Quantifying the Total Cost of Upgrading HP-UX Environments from HP 9000 servers to HP Integrity servers

A Detailed Analysis of the Potential Benefits of Upgrading HP-UX environments from HP 9000 servers to HP Integrity servers

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Upgrading HP-UX Environments from HP 9000 to HP Integrity

Executive Summary

HP has been shipping HP 9000® servers with PA-RISC® microprocessors since about 1990. Since that time, nearly 100 different models of servers have been introduced ranging from single-CPU entry-level machines to enterprise-class Superdome® models that support 128 cores. Today, thousands of companies worldwide rely on HP 9000 servers and the HP-UX® operating system as key components of their IT infrastructure. Several years ago HP made a strategic decision to consolidate its high performance server product line by replacing servers based on PA-RISC and Alpha® chips with servers based on Intel's® Itanium® processor. HP's current plans are to continue selling HP 9000 systems until at least December 2008. Furthermore, HP has made a commitment to support these systems for at least five years after the last ship date if running HP-UX 11i V1 or V2. Support for V3 will continue for at least a further year. This extended support, combined with the reliability of HP 9000 servers, means customers can continue to rely on their HP 9000 servers through the year 2013 and beyond. Customers using HP 9000 servers, therefore, do not have to switch their systems out of necessity. However, one of HP's main reasons for moving to its Integrity® servers was to have the ability to offer higher performance servers at much lower prices (due to standardizing on the Itanium chip). This paper provides a detailed Total Cost of Upgrade™, or TCU™, analysis for upgrading HP-UX environments from HP 9000 systems to HP Integrity systems. It is based on data collected from actual customers who have made this upgrade, as well as current system and service pricing. This paper quantifies the costs and benefits from the upgrade and provides detailed cash flow analyses for four different upgrade scenarios. **The analysis shows that in all four scenarios, the upgrade from HP 9000 to HP Integrity pays for itself in less than 3 years. In three out of the four scenarios studied, the payback period is less than 2 years.**

TechWise® Research surveyed a total of 232 IT managers in the U.S. and in Europe who work with HP-UX environments running on HP 9000 and HP Integrity servers. These respondents manage a total of 6,123 HP 9000 servers and 1,384 HP Integrity servers. The surveys were designed to understand how the Integrity servers are performing compared to the HP 9000 servers on a variety of attributes. TechWise also utilized system pricing data from IDEAS International, and obtained performance data from HP for the analyses. The analyses discovered **several benefits to the upgrade including reduced HP support costs, improved performance, opportunities for consolidation, use of the latest technology, and the potential reduction in Oracle support costs**.

Integrity servers often offer twice the performance of older HP 9000 systems. This advantage translates into several benefits for customers. First, an Integrity server can often offer comparable performance with half the number of processors of the original HP 9000. This lowers the "out-of-pocket" costs to upgrade. Second, the Integrity servers will be better able to handle future growth in computational needs. Third, companies can use Integrity's superior performance to consolidate multiple HP 9000 servers into fewer Integrity servers. TechWise Research explores this consolidation opportunity in a separate white paper entitled *The Benefits of Using HP Integrity Servers to Consolidate HP 9000 Servers*. Finally, thanks to Oracle's treatment of the dual-core Montecito chips in Integrity, companies may be able to cut their Oracle support costs in half by upgrading from HP 9000 to Integrity.

Each company that uses HP 9000 servers has a unique situation and decision criteria when it comes to upgrading from HP 9000 to Integrity. This paper shows that the age-old adage of *"if it ain't broke, don't fix it"* may not apply in many cases. HP has taken steps to make the upgrade decision easier including technical and financial assistance. Details may be found on HP's website at: http://www.hp.com/products1/evolution/9000/faqs.html. The results from 232 customer surveys show that **the majority of companies view Integrity servers to be as good, or better, than HP 9000 servers. This study also shows that HP-UX on Integrity is just as easy to manage and reliable as HP-UX on HP 9000.** Any company that plans on using HP-UX for the foreseeable future would be wise to look into upgrading to Integrity. **The upgrade has the potential to pay for itself quickly, lower annual support and operating costs significantly, and improve system performance dramatically**. Furthermore, the ongoing savings from the upgrade may be used to purchase additional hardware or invest in the development of new software applications.

Brief History of HP-UX and HP 9000

HP introduced the HP 9000® servers back in 1982.(1) In the ensuing twenty-five years HP introduced nearly 100 different models of servers ranging from single-CPU entry-level machines to enterprise-class Superdome® models that support 128 cores. After the acquisition of Compaq Computer (and the division that was formerly Digital Equipment) in 2001, HP offered many different hardware platforms including servers based on x86, PA-RISC®, and Alpha® chips. Shortly thereafter HP made a decision to consolidate its product line and to move towards standardizing future platforms on x86 and Itanium® processors. Just this year HP stopped shipping its AlphaServers®. HP's current plans are to continue selling HP 9000 systems until at least December 2008. Furthermore, HP has made a commitment to support these systems for at least five years after the last ship date if running HP-UX® 11i V1 or V2. Support for V3 will continue for at least a further year. This extended support, combined with the reliability of HP 9000 servers, means customers can continue to rely on their systems through the year 2013 and beyond.

The successor to the HP 9000 is the HP Integrity®, a family of servers based on the 64-bit Itanium 2 microprocessor. HP introduced the first Itanium 2 servers in 2002, which were re-branded as HP Integrity servers in 2003. HP Integrity servers have always supported the HP-UX operating system. HP's development team has focused on enhancing the reliability, security, and partitioning abilities of HP-UX. Specifically, reliability has been improved through clustering technology and package failover on a system outage, as well as redundant hardware, increased quality testing, and error monitoring and correction. HP added kernel-based intrusion detection, strong random number generation, stack buffer overflow protection, security partitioning, role-based access management, and various open source security tools in HP-UX version 11i v2. All of this has improved the security of HP-UX. System partitioning options include hardware partitions, isolated OS virtual partitions, and Virtual Server Environments (VSE).

This past February HP introduced HP-UX 11i v3. Version 3 offers **enhanced** performance and **simplified management** that will make the decision to upgrade HP 9000 servers to HP Integrity servers even more attractive for companies. Although this new version is available for both HP Integrity and HP 9000 servers, it has been specially designed to take full advantage of the Intel® Itanium 2 processor family. Version 3 offers 30% faster operating system performance than Version 2. In addition, it is designed to take full advantage of the Dual-core Intel Itanium 2 processor with Hyper-Threading. This makes available a whole new level of server virtualization, a topic covered in a separate white paper entitled *The Benefits of Using HP Integrity Servers to Consolidate HP 9000 Servers*. Version 3 also offers improved security with a Native Encrypted Volume and File System (EVFS) for UNIX. Finally, Version 3 supports Dynamic Root Disk (DRD). This toolset allows users to clone an HP-UX system image onto an inactive disk for software maintenance and recovery. System downtime is reduced because new software or patches may be installed on the cloned system image.

TechWise Research recently published a white paper that analyzed the Total Cost of Upgrading OpenVMS AlphaServer systems to OpenVMS on Integrity. This paper looks at the upgrade decision for HP 9000 customers. Most customers can count on their current

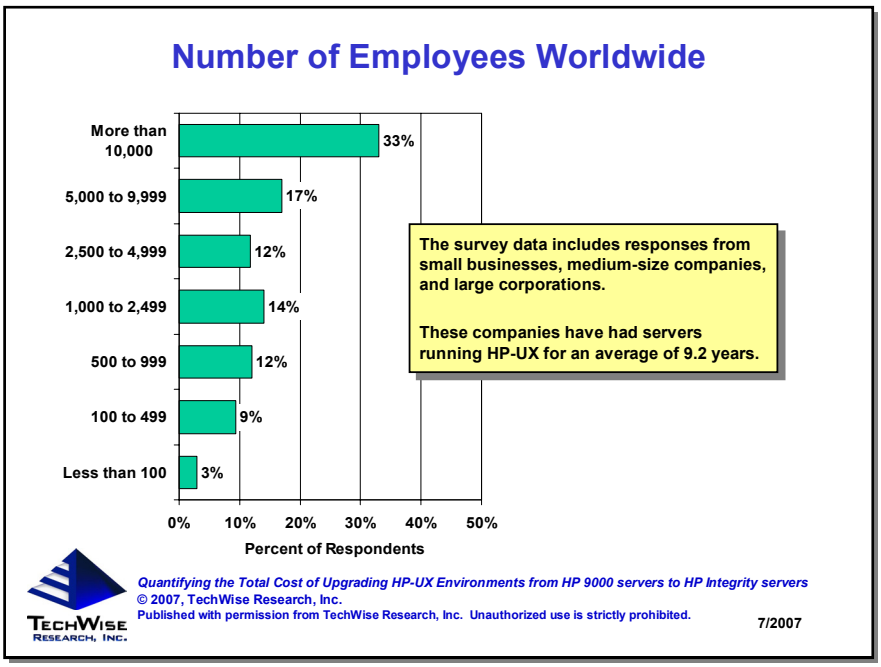
(1) Much of the historical data comes from Wikipedia, the free encyclopedia.

HP 9000 systems to continue to function reliably for many years into the future. Furthermore, HP will continue to support its HP 9000 servers for at least five years after the last sales date. How then could it possibly make sense for customers to upgrade their HP 9000 systems to Integrity servers at this time? Shouldn't the age-old adage of *"if it ain't broke, don't fix it"* apply? In some cases it will not make sense to upgrade from an HP 9000 to an Integrity server environment. HP 9000 servers that were purchased in the past year or so may not be good candidates to upgrade at this time. This is because these new servers would likely still be covered under HP's original manufacturer warranty. As a result, the payback period for upgrading these servers could extend well beyond 36 months. In other scenarios, a customer specific application may not yet be available on HP-UX Integrity. Similarly, companies running older applications may no longer have resources familiar enough with the applications to help port them over to Integrity. Despite the above reasons, this paper will show that for many customers the decision to upgrade their HP-UX environments from HP 9000 to HP Integrity servers should not be delayed to the future. Rather there are sound financial and strategic advantages to be gained by implementing the upgrades today.

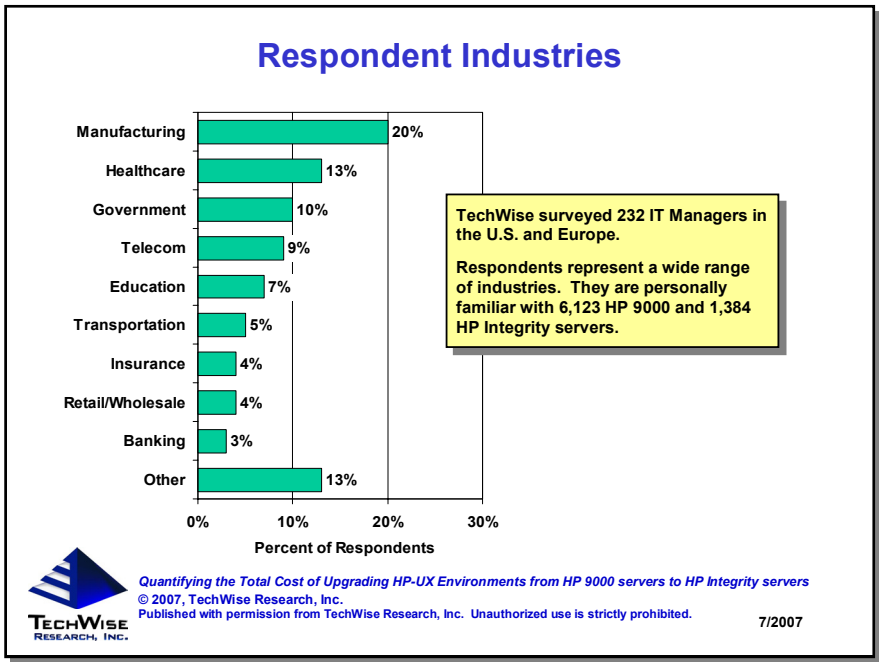
Data Collection Strategy

TechWise Research utilized current system and service pricing as well as customer data to perform robust Total Cost of Upgrade™ (TCU™) analyses. TechWise Research obtained current system and service pricing from IDEAS International. IDEAS International is recognized worldwide as a leading authority on systems technology, specializing in the research of comparative information on computer systems. Their current system and service pricing is updated daily with new product and price announcements. When buying servers, two customers can pay very different prices for two identical servers depending on when they buy them, and on the level of discount they can negotiate from their channel. In order to eliminate any timing or purchasing power bias from the analyses, TechWise used current list prices from IDEAS International. Few companies, however, pay list price for their servers. Our approach, therefore, is very conservative because it includes system pricing that is higher than what most companies would actually pay.

TechWise also designed and implemented an international research study to collect customer data relevant to the upgrade decision. The web survey targeted IT Managers who are using HP 9000 and Integrity servers in an HP-UX environment. The survey asked these IT Managers to compare Integrity to the HP 9000 on a variety of attributes. It also measured customer satisfaction with HP-UX Integrity servers. Respondents were recruited in the United States and Europe.



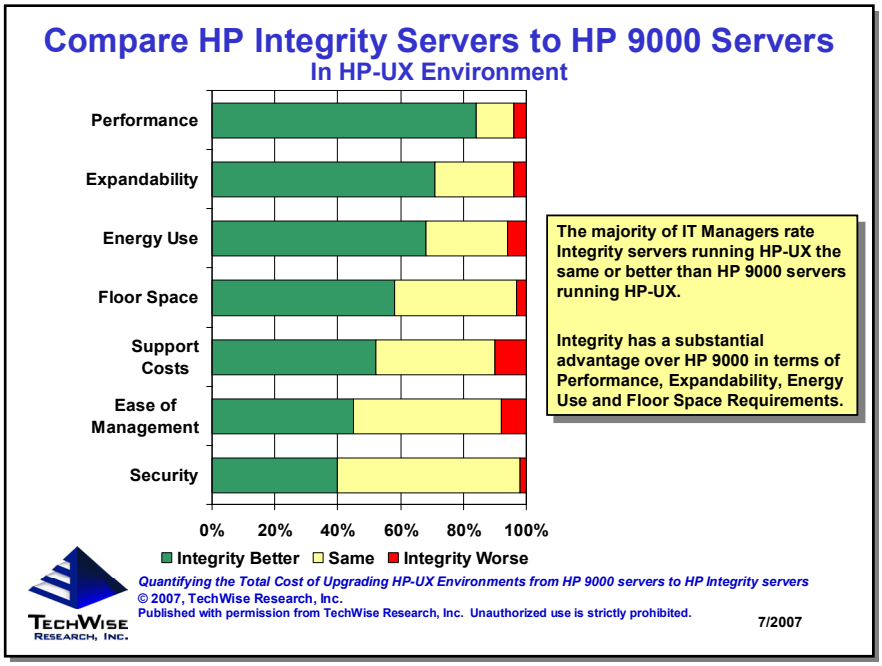
One of the design criteria for the study was to survey a random sample of companies that use HP-UX servers. The chart to the left, and the chart below, illustrate that this criteria was met. Respondents came from companies of all different sizes ranging from small businesses all the way to very large corporations. Regardless of company size, most respondents are very familiar with HP-UX. Respondents indicated that their companies have been using HP-UX, on average, for 9.2 years.



Respondents came from a wide variety of industries including Manufacturing, Healthcare, Government, and Education. The data set is robust not only in terms of the number of respondents, but also in terms of the number of servers managed by these respondents. Some of the respondents work with only a couple of HP-UX servers, while others work with 50 or more servers. This diversity enabled TechWise to identify how certain management costs are related to the number of servers managed. Overall, the 232 survey respondents were personally familiar with 6,123 HP 9000 and 1,384 HP Integrity servers, all running HP-UX.

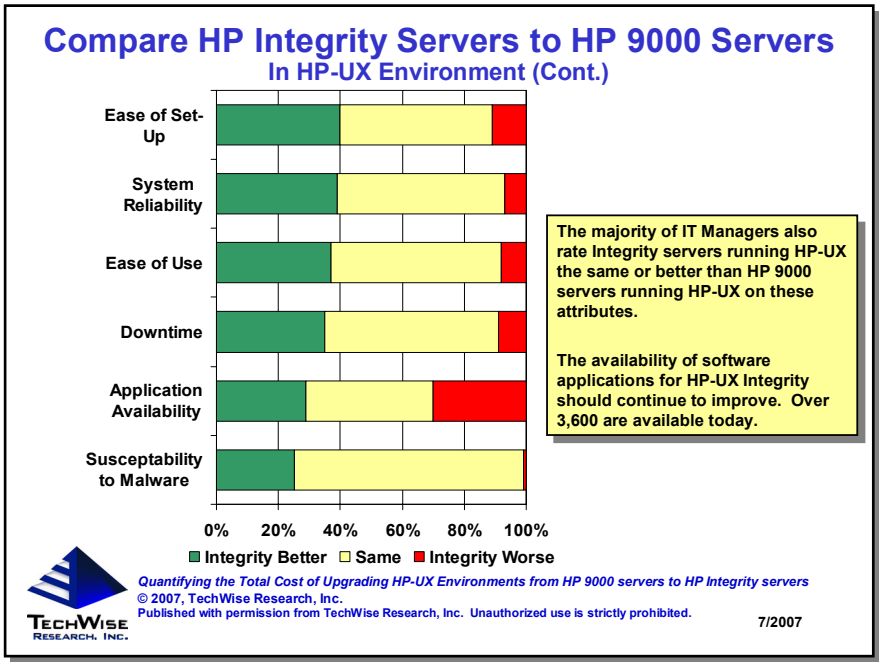
Users Compare HP Integrity Servers to HP 9000 Servers

The 232 respondents were asked to compare their HP Integrity servers to their HP 9000 servers on 13 different attributes such as performance, ease of use, reliability, and application availability. All of the attributes are operational in nature and concern the use of the two types of servers. Respondents used a five point scale and indicated that the Integrity servers were either "much better", "somewhat better", "about the same", "somewhat worse", or "much worse" than the HP 9000 servers. To facilitate analysis, TechWise combined the "much better" and "somewhat better" and "much worse" and "somewhat worse" categories into "better" and "worse", respectively. The chart to the left illustrates the findings for the first group of attributes. It shows that the majority of IT Managers rate the Integrity servers as the same or better than the HP 9000 servers. Integrity is seen to have a substantial advantage over HP 9000 in terms of performance and system expandability. This is not surprising given that Integrity is based on newer technology. In fact, two of the main reasons why companies should consider the upgrade are Integrity's superior performance and expandability. Customer perceptions regarding Integrity's performance advantage over HP 9000 will likely become even better as more companies adopt HP-UX 11i Version 3. This new version offers a 30% boost in operating system performance over Version 2. Twenty-one percent of respondents indicated that they are running Version 3 (which was introduced earlier this year) on some of their Integrity servers.



It is interesting to note that only about half of the respondents view Integrity support costs to be better than HP 9000 support costs. This is surprising because, as will be shown later, Integrity support costs are substantially below HP 9000 out-of-warranty support costs. It is possible that some of the HP 9000 servers rated by respondents were purchased in the past two years and are still under HP's original support contract.

The chart to the right illustrates how Integrity servers compare to HP 9000 servers on the second set of attributes. Between 30% and 40% of respondents rate Integrity better than HP 9000 on attributes such as ease of set-up, system reliability, and ease of use. More respondents view the two server platforms as being the same on these attributes. This is not surprising because all of these attributes (as well as ease of management shown on the previous chart) are influenced by the operating system software. Since both systems are running the same HP-UX operating system, it is logical to expect the two systems will behave similarly on these operational attributes.



The one item of note concerns the availability of software applications for Integrity servers running HP-UX. Seventy percent (70%) of respondents rate application availability on Integrity as good, or better, than HP 9000. However, 30% rate Integrity as worse than HP 9000 in terms of application availability. This is not surprising since HP 9000 servers have been available for decades compared to 5+ years for Integrity servers. In a separate question TechWise Research asked respondents how satisfied they are with the applications available for HP-UX Integrity. Eighty-five percent (85%) of respondents (not shown in graph) are satisfied with application availability on Integrity. This indicates that even though there are more applications available for HP 9000, most of the applications that are being used by respondents are also available on Integrity servers. According to HP, as of June 2007 there are 3,981 third-party applications available for HP-UX Integrity.

TCU Scenarios Analyzed

Every customer has a unique installation when it comes to the number and type of HP 9000 servers in their HP-UX environment. Furthermore, for every conceivable combination of HP 9000 servers, there are several potential upgrade paths. Some could include a one-for-one exchange where a single HP 9000 server is upgraded to a single Integrity server. Others could involve a consolidation where multiple HP 9000 servers are upgraded to a fewer number of Integrity servers. Server consolidation is addressed in a separate TechWise Research paper entitled *The Benefits of Using HP Integrity Servers to Consolidate HP 9000 Servers*. This paper focuses on the four different one-for-one upgrade scenarios that are described in the chart below. These scenarios were selected to represent systems ranging from entry-level to enterprise-class. The first scenario involves upgrading an entry-level HP 9000 rp4410-4 to an Integrity rx3600. The second and third scenarios involve upgrading midrange HP 9000 rp4440-8 and rp7420-16 servers. The final scenario involves upgrading an enterprise-class HP 9000 rp8420 to an Integrity rx8640. Note that all of the Integrity servers use the dual-core Montecito processor, so that every chip acts like two separate cores. As will be shown later, this can be an important point in determining third-party software support costs.

Configurations of the Four One-for-One Scenarios Used in the TCU Analysis

	Original HP 9000 Server Configuration	Upgraded HP Integrity Server Configuration
#1	HP 9000 rp4410-4 1.0 GHz 2 chips and 4 cores 16 GB RAM and 146 GB storage	HP Integrity rx3600 1.6 GHz 1 chip and 2 cores 16 GB RAM and 146 GB storage
#2	HP 9000 rp4440-8 800 MHz 4 chips and 8 cores 16 GB RAM and 146 GB storage	HP Integrity rx6600 1.6 GHz 2 chips and 4 cores 16 GB RAM and 146 GB storage
#3	HP 9000 rp7420-16 1.1 GHz 8 chips and 16 cores 64 GB RAM and 146 GB storage	HP Integrity rx7640 1.6 GHz 4 chips and 8 cores 64 GB RAM and 146 GB storage
#4	HP 9000 rp8420 1.1 GHz 16 chips and 32 cores 64 GB RAM and 146 GB storage	HP Integrity rx8640 1.6 GHz 8 chips and 16 cores 64 GB RAM and 146 GB storage

The next section of this white paper explains the approach TechWise Research used to develop its TCU model. It includes a discussion of the various factors involved in the upgrade decision and how TechWise addressed them in the analyses. The final part of the white paper includes the actual results of the TCU analyses for the four different upgrade scenarios just described.

The Two Sides of the TCU Equation

There are two sides to the equation TechWise Research developed to quantify the total cost of upgrading an HP 9000 server running HP-UX to an HP Integrity server. These are the upfront costs and ongoing savings associated with the upgrade.

Upfront Costs

- **Integrity Server:** The cost to purchase the Integrity server configured with the desired amount of memory and storage and three years of 24x7 support.
- **Operating System:** The cost to acquire the license for HP-UX on Integrity.
- **Third-Party Software:** The cost to transfer licenses of any third-party application from the HP 9000 server to the HP Integrity server.
- **Installation**: The time and/or money spent installing the new Integrity server.
- **Training:** The time and/or money spent learning how to use the new Integrity server.

All of the preceding factors are one-time costs companies would pay at the beginning of the upgrade process. In addition to these costs, the fully functional HP 9000 that would be replaced has a trade-in value that should be included in the TCU analyses. HP often offers programs to encourage companies to replace their servers. TechWise Research contacted HP directly to receive quotes on the "trade-in" value of the four HP 9000 servers studied in the analyses.

In addition to the trade-in value of the HP 9000, there are several potential sources of ongoing cost savings once the HP-UX Integrity server is up and running in production.

Potential Ongoing Savings

- **Support Contracts:** This is the difference, if any, between the out-of-warranty costs of a support contract on the HP 9000 server versus support on the Integrity server.
- **Management Costs:** This is the difference, if any, in the time and costs spent managing the servers on an ongoing basis.
- **Energy Costs:** This is the difference, if any, in the ongoing power and cooling costs between the HP 9000 server and Integrity server.

The following sections explain our approach to quantifying all of the above costs and benefits.

Up-Front Costs Associated with an Upgrade

As previously stated, TechWise Research obtained current system and service pricing from IDEAS International. The cost to license the HP-UX operating system for an Integrity server can run in the tens of thousands of dollars, depending on the system configuration and type of license. However, for many customers upgrading from HP 9000 to Integrity this cost will be zero. This is because of an HP program that allows a customer that has a support contract for its HP-UX license that entitles them to new versions to trade their HP-UX HP 9000 license in for an equivalent HP-UX Integrity license at no charge. Customers who do not have a support contract with HP for their HP-UX license may purchase an equivalent HP-UX Integrity license at a steep discount. Most HP server customers that TechWise has interviewed in the past 8 years have had a support contract with HP. For this reason, TechWise assigned a zero cost for the HP-UX Integrity license in the TCU analyses.

Companies that are not sure of their HP-UX support status should contact their reseller or HP to clarify their particular situation.

There are over 12,000 third-party applications available for HP Integrity. As previously stated, almost 4,000 of these applications are supported on HP Integrity servers that are running HP-UX 11i. Each software vendor will have their own policy regarding a customer switching from HP 9000 to Integrity. Since every company has a unique set of applications, the only way to get an exact measurement of these costs is for the company (or a third-party) to contact all of their software vendors and obtain the upgrade costs. For this paper, TechWise Research assumed that as long as a customer has a support contract with their respective software vendor, they can transfer their license to HP-UX Integrity at no cost.

Finally, the Integrity is a different platform than the HP 9000. Companies making this transition for the first time can expect to spend some time installing the new Integrity and learning how to use it. One of the goals of the customer survey was to collect information on the time and money spent on installation and training for the Integrity servers. From the 232 respondents, TechWise learned that the average company spent $6,300 on training and installation (including staff time as well as external costs). These costs, which varied depending on the number of Integrity servers installed, were included in the TCU analyses.

Ongoing Savings Resulting from an Upgrade

Support contracts represent one area where companies can save a significant amount of money by upgrading HP 9000 systems to Integrity servers. This is not surprising because "next generation" computing equipment almost always offers higher performance at a lower price than the equipment it replaces. Since service contract costs are typically directly proportional to system price, it stands to reason that service costs for Integrity (next generation) servers would be lower than service costs for comparable HP 9000 systems. How big an issue is this? The annual cost for a hardware and software service contract on an out-of-warranty HP 9000 rp7420-16 with 16 cores is approximately $98,000. The one-time cost to purchase a new Integrity rx7640 with 8 cores, including all software licenses and three years of 24x7 support, is $314,000. **The $98,000 annual savings in service costs alone would pay for this upgrade in just 38 months**. This does not take into account savings from HP's software and hardware trade-in programs. The support cost savings are largely due to the lower cost of the Integrity hardware and the fact that the Integrity server can offer comparable performance with half the number of cores as the HP 9000 server. TechWise Research contacted HP for the annual out-of-warranty support costs for the four HP 9000 systems analyzed in this paper.

One of the big unknowns going into this study was how Integrity servers running HP-UX compare to HP 9000 systems running HP-UX in terms of reliability and management costs. Although reliability is not factored into these TCU analyses from a financial perspective, it is critically important in the upgrade decision. Few IT Managers would wish to upgrade their servers to a less reliable platform. In terms of management, a complete TCU analysis should account for any differences in the time required to manage both types of servers.

TechWise Research collected information about management costs and unplanned downtime hours from the 232 survey respondents. In terms of downtime, respondents indicated how many total hours of unplanned downtime, if any, they experienced in the

past 12 months. **On a per server basis, there is no difference in reliability between HP 9000 and HP Integrity servers**. The HP 9000 servers averaged 1.3 hours of unplanned downtime while the HP Integrity servers averaged 1.1 hours. This works out to 99.985% or better availability. Companies that upgrade their HP 9000 to HP Integrity servers should, on average, see no decrease in system availability.

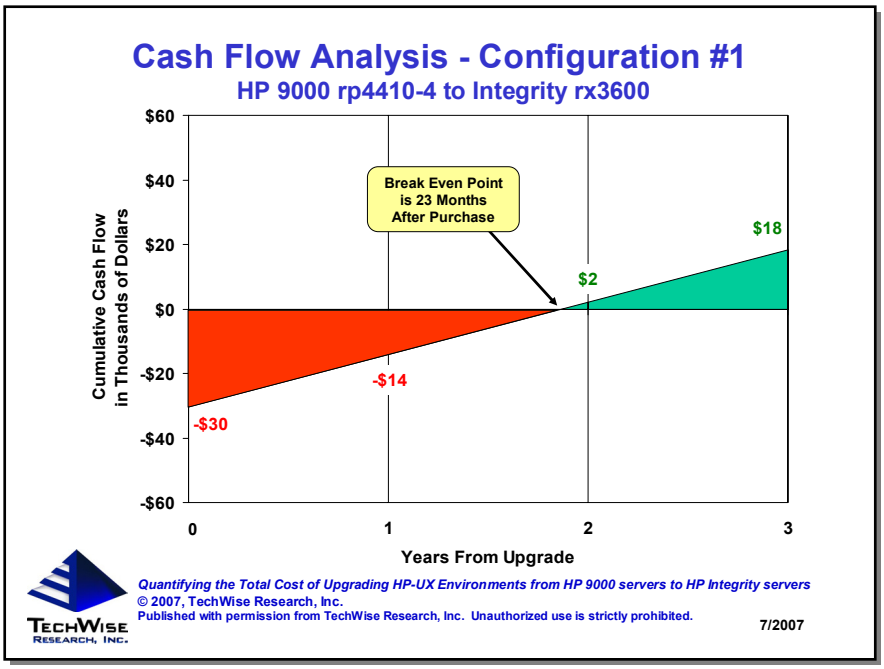
In terms of management costs, **comparing companies with similar numbers of HP 9000 and HP Integrity servers show that there is no difference in the amount of time spent managing these two types of servers on a weekly basis**. This is not too surprising since both servers are running the same operating system.

TechWise Research also included energy costs into its TCU analyses. Thanks to the ever increasing cost of energy, the cost to run a server and cool the server room can no longer be ignored. According to Bart Perkins of Computer World, "in some markets, the electricity bill for a server facility can run four to six times the cost of renting the building space." For these reasons, TechWise Research looked at the differences in power consumption and cooling requirements between HP 9000 and Integrity servers. The table below summarizes the energy and cooling requirements for the HP 9000 and Integrity servers studied in this paper. The analysis shows that in all but one case, the difference in energy use between HP 9000 and HP Integrity servers is relatively small, 11% or less. There is a 35% reduction in energy use between the rx3600 and rp4410. This reduction translates into about $600 in annual energy savings (when applying a rate of $0.093 per kilowatt). Energy costs, therefore, had minimal impact on the TCU analyses for these one-for-one upgrades.

Power and Cooling Requirements Comparison Expressed in Kilowatt Hours

Upgrade Scenario	HP 9000	Integrity	Percent Change
rp4410 - rx3600	2.11 kWh	1.36 kWh	**-35%**
rp4440 - rx6600	2.11	1.99	**-6%**
rp7420 - rx7640	3.93	4.23	**8%**
rp8420 - rx8640	6.94	7.72	**11%**

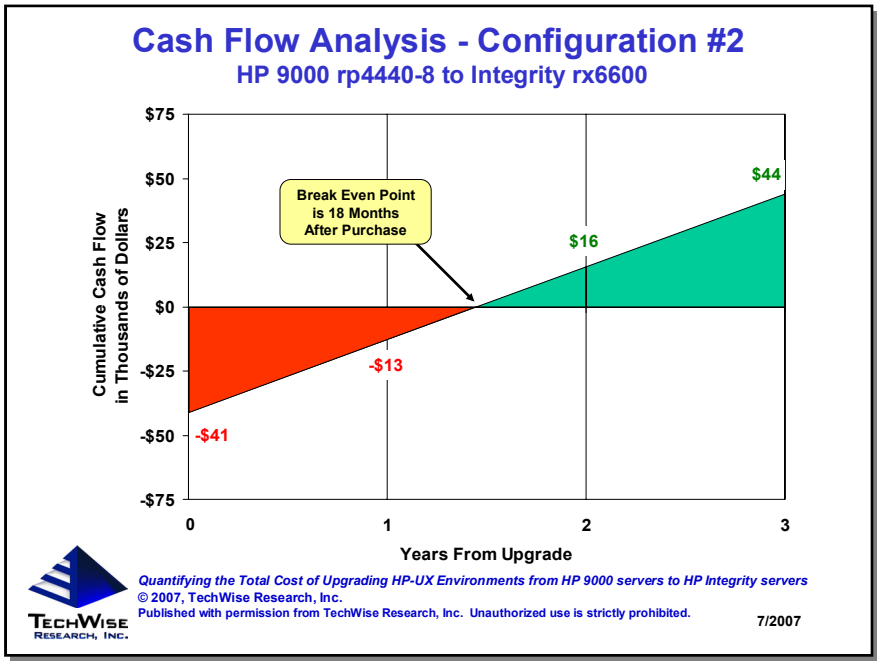
Cash Flow Analysis Configuration #1



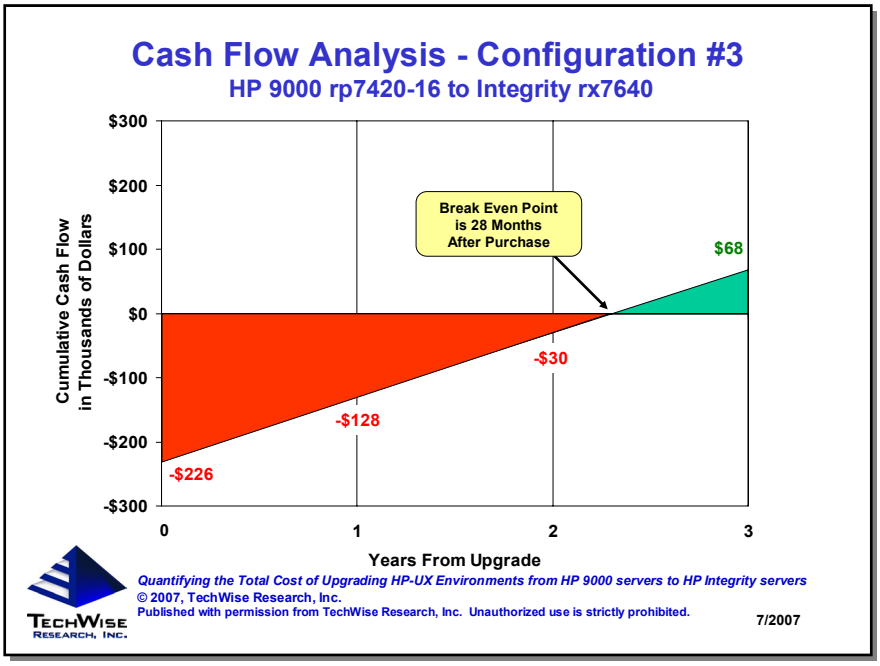
In Scenario #1, an entry-level HP 9000 rp4410-4 is upgraded to an Integrity rx3600. Configured with the same number of processors, this model of Integrity server would offer about twice the performance of the HP 9000 rp4410. In this analysis, the Integrity server was configured with one processor (versus two for the HP 9000). This gives the two servers approximately the same performance. The total start-up costs for this upgrade is $30,000. This figure includes the cost of the Integrity server with three years of hardware and software support, as well as installation and training costs. It also factors in the residual value of the HP 9000 rp4410. Note, for all of these calculations it is assumed that the HP 9000 is traded in at the same time as the Integrity server is purchased. ***Thanks mainly to the reduction in service cost, this upgrade pays for itself in 23 months.*** The chart above shows the cumulative cash flow for the first three years after the upgrade. It shows that at the end of three years, the net savings from this upgrade are $18,000.

Cash Flow Analysis Configuration #2

The financial analysis of the second upgrade is even more compelling, as illustrated in the chart to the right. *Upgrading an HP 9000 rp4440 to an HP Integrity rx6600 pays for itself in just 18 months*! Again, thanks to Integrity's higher performance, the Integrity server could be configured with only two chips and still offer the same performance as the HP 9000. Over three years the total net savings from this upgrade are $44,000. This is almost exactly the cost of the rx6600 server. In other words, by **upgrading the rp4440 to an Integrity rx6600, companies would save enough money over three years to purchase a second rx6600 server!**



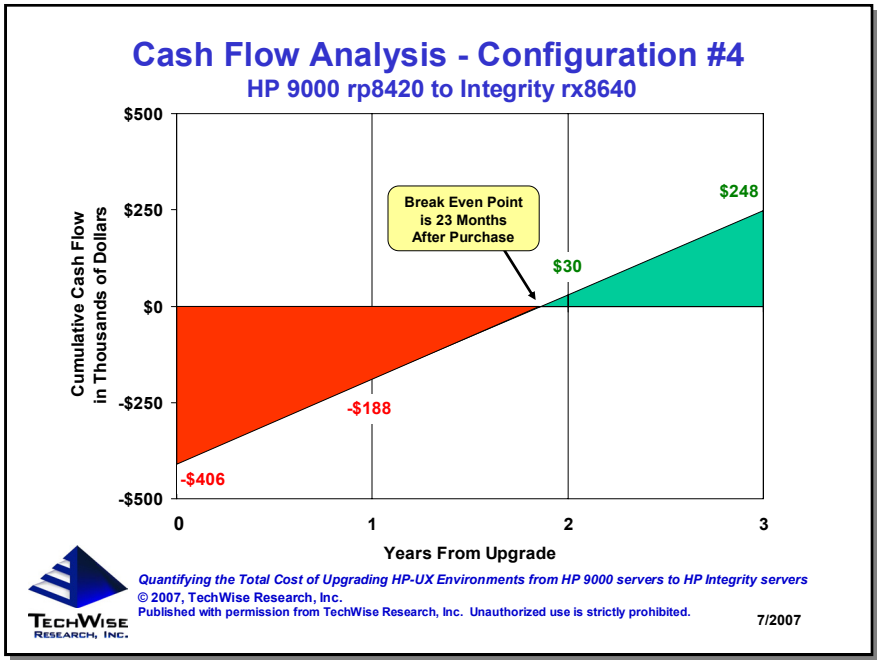
Cash Flow Analysis Configuration #3



The chart to the left summarizes the cash flow analysis for the third upgrade scenario. The rx7640 is a higher-end server. The initial out-of-pocket cost for the server (including installation, training, and three years of support) is $226,000. However, despite this higher acquisition cost, the upgrade pays for itself in 28 months thanks to the savings in service costs. After three years, the upgrade results in a net savings of $68,000. This may seem small given the upfront costs. However, these higher-end systems typically are deployed for far more than just three years. If this analysis were extended to 5 years, the total net savings would likely exceed $250,000 (depending on what HP charges for services in the future).

Cash Flow Analysis Configuration #4

The final scenario involves upgrading an enterprise-class rp8420 server with 16 processors to an rx8640 with 8 processors. The initial cost of this upgrade would be $406,000. However, the savings in support costs are so great that **the upgrade pays for itself 23 months**. Total savings after three years are $248,000. If this analysis were extended to five years, total net savings from the upgrade would likely exceed $650,000 (again, depending on what HP charges for services in the future). These cumulative net savings would be more than enough to purchase a second Integrity rx8640. Clearly there are significant financial benefits to upgrading these higher-end servers.



Oracle Users May Have a More Compelling Reason to Upgrade

As previously mentioned, upgrading to Integrity could also lead to savings on third-party software support contracts. Every software company has a different pricing policy for their support contracts. Oracle is one of the most widely used third-party applications. TechWise Research used Oracle's April 20, 2007 Global Price List, which is posted on its website, to investigate the impact of Oracle support costs on these TCU analyses. The prices listed in Oracle's document are for educational purposes only and are subject to change at any time. The current price for an annual support contract from Oracle that provides support and updates is $8,800 *per processor*. For the purposes of license fees, however, Oracle treats each Integrity *core* as 0.5 of a processor and each PA-RISC *core* as 0.75 of a processor. Because of this, every upgrade can potentially reduce Oracle's annual support costs. How much can companies save in Oracle support costs? The HP 9000 rp4410-4 upgrade reduces the number of licenses by 2 while the HP 9000 rp4440-8, rp7420-16, and rp8420 upgrades reduce the number of licenses by 4, 8, and 16, respectively. **This translates into additional annual savings of $17,600 (rp4410-4), $35,200 (rp4440-8), $70,400 (rp7420-16), and $140,800 (rp8420)**.

Several assumptions went into the above calculations. First, TechWise applied Oracle's list price for service contracts. Some companies with a large number of Oracle licenses may have negotiated lower service costs. Second, TechWise assumed that the excess licenses from the upgrade would not be redeployed elsewhere in the company. Third, the calculations were based on the current information posted on Oracle's website regarding their technical support policies. This policy, dated July 10, 2007, states that "In the event that a subset of licenses on a single order is terminated or if the level of support is reduced, support for the remaining licenses on that license order will be priced at Oracle's list price for support in effect at the time of termination or reduction minus the applicable standard discount..." This policy may be viewed on Oracle's web site at the following URL:

http://www.oracle.com/support/collateral/oracle-technical-support-policies.pdf.

The table to the right shows the potential impact of Oracle support costs on the break-even point for all four of the scenarios studied. **It shows that in many cases the additional savings in annual Oracle support costs cuts the time for the upgrade to break-even in half**. In two scenarios the upgrade pays for itself in less than 12 months. Companies that run Oracle on HP 9000 servers and HP-UX can save tens to hundreds of thousands of dollars a year by upgrading to HP-UX on HP Integrity servers.

Impact of Oracle Support Costs on Break-Even Point of Upgrade

	Upgrade	Original Break-Even	Break-Even After Oracle
#1	HP 9000 rp4410-4 to HP Integrity rx3600	23 months	11 months
#2	HP 9000 rp4440-8 to HP Integrity rx6600	18 months	7 months
#3	HP 9000 rp7420-16 to HP Integrity rx7640	28 months	16 months
#4	HP 9000 rp8420 to HP Integrity rx8640	23 months	13 months

As of July 2007, Oracle charges $8,800 per year per CPU for support.
Oracle treats each Integrity core as 0.5 CPU and each PA-RISC core as 0.75 CPU.

TechWise Research, Inc.

Quantifying the Total Cost of Upgrading HP-UX Environments from HP 9000 servers to HP Integrity servers

7/2007

Conclusion

This study focused on quantifying the costs and benefits associated with upgrading various HP-UX environments from HP 9000 servers to HP Integrity servers. Detailed cash flow analyses were performed on four different upgrade scenarios. A variety of factors were included in the TCU analyses including: the list price of the new Integrity systems, current service pricing for Integrity and HP 9000 systems, start-up costs associated with the installation of the new Integrity system, the residual value of the HP 9000, Oracle support costs, and differences in power consumption.

One key finding from the customer surveys is that **there is no significant difference in reliability or management costs between HP 9000 and HP Integrity servers**. The Integrity hardware platform has the same reliability as HP 9000 and did not require any additional time to manage on a week to week basis.

Another major finding is that **upgrades involving Integrity servers often pay for themselves in less than 2 years**. Companies whose IT budgets are stretched thin will find these upgrades attractive on a financial basis. Even the scenario with the Integrity rx8640, the highest-end Integrity server studied, paid for itself in less than two years . This is amazing given that the rx8640 costs over four hundred thousand dollars. Upgrading HP-UX environments from HP 9000 to HP Integrity often results in substantial savings.

One unexpected benefits was also found. **Companies that use Oracle Server can potentially save tens of thousands of dollars a year in software support costs**. In many cases the additional savings in Oracle support costs cuts the break-even time in half.

In some cases, such as when the HP 9000 servers are still under original warranty or there is a considerable amount of custom code involved, the payback period on the upgrade may not be as favorable as what is described in this paper. Despite these potential drawbacks, for many companies the upgrade will make financial and business sense thanks to the resulting savings in service costs as well as the increased performance from Integrity. Companies that plan to use HP-UX over the long-term should seriously consider upgrading some of their systems to Integrity now. The upgrade often pays for itself in less than 24 months and results in significant annual savings. The ongoing savings from the upgrade may be used to purchase additional hardware or invest in the development of new software applications

TechWise Research is an independent primary market research firm that has conducted hundreds of market research studies in the computer industry. If you have any questions regarding this paper, please contact Chip Levinson at clevinson@TechWise-Research.com.