



MICROSOFT WINDOWS SERVER VS. RED HAT ENTERPRISE LINUX Costs of Acquisition and Support – A Comparison

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PREPARED FOR

Microsoft

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Main Findings

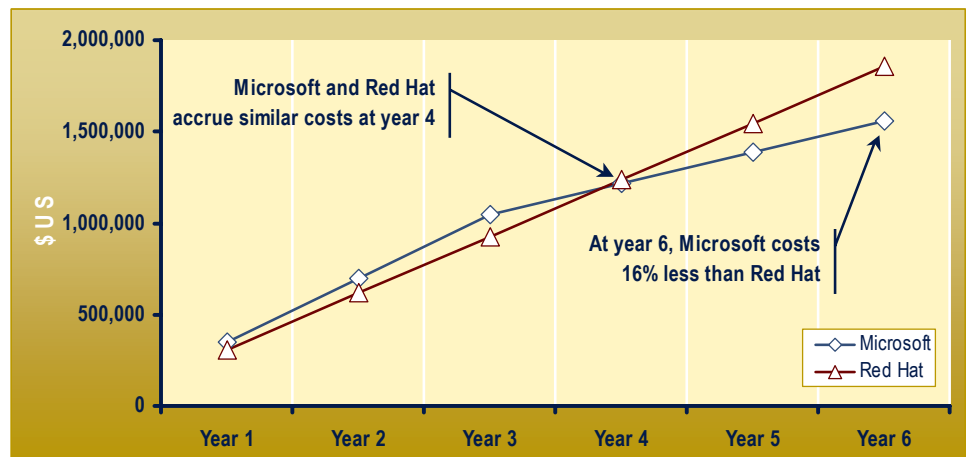
1. Microsoft's Windows Server 2003 enterprise license and support costs are competitive with Red Hat Enterprise Linux.
2. The two companies' different approaches to enterprise licensing and support, and the fact that investments of this magnitude tend to involve longer-term commitments, means that the best pricing comparisons should be based on a period of ownership (three to six years), rather than on just initial acquisition charges.
3. Support is integral to both companies' solutions and Microsoft's separate support and license fee structures, in contrast with Red Hat's combined subscription and support offerings, can give a Microsoft solution a significant pricing advantage over a Red Hat solution.

Chart 1 compares the cumulative operating system license and support charges an enterprise would accrue from running Microsoft Windows Server 2003 versus those it would accrue from running Red Hat Enterprise Linux. The comparison is based on an ownership period of several years, and assumes support is provided by Microsoft or Red Hat, respectively. In this example – which is based on Microsoft's volume pricing discount, distributed payments option, and Software Assurance subscription for free upgrades – Microsoft's pricing tracks to Red Hat's in the first three years of ownership, but is substantially lower than Red Hat's in subsequent years.

CHART 1

Cumulative Software License/ Subscription/ Support Costs

- » Enterprise – 500 servers (5,000 CALs)
- » 24x7 support on 10% of servers
- » Select License Level B



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Executive Summary

Microsoft Corporation commissioned Ideas International (IDEAS) to produce a white paper comparing the software procurement charges and ongoing support costs of Microsoft Windows Server 2003 against Red Hat Enterprise Linux 4 in a large server population (i.e., enterprise) setting.

For this comparison, we modeled a hypothetical enterprise housing 500 servers with mixed support requirements. Ten percent of this enterprise's servers are mission critical and thus require 24x7 software support, while the remaining servers require only business hours support. Given these requirements, we examined how the enterprise's operating system choice – either Windows Server 2003 or Red Hat Enterprise Linux – would affect its bottom line. For both the Microsoft and Red Hat solutions, we calculated the cost to acquire the licenses, and/or maintain subscriptions and support agreements over a six-year period. This white paper reports on the outcomes of our analysis and provides the reader with insight into the key issues of differentiation between the Microsoft and Red Hat offerings.

The following Analysis section of this white paper focuses on three key areas:

- » License and Subscription Issues
- » Support Considerations
- » The Total Solution Viewpoint

The paper concludes with an Appendix that provides the reader with more information about the various assumptions made in creating the pricing model for this analysis.

Analysis

License and Subscription Considerations

Direct price comparisons of individual retail offerings may indicate Red Hat Enterprise Linux 4 is priced lower than Windows Server 2003. However, such simplistic comparisons – covering only the initial acquisition costs – do not always translate to similar outcomes for medium to large organizations, which purchase in greater volumes and commit to a supplier for significantly longer periods than just the first year acquisition.

There are three main issues to consider:

1. Microsoft's Volume Purchasing Options
2. Microsoft's Software Assurance Program
3. Microsoft's Distributed Payments Option

1. Microsoft's Volume Purchasing Options. Microsoft has various volume purchasing programs that offer significantly lower price points than full retail versions of the Windows Server 2003 operating system. To recognize a client's volume commitment to Microsoft, these programs also bundle in other value not available in the retail versions. Red Hat does not have such licensing programs and instead negotiates volume discounts at purchase time. Hence, reliable pricing

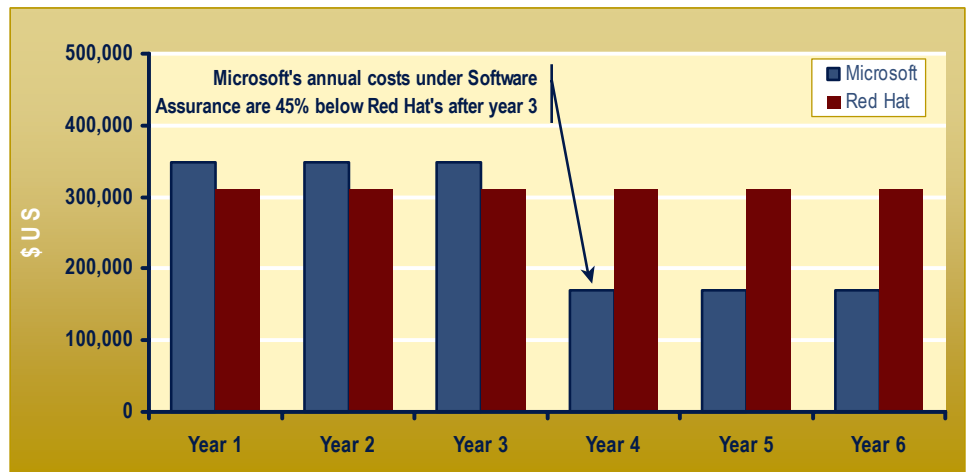
comparisons between Red Hat and Microsoft for large volume situations cannot be made using single unit retail packages.

2. Microsoft's Software Assurance Program. With Microsoft's Software Assurance program, a client pays a one-time license fee to purchase a particular software product, and then receives free upgrades to that software through a Software Assurance subscription. In cumulative terms, subscribing to Software Assurance is substantially cheaper than purchasing a unique license for each upgrade of the software. Chart 2 shows the annual charges for the Microsoft and Red Hat solutions over a six-year period. In the Microsoft model, the one-time license is purchased over the first three years, leaving only the Software Assurance subscription and support charges in subsequent years. Hence, Microsoft's subscription and support charges drop significantly after year three. Conversely, with Red Hat's linear subscription and support model, the combined subscription and support costs are the same in year five as when originally purchased.

CHART 2

Annual Software License/ Subscription/ Support Costs

- » Enterprise – 500 servers (5,000 CALs)
- » 24x7 support on 10% of servers
- » Select License Level B



3. Microsoft's Distributed Payments Option. Microsoft clients have the option to spread charges evenly across an agreement period, which gives a Microsoft solution a price profile similar to that of a Red Hat solution, as shown in Charts 1 and 2. This feature is an important reason why an analysis of charges over time is more important than looking at the upfront costs. While the Red Hat pricing usually reflects a one-year time period, the Microsoft prices can represent a multiyear commitment. An analysis of just the raw prices is misleading when the ability to spread payments across the full agreement term is not taken into account.

The bottom line: While the Red Hat solution may appear to have a lower cost initially, it is wise to consider the costs beyond this initial purchase, as companies tend to commit to a solution for a period of time. The effects of Microsoft's volume purchase pricing for enterprise clients, software subscription option, and distributed payments option means that over time a Microsoft Windows Server 2003 solution can be very price competitive to a Red Hat Enterprise Linux alternative.

Support Considerations

In Red Hat's open source business model, clients do not pay for software licenses; instead, they just pay for Red Hat's maintenance and support of the open source

software. Hence, any pricing comparison with Microsoft, which has a more traditional licensing approach, needs to take into account the cost of support. The two companies address support very differently; the following sections examine these variations in more detail and discuss the factors to consider when assessing the relative merits of the two solutions.

Red Hat Support. Organizations can acquire the free open source Linux software and maintain, support, and implement software updates and patches themselves. However, most commercial organizations would prefer to outsource this function and pay for such a service, especially when the software is going to be used for business-critical applications. Red Hat's charges for Enterprise Linux 4 are therefore associated with subscription and/or support of the operating system, including ongoing software updates and patches. Red Hat offers two levels of service for Red Hat Enterprise Linux: subscription and support. The "subscription" portion allows clients to acquire patches and upgrades to the software during the agreement period. "Support" can be thought of as the problem resolution and "how-to" coverage offered to users via the phone or the web. Red Hat does not officially separate the costs of the two levels of service (subscription and support) and aims to bundle them in the packages it offers the market.

Microsoft Support. Microsoft's support offerings include:

- » *Microsoft Free Support* – Microsoft offers perpetual licenses and free updates (such as minor patches) to existing versions, regardless of whether or not the client has a current Software Assurance subscription. What clients cannot get through this service is access to use new major releases. With Red Hat support, clients can continue to use the Red Hat Enterprise Linux license at the expiration of the initial agreement, but they are not entitled to any updates (major or even minor patches) to existing versions of the software.
- » *Microsoft Bundled Support* – For clients on Volume Licensing agreements with Software Assurance, a level of problem resolution support is bundled with the Windows Server 2003 operating system. Clients on the Select License (which this models) are entitled to unlimited web-based problem support per server for Standard Editions of the operating system and unlimited business hours telephone support for Enterprise Editions of Windows Server 2003.
- » *Microsoft Premium Support* – In addition to the offerings above, Microsoft offers various levels of optional support services. These cover "how-to" style support, as well as after hours support for those operating systems not covered under the Bundled Support offering. Microsoft has two such support programs aimed at commercial enterprises: Essential and Premier Support.

Unlimited vs. Per-Incident Support. A significant area of differentiation between the two support philosophies is in the type of support offered. Red Hat promotes an unlimited access model, whereas Microsoft structures its charges around a per-incident model for its premium offerings. The Red Hat unlimited access model is very attractive as it provides a level of budget certainty, no matter what problems arise. However, the unlimited access is per operating system deployed; hence, support must be purchased for each operating system in use for which support is required.

The Microsoft approach is to provide a combination of free and bundled unlimited support (in the case of Select License clients with Software Assurance) and then offer optional premium services to augment these. These premium offerings are per-incident, or per-hour based, and thus may have a degree of budget uncertainty if problems arise that consume the budgeted amount in a given period. However, it is worth noting that this support is portable across multiple servers in an organization, which means clients can efficiently use this support.

The bottom line: In a large server deployment, support for all servers as per the Red Hat model offers budget certainty, but at a potential price premium.

24x7 Coverage. Chart 1 assumes that only the key business-critical servers (10%, or 50, of the 500 servers) are being covered by Red Hat 24x7 support. The remaining servers are priced with business hours support. Microsoft’s pricing includes unlimited telephone problem support during business hours for the business-critical servers running Microsoft Windows Server 2003 Enterprise Edition (10%, or 50, of the 500 servers). This support is augmented by an Essential Support contract to provide after hours and additional support to not only the business critical servers, but any other server in the organization as well.

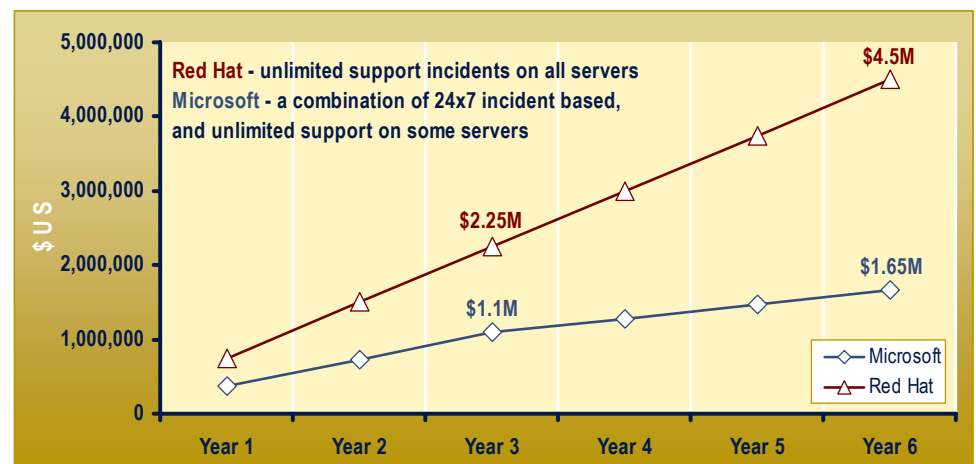
But what if a client wants 24x7 coverage for all servers in the Enterprise?

Red Hat only provides 24x7 support for its Enterprise Linux AS version of the operating system. This analysis only includes the AS operating system on 10% of the servers (i.e., the mission-critical servers); to get all servers covered at the 24x7 level, a Red Hat client would need to purchase the more expensive AS software for the remaining 90% of its servers. Conversely, a Microsoft client could consider purchasing a higher level of support – in this case Premier Support.

CHART 3

Cumulative Software License/ Subscription/ Support Costs

- » Enterprise – 500 servers (5,000 CALs)
- » 24x7 support on *all* servers
- » Select License Level B



The effect of these changes can be seen in Chart 3. The Red Hat solution is significantly higher priced as a result. It is true that the Red Hat solution offers unlimited 24x7 support on all servers in the organization, whereas the Microsoft solution with Premier support includes unlimited 24x7 coverage only on the Enterprise Edition versions of the Windows Server 2003 operating system (plus a fixed number of additional incidents and hours to provide some extra coverage).

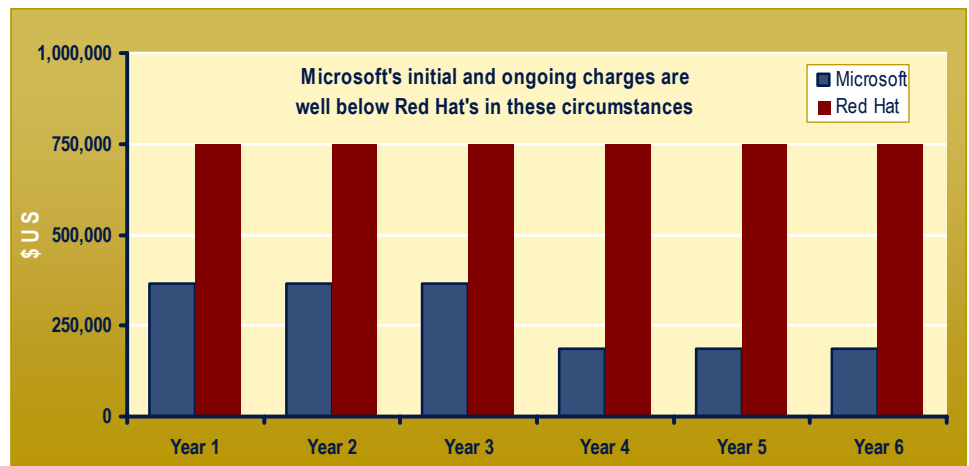
However, the gap between the two solutions is significant, and even if the Microsoft support cost was to double because of the need to purchase additional unplanned support, the Microsoft solution would still be less expensive than the Red Hat solution. And of course, the Microsoft approach allows clients to purchase support as needed, whereas the Red Hat approach requires an upfront investment at the beginning of the year – regardless of whether or not the support is actually used on all of the servers during the course of the year.

Red Hat does not require a client to purchase 24x7 support on all servers. Clients can purchase support based on needs and in-house expertise and thus can have a lower vendor support bill as a result; although, it should be noted that the cost of self-support would then need to be considered. However, this example illustrates how the different support philosophies of the two companies can have a big bearing on the investment an organization may have to make, and in some cases, the support charges for Red Hat can be significantly higher than those of Microsoft.

CHART 4

Annual Software License/ Subscription/ Support Costs

- » Enterprise – 500 servers (5,000 CALs)
- » 24x7 support on *all* servers
- » Select License Level B



The Total Solution Viewpoint

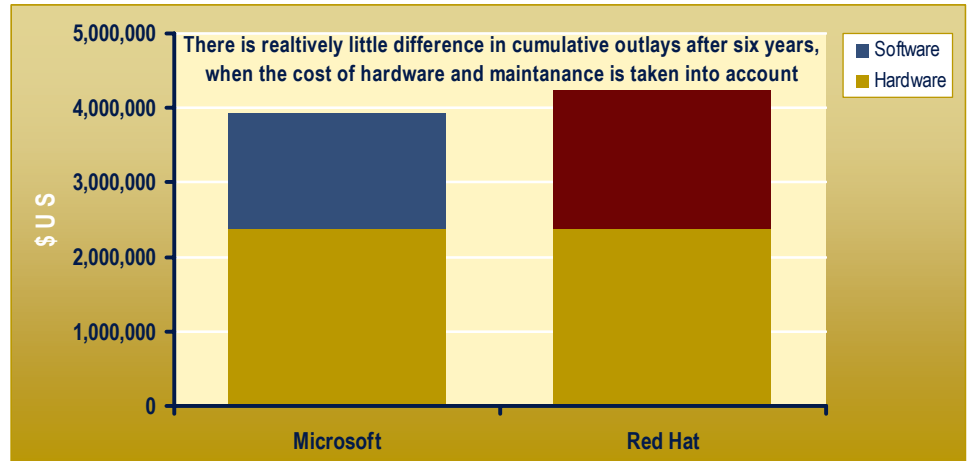
Hardware costs are a significant outlay and are arguably fixed, no matter which software solution is used. Therefore, when a client looks at the variations in cost between Windows versus Red Hat Linux, any differences in the software investment as a percentage of the total outlay can make such differences relatively minor in the overall scheme of things. This final analysis section seeks to put the Red Hat Enterprise Linux 4 versus Microsoft Windows Server 2003 pricing debate into perspective from a total solution (hardware and software) vantage point.

Chart 5, which is based on 10% of servers having 24x7 coverage, adds to the six-year cumulative software and support charges, the cost to acquire and maintain the hardware that runs the operating systems over that same period. This view shows that substantial common costs are incurred with the hardware platforms. The assumption here is that the same hardware can be used to run either the Microsoft Windows Server 2003 or the Red Hat Enterprise 4 Linux solution.

CHART 5

Cumulative Cost of Hardware and Software Acquisition and Six Years of Software and Hardware Support

- » Enterprise – 500 servers (5,000 CALs)
- » 24x7 support on 10% of servers
- » Select License Level B



It is easy to get caught up in the detail of comparing the costs of the software solution and forget about other significant outlays that are part of the total solution (and relatively fixed no matter which option is ultimately chosen). When these costs are included, any overall differences between one solution and another are minimized, and it is likely that if cost is not the overriding differentiation, consideration will move on to the other benefits of one solution over another.

In Review

Major Findings

1. Microsoft's Windows Server 2003 Enterprise license and support costs are competitive with Red Hat Enterprise Linux.
2. The two companies' different approaches to enterprise licensing and support, and the fact that investments of this magnitude tend to involve longer-term commitments, means that the best pricing comparisons should be based on a period of ownership (three to six years), rather than on just initial acquisition charges.
3. Support is integral to both companies' solutions and Microsoft's separate support and license fee structures, which contrast with Red Hat's combined subscription and support offerings, can give a Microsoft solution a significant pricing advantage over a Red Hat solution.

Other Findings

Microsoft's volume purchase pricing for large organizations offers a more competitive pricing perspective of Microsoft vs. Red Hat than retail pricing comparisons may indicate.

The ability to distribute Microsoft payments across several years gives Microsoft a price profile similar to that of Red Hat.

In year four and beyond, if a client subscribes to the Microsoft Software Assurance option, a Microsoft solution can offer substantially lower costs compared to Red Hat in an enterprise scenario, as demonstrated by the example in this white paper.

Microsoft's separate support and license fee structures, which contrast with Red Hat's combined subscription and support offerings, can give Microsoft a distinct pricing advantage in some cases, particularly if a client is looking for all servers to be covered by 24x7 support.

The differences in costs between Microsoft and Red Hat are even less when the cost of hardware (and thus the entire solution) is taken into account. This may neutralize price as a key factor when choosing between a Microsoft and a Red Hat solution and raise the importance of other non-monetary issues as key decision criteria.

Appendix – Modeling Assumptions

General

- » The organization modeled in this study is not based on any actual company. Instead, it is a hypothetical enterprise representative of organizations of this size, and for which issues and the outcomes will be relevant to other similar organizations.
- » It is assumed that the organization is based in the USA.
- » Because of the potential for significant variation in costs, outcomes in this paper should be used as a guide only, rather than proof that one approach is less costly, or better, than another.
- » The paper analyzes tangible costs – such as the cost to acquire and maintain software licenses, subscriptions, and hardware – during the six-year period modeled. It does not attempt to factor in other cost of ownership issues, such as personnel, training, security, or other less tangible costs associated with ownership of a given product.
- » The six-year period was chosen because it allows readers to see not only the effect of the upfront costs, but also the impact of owning and supporting either solution over time.
- » In making forward-looking cost projections, no account was made for inflation and the time cost of money. For the purposes of illustrating the points in this paper, it was assumed that current costs remain static for all products over the modeled six-year period.

Operating System Licensing and Subscription

- » The enterprise being modeled assumes a mixture of Standard Edition (SE) and Enterprise Edition (EE) licenses for Microsoft Windows Server 2003 and a mixture of Red Hat Enterprise Linux ES and AS Editions. Ten percent of the servers in the organization are assumed to be running business-critical applications, and thus use either the Microsoft Enterprise Edition of Windows Server or the AS Premium version of Red Hat Enterprise Linux. The remaining 90% are assumed to be running Microsoft Windows Server Standard Edition, or Red Hat Enterprise Linux ES Standard.
- » This is a system (hardware, operating systems, and related support) comparison only. No attempt was made to model layered software and middleware that would be running on these systems in a real-life situation.

- » Microsoft pricing is based on its Select Level B Volume Licensing scheme. The Microsoft Select License 6.0 software volume-licensing program is designed for corporate, government, and academic clients with 250 or more desktops with mixed product or purchasing requirements. There are four discount levels – A, B, C, and D – which offer greater discounts for higher levels of purchase commitment, with Level D being the highest discount level.
- » The analysis takes into account the effect of Client Access Licenses (CALs). Microsoft licenses its Windows Server 2003 operating system in two stages, with a base operating system license combined with CALs, in contrast to Red Hat, which charges the same for its operating system regardless of the number of users accessing the system. CALs, therefore, are a variable cost for a Microsoft solution for which the cost will be dependent on the user population.
- » Operating system CALs are transferable between systems in an enterprise. The assumption for this model is that the enterprise has 500 servers with 5,000 users accessing these systems and that users may be accessing more than one server. The organization is assumed to be using User CALs; hence, 5,000 CALs – one for each employee – are required and are included in the cost calculations.
- » As the analysis does not take into account layered or application software, no application CALs for layered software, such as databases or Exchange, are modeled in this analysis.

Pricing

- » The paper uses Microsoft's Estimated Retail Prices (ERP). IDEAS independently verified this pricing by way of a major US-based Microsoft reseller. No further discounts were applied to these already price-book discounted volume license values for the Microsoft offering.
- » Red Hat pricing does not follow a formal volume licensing approach. Instead, it uses retail pricing with per-deal volume discounts. In order to allow for a fair price comparison, the paper uses Red Hat retail pricing in conjunction with an estimated discount to recognize the volume purchase, which assumes all 500 licenses were procured as part of one deal. The effective solution discount used for this report is an estimate of 36%. This percentage was based on research that showed volume purchases of this quantity attracted discounts near 30% to 40%. This discount is only an estimate and is not endorsed by Red Hat. Actual discounts may vary from this level for individual sales situations.
- » All prices are in US dollars before tax.

Support

- » Companies that are truly self-sufficient in supporting their operating systems could pay significantly lower vendor support charges than featured in this report. However, it should be noted that these "self-sufficient" organizations would bear the cost of their own support efforts. The model for this report assumes a commercial enterprise that is looking to have some form of vendor support on all operating systems deployed within its organization.
- » Support can be sourced from other Red Hat support partners. However, this variable is not part of the scope of this white paper, so it is not covered in the

research and analysis. This paper assumes that Red Hat and Microsoft provide all respective operating system support.

- » The business critical servers (10%) are assumed to require 24x7 support. For Red Hat, Enterprise Linux AS Premium is used for these servers, which includes 24x7 support. All other servers in the enterprise are configured with Enterprise Linux AS Standard, which provides a level of same day software support.
- » For the all-24x7 server scenario, all Red Hat servers are configured with Enterprise Linux AS Premium because Red Hat does not offer an Enterprise Linux ES Premium bundle. To get 24x7 support for Red Hat, a client must purchase Enterprise Linux AS Premium.
- » It is assumed that the enterprise uses the free and bundled support available to Select License clients with Software Assurance, and that it augments this support with optional premium support options.
- » For the standard comparison, which requires 24x7 support only on the business-critical servers (10%), Essential Plan D is configured for each of the six years modeled.
- » For the all-24x7 server scenario, the Premier Support plan is used in addition to the bundled unlimited telephone problem support.
- » Clients with a Microsoft Select License with Software Assurance, who purchase Premier Support, will have the problem support for any Windows Server 2003 Enterprise Editions upgraded to 24x7 coverage. This support is included in the all-server 24x7 views featured in this white paper.
- » Both the Essential and Premier support offerings are per-company plans. Support is not linked to any set of servers; it can be used on any system in the organization covered by the Select License Agreement.

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Server Hardware

- » Hardware procurement and support costs are also modeled in Chart 5.
- » The chart assumes that the same hardware is used for the Linux and Microsoft solutions.
- » The server hardware is x86-based. A combination of two- and four-processor systems are deployed with memory and disk specifications mimicking those of typical sales configurations.
- » Each server type uses an acquisition cost from IDEAS's Price Benchmarking Service that is the average list price for competitive servers from IBM, Dell, and HP.
- » In addition, the average hardware warranty upgrade costs (to provide same day or 24x7 hardware coverage during the three-year warranty period) and three additional years of hardware support are also factored in.
- » Finally, these list prices reflect a 40% adjustment, which was made to model a likely street price for this hardware. This discount is only an estimate and is not endorsed by any of the computer companies. Per-deal discounts may vary based on individual circumstances.