor *rx5670* has a performance rating of twice that of an 8-way *rp7400*. Twice the performance with ½ of the infrastructure![4] And the cost? The rx5670 costs less than 30% of the rp7400. This means that in an OLTP environment, you can achieve the same performance as an 8-way PA-RISC machine with a dual-processor Itanium 2, at less cost. This will definitely attract the attention of your CFO.

The Integrity Difference

This is no ordinary Itanium 2 server. There are significant performance advantages of the Integrity platform because of HP's *SX1000* chipset that enables the integration of more than 64 Itanium 2 CPUS. This VLSI circuit technology was invented by HP and is the same as in the *PA-8800* Superdome, thus ensuring a smooth transition for Superdome customers as they adapt to the commodity Itanium 2 with the capability to execute multiple copies of HP-UX, Windows, Linux, and OpenVMS concurrently. This scalability enables a continued reduction in TCO with standards-based computing. Databases that are constrained by the IA-32 architecture can now expand with key enterprise solutions from SAP and SAS that clearly benefit from the performance gains of the Integrity EPIC architecture.

The availability of the *MX2* daughter board in 2004 will double the number of Itanium 2 CPUs in a system. This is a year ahead of Intel's scheduled delivery of the board technology to other vendors.

Conclusion

With this announcement, HP has taken another step in the transition of their product set to the adaptive enterprise. **They have delivered on their promise to replace the diverse platforms that make up their legacy with a single consolidated platform capable of executing the three major commodity applications sets available today**: Windows, UNIX (HP-UX, of course), and Linux, along with the legacy OpenVMS applications. This enables, for example, the migration of mission-critical UNIX ERP applications to Itanium 2 under HP-UX v11I. It also permits the evolution of Windows-based infrastructure applications, performance optimized to scale-up with 64bit Microsoft *SQL Server 2000 Enterprise Edition*, and a low-cost Linux development environment, to protect the investment that customers have made in their legacy OpenVMS environment.

Using Itanium 2, HP has delivered the price/performant platform necessary to take their customers to the next level of server consolidation required to control the IT budgets in the years to come. **While you may have begun this journey as a forced march, reaching the *Promised Land* has many attractive benefits for HP's customers and prospects alike.**

[4] And for some applications that are licensed on the basis of processor count, this can result in significantly lower software costs as well.

About The Clipper Group, Inc.

The Clipper Group, Inc., is an independent consulting firm specializing in acquisition decisions and strategic advice regarding complex, enterprise-class information technologies. Our team of industry professionals averages more than 25 years of real-world experience. A team of staff consultants augments our capabilities, with significant experience across a broad spectrum of applications and environments.

- ***The Clipper Group can be reached at 781-235-0085 and found on the web at www.clipper.com.***

About the Authors

David Reine **is a Senior Contributing Analyst for The Clipper Group.** Mr. Reine specializes in enterprise servers, storage, and software, strategic business solutions, and trends in open systems architectures. He joined The Clipper Group after three decades in server and storage product marketing and program management for Groupe Bull, Zenith Data Systems, and Honeywell Information Systems. Mr. Reine earned a Bachelor of Arts degree from Tufts University, and a MBA from Northeastern University.

- ***Reach David Reine via e-mail at dave.reine@clipper.com or at 781-235-0085 Ext. 37. (Please dial "1-37" when you hear the automated attendant.)***

Regarding Trademarks and Service Marks

The Clipper Group Navigator, **The Clipper Group Explorer**, **The Clipper Group Observer**, **The Clipper Group** *Captain's Log*, and *"clipper.com"* are trademarks of The Clipper Group, Inc., and the clipper ship drawings, *"Navigating Information Technology Horizons"*, and *"teraproductivity"* are service marks of The Clipper Group, Inc. The Clipper Group, Inc., reserves all rights regarding its trademarks and service marks. All other trademarks, etc., belong to their respective owners.

Disclosure

Officers and/or employees of The Clipper Group may own as individuals, directly or indirectly, shares in one or more companies discussed in this bulletin. Company policy prohibits any officer or employee from holding more than one percent of the outstanding shares of any company covered by The Clipper Group. The Clipper Group, Inc., has no such equity holdings.

Regarding the Information in this Issue

The Clipper Group believes the information included in this report to be accurate. Data has been received from a variety of sources, which we believe to be reliable, including manufacturers, distributors, or users of the products discussed herein. The Clipper Group, Inc., cannot be held responsible for any consequential damages resulting from the application of information or opinions contained in this report.