



## **Driving Lower TCO and Rapid ROI through Unix Migrations** IT Decision-Maker Perspectives

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## ■ Summary Findings

Mercer Management Consulting, a global strategy consultancy, was engaged by Microsoft to conduct primary research with 30 global senior IT decision-makers representing enterprises that have recently migrated servers across or (more often) away from Unix platforms. Customers with Unix installations often ask for guidance about how to think about platform migration decisions. This study was commissioned to provide IT executives with insight on how other organizations approach these decisions.

The objective of this research was to understand why organizations choose to migrate away from Unix, how alternative platforms are selected, and what value companies have generated by migrating from Unix to Windows, Linux or other flavors of Unix. Key findings from Mercer's research with IT decision makers include the following:

***IT Executives Continue to Seek Opportunities to Migrate Servers from Unix.*** The ongoing trend of migrating servers away from Unix shows no signs of abating. In fact, many IT decision makers, analysts and systems integrators expect the pace of migration away from Unix platforms to increase for four reasons:

- Unix vendors continue to end support for older Unix versions and have begun to shift to new chip architectures, providing new reasons for IT decision makers to consider migrating
- At the same time, analysts note that Unix no longer offers a compelling performance advantage, opening up much larger incentives to migrate to Windows or Linux
- Unix customers report that it is often just as easy to migrate to a new platform (e.g. Windows or Linux) as it is to upgrade to new versions of Unix
- Given the robustness of available migration tools, IT managers report that migrations are often easier to implement than originally expected

### Key Findings

- Migrating from Unix remains a key issue for IT executives seeking to lower TCO and drive rapid ROI
- Windows is the preferred choice when IT organizations migrate Unix servers as part of transformational change
- Linux traction has come primarily from more discrete, less financially scrutinized, Unix migrations
- Platform costs represent a small portion of Unix migration costs, regardless of workload or type of migration

***Windows is the Preferred Choice When IT Organizations Migrate Servers as Part of Transformational Change.*** This study found that when organizations plan migrations as part of a focused effort to improve key business processes, deploy critical applications or restructure the IT architecture, Windows is most often the preferred platform. In part, the preference for Windows is driven by the detailed financial analysis that organizations tend to conduct as part of these transformational projects and the greater likelihood in these situations to solicit advice from application providers, systems vendors and IT consultants. IT executives who went through such robust cost analyses as part of a Unix migration pointed to a few common reasons for selecting Windows:

- Low Total Cost of Ownership (vs. both Unix and Linux) and rapid Return on Investment, even after one-time migration costs
- Strong application vendor support and resource commitment
- Readily available and highly competitive services resources (both internal and third party)
- Strong support infrastructure

***Linux Has Gained Traction Primarily When Unix Migration Decisions are Based on Less Financially Rigorous Analysis.*** Many IT executives at companies that migrated from Unix to Linux admitted, when interviewed for this study, that the decisions to move from Unix to Linux (rather than Windows) often are based on intuitive expectations of savings and preconceived notions about the ease of migrating specific workloads to Linux. These more discrete, less financially-screened, projects account for the bulk of Unix-to-Linux migrations to date. Ironically, study participants that have conducted post-mortem financial analysis of these decisions reported that server OS licensing and support costs account for less than 5% of total migration costs. Furthermore, those that conducted head-to-head comparisons on Unix migrations found little or no total cost differences between migrating to Windows or to Linux.

## ■ A Note on Mercer's Methodology

Mercer randomly recruited the study participants from Enterprise IT decision-maker panels and screened participants only on decision-making authority and to ensure a range of experiences, including migrations from Unix to Windows, Linux and other flavors of Unix. All of the study participants were promised anonymity and none were aware that this research was being conducted on behalf of Microsoft. In all, over 30 migration decision-makers in European and North American enterprises participated in the Mercer study, providing perspectives from all major industry verticals.

Microsoft commissioned this research with the belief that IT decision makers continue to find compelling reasons to migrate key server workloads from Unix to Windows. However, Mercer had complete autonomy over the research, data analysis, and the results reported in this paper. The findings presented here are Mercer's, based exclusively on data provided by migration decision-makers and gathered from interviews that Mercer conducted with industry analysts, systems integrators, and server vendors. Sources are noted where third-party data is used to corroborate these findings.

## ■ Drivers of the Unix Migration Trend

Organizations have been migrating servers away from proprietary versions of Unix for a number of years. Interviews with industry analysts consistently suggest that the rate of these migrations has increased as Unix vendors end support for older versions and shift to new architectures. Even more importantly, both customers and experts point out that the performance available on Windows and Linux has reached parity with Unix. These trends led one industry analyst interviewed for this study to note, *"The whole Unix installed base will face migration. Today, there are fewer tasks and workloads that you can do with Unix that you cannot do with Windows or Linux. Over the next few years, the RISC market will be increasingly decimated by the x86 market."*

In addition, IT organizations have benefited from the experiences of their peers and from trial migrations in their own environments. Many of the IT executives interviewed for this study noted that, given the quality of tools available today, Unix migrations are often easier and faster to implement than anticipated, bringing even more rapid return on investment than originally forecasted. An IT executive at a global bank stated, *"We've done a lot of Unix migrations and our processes have become very standardized. Most of the late 1990s challenges of migrating from Unix to other platforms have been solved. In fact, our recent upgrade from smaller Sun machines to the larger Sun 25K series was more labor-intensive than most of our migrations to new platforms."*

Historically, industry observers have considered Linux as the primary beneficiary of this trend away from Unix.<sup>1</sup> In part, this transition has been driven by the strategies of the Unix vendors themselves, who have positioned Linux as an alternative for those organizations looking to move away from Unix solutions. While Linux has gained share against Unix<sup>2</sup> over the last 18 months Linux growth has slowed,<sup>3</sup> while the trend toward Unix migration continues steadily. As the resulting math would suggest, many organizations are choosing to migrate their Unix servers to Windows.

In fact, IDC reports that Windows is the leading platform for Unix migration overall,<sup>4</sup> one of the factors contributing to the recent announcement from IDC that in the fourth quarter of 2005, Windows server sales surpassed Unix servers for the first time and maintained a greater than 3x share margin over Linux servers.<sup>5</sup>

This study found that both Windows and Linux have benefited from the desire to migrate servers away from Unix. However, this study also found that substantial differences exist in the way that migration decisions are made and migration projects measured across companies and project types. The following two sections outline how IT decision makers tend to approach two different types of Unix Migration: “Transformational” (or more strategic) migrations and “Discrete” (or more tactical) migrations.

## ■ Transformational Migrations: Windows is the Preferred Choice

Many of the Unix migrations evaluated in this study occurred as part of a focused effort to improve key business processes or restructure the IT architecture, what this study refers to as “transformational migrations.” These migrations often involved deploying a new mission-critical business application. Because of the importance of these projects and the direct business oversight that is often involved, these projects tended to involve a high degree of planning and rely on advice from systems integrators, IT consultants and other IT vendors. In addition, organizations in this study almost always conducted some form of financial analysis of the platform options under review, whether estimating Return on Investment (ROI) from the project, Total Cost of Ownership (TCO) of the different platforms, or both.

While some IT organizations in this study decided to stay with a version of Unix to protect existing investments, most study participants noted that Windows was often the preferred platform choice for transformational migrations. Study participants cited four primary reasons:

- Lower TCO for Windows and rapid ROI on Unix-to-Windows migrations
- Strong application vendor support for Windows
- Readily available system management and development resources (both internal and third party) and low training requirements given familiarity with the Windows platform
- Strong support infrastructure from a range of service providers

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<sup>1</sup> See for example, Brad Day and Frank E. Gilbert, “Firms Plan to Maintain Windows, Add Linux OS,” June 18, 2004, Forrester, which noted that “Firms are beginning a slow migration from Unix to Linux.”

<sup>2</sup> Al Gillen and Dan Kusnetzky, “Worldwide Client and Server Operating Environments 2005-2009 Forecast and Analysis: Modest Growth Ahead,” December, 2005, IDC.

<sup>3</sup> See, for example, Drew Brousseau, “Linux is Losing Momentum,” June 13, 2005, SG Cowen & Co.

<sup>4</sup> Matthew Eastwood, “Understanding Unix Migration: A Demand-Side View,” January, 2006, IDC, which reported that Windows garnered 45% of the 530,000 Unix migrations in 2005, while Linux captured 37%, 16% went to other flavors of Unix and 2% went to other operating systems (presumably Novell or proprietary vendor systems).

<sup>5</sup> IDC Press Release, “Worldwide Server Market Slows in Fourth Quarter but Grows to \$51.3 Billion in 2005, Highest Revenue in 5 Years, According to IDC,” February 22, 2006.

Many participants who conducted detailed TCO analysis said they were surprised at the attractive performance of Windows vs. Linux. One European telecom company's experience with a transformational migration was typical. As the head of IT architecture described, *"Our CIO wanted to lower IT costs by moving a key SAP application from the back-end and integrating it into a front-end web server. He originally wanted to stay with HP-UX but I convinced him to look at Windows. When we did the analysis, we found that running HP servers on Windows was by far the lowest total cost solution – even vs. Linux. - and the migration to Windows was fully supported by SAP."*

## ■ Discrete Migrations: Reliance on Server Administrator Opinions More Common than Financial Rigor

Smaller projects, where the IT organization migrates a discrete set of servers without incurring broader organizational change, drive a significant amount of the Unix migration volume. These types of Unix migration projects are referred to in this study as "discrete migrations." This study found that for these migrations, even in organizations that have conducted transformational migration projects in other parts of the business, the platform decision is often based on intuitive expectations of savings and preconceived notions about the ease of migrating specific workloads, rather than the rigorous financial analysis that is common in transformational projects. These more discrete projects account for the bulk of Unix-to-Linux migrations observed in this study.

Many of the senior IT executives interviewed for this study indicated that they are working to bring more rigorous analysis into these tactical migration decisions. Today, however, these decisions are often influenced more by server administrator skill-sets and perceptions of which operating system will cause the lowest organizational impact, rather than on which platform would provide the greatest overall benefit to the organization.

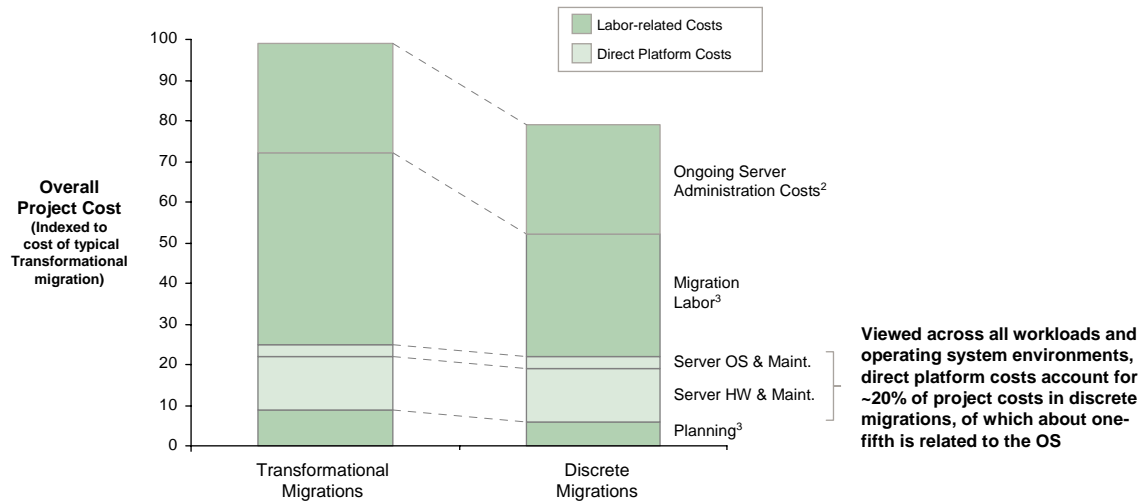
Study participants that have conducted operational financial analysis find that:

- Migrating away from Unix often saves more money and requires fewer resources than originally anticipated
- There is little or no total cost difference between migrations to Windows and to Linux
- Operating system licensing and support costs account for a small portion of total migration project costs

Study participants further noted that Windows migrations are often accomplished with existing staff. As an IT Director at a US college explained, *"At the time of the [Unix to Windows] migration, our IT shop didn't support Windows, so there was some concern when we made the decision. But we put our people through a training course that our VAR ran, and we've had no problems with the transition."*

The chart on the next page shows overall migration project costs for all of the migration projects analyzed in the study. Discrete migration projects are less costly on a per-server basis than transformational migrations because of the lower amount of planning and migration labor. More importantly, however, this study found that software operating system license and maintenance costs account for less than 5% of the total, regardless of platform selected or workload migrated. Overall, direct platform costs (server hardware and OS) account for approximately 20% of the total cost of discrete migrations, with the remainder comprised of migration and other labor costs.

Cost Distribution for "Typical" Transformational and Discrete Migration Project<sup>1</sup>



Source: Mercer Migration Decision-Maker Interviews, February-March 2006.

<sup>1</sup> Data weighted across workloads and platforms, based on a four-server migration with two-processor servers and 4GB of memory, ~70 FTE days of migration labor per server, and four years of hardware maintenance, software maintenance, and server administration costs.

<sup>2</sup> Excludes costs for managing the application, database and storage environment.

<sup>3</sup> External labor composes 40% of Transformational project labor costs and 20% of Discrete project labor costs.

Nonetheless, the study did find some migration decision-makers whose actions ignore, or even contradict, these findings. For instance, one IT manager suggested, *"You don't have to do an ROI analysis to understand it makes sense to switch to a platform [Linux] that is a factor of 3 or 4 cheaper."* This narrow platform-acquisition-cost-only view contradicts the approach that many senior IT executives are increasingly taking of basing platform decisions on the broader project ROI and TCO. The view of one IT executive better represents the findings of this study, *"We looked at Linux for our Unix database migration, but found that Windows and Linux provided similar costs and Windows was stronger on the other key decision factors."*

## ■ Conclusion

This study found that there are strong reasons for IT organizations to continue migrating servers away from proprietary UNIX platforms. Today, both Windows and Linux benefit from this trend but for different reasons. Windows is most often the preferred choice when organizations migrate away from Unix as part of a broader strategic or transformational change, while Linux migration volume today is largely being driven by more discrete projects where less quantitative decision rules are used. Mercer believes that as senior IT executives continue to push for more financial accountability in IT project decision-making, the rate of Unix-to-Windows migrations will likely continue to increase.



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