

EXECUTIVE SUMMARY

The ROI of Windows and Linux Server Consolidation on IBM eServer iSeries: Analysis and Case Studies of Small and Medium-Sized Businesses

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Randy Perry Jean S. Bozman
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OVERVIEW

The ability of the IBM eServer iSeries platform to support multiple operating system environments on a single server has made it an attractive consolidation platform for organizations that wish to lower their total costs. Consolidating the workloads onto a single iSeries platform lowers customers' total cost of ownership (TCO) and improves the overall manageability of the multiple computing environments that exist at many customer sites. This approach lowers costs, frees system administrators to work on higher-level tasks, and improves customers' return on investment (ROI).

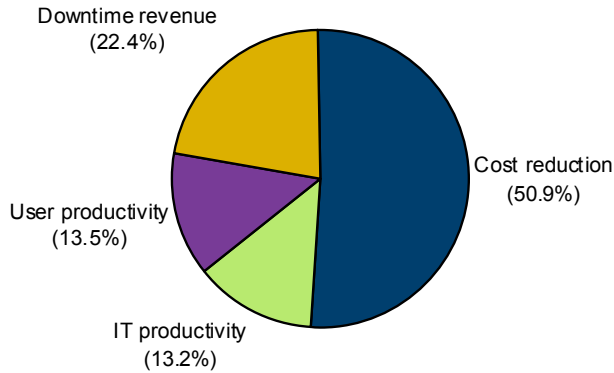
This IDC ROI study looks at customers' ROI. Specifically, IDC studied six companies in the United States, Europe, and Asia/Pacific that had deployed iSeries servers running IBM OS/400 as workload-consolidation platforms. These iSeries servers gathered workloads from many, smaller x86 servers and supported these workloads by running Microsoft Windows on integrated Intel-based technology and by running Linux in iSeries logical partitions (LPARs). When redeployed on the iSeries platform, these Windows workloads and Linux workloads could be more effectively and efficiently managed by IT — leading to considerable ROI savings. Importantly, much of the savings came in the form of actual cost reduction, as shown in Figure 1.

Note: This Executive Summary shows the key findings of an IDC ROI study; a full report about the results of this ROI study, including a detailed IDC Methodology section, is available from IDC.



FIGURE 1

THREE-YEAR SAVINGS (PER 100 USERS)



n = \$542,728

Source: IDC, 2003

KEY FINDINGS OF THIS STUDY

This IDC ROI study examined six enterprises (four manufacturing companies, one hospitality company, and one services company) that had deployed iSeries server platforms as part of their strategy to consolidate their servers. All of the sites that deployed the iSeries servers were small and medium-sized business units, which means that they had fewer than 1,000 employees at the site. These iSeries servers ran a mix of workloads. Two of the IT respondents had already deployed mixed computing environments in which all three operating environments — IBM OS/400, Microsoft Windows, and Linux — were present.

As Table 1 shows, the cost savings delivered by deploying iSeries servers in workload-consolidation environments are dramatic, especially when compared with operating similar Linux workloads and Windows workloads on distributed x86 servers. Specifically, the key findings include the following points:

- ☒ IDC found a three-year ROI of 213.9% using averages of results found across all six iSeries sites.
- ☒ Consolidation on iSeries servers enables these organizations to continue to expand the automation of their businesses by integrating the Windows and Linux computing environments.
- ☒ The investment in the iSeries platform began to pay off relatively quickly, with a payback period of 261 days — slightly less than nine months.
- ☒ The iSeries implementations resulted in total three-year savings of \$542,728 per 100 users to the organizations that were interviewed in this IDC study. Average annual savings are \$183,716.

- ☒ Significant savings are realized through productivity improvements and a decrease in lost revenue, both associated with higher availability. Compared with x86 server environments running Windows and Linux, the iSeries solutions, including those that leveraged IBM eServer xSeries technology and those that ran Linux on the iSeries logical partitions, reduced the combined downtime associated with Windows and Linux servers by more than 90%. (Please refer to Table 2 for more details.)
- ☒ The xSeries Intel-based technology that was integrated into the iSeries server platform included the Integrated xSeries Server (IXS) boards, which are inside the iSeries cabinet, and the Integrated xSeries Adapter (IXA) cards, which link with outboard xSeries systems that are located near the iSeries server.
- ☒ Downtime was significantly reduced through the iSeries deployments. Hours per month due to downtime were reduced from 8.2 hours to 0.8 hours, while incidents of downtime per month were reduced from 5.8 incidents to 0.4 incidents, following iSeries deployments at the user sites. The impact of this reduction in downtime can be seen in Figure 1, which shows that reduced downtime at the iSeries sites contributed 22.4% of the total \$542,728 in savings (per 100 users) that was realized over a three-year period.

TABLE 1

THREE-YEAR ROI FOR SERVER CONSOLIDATION (PER 100 USERS)

Category	Data
Annual cost savings	\$183,716
Net present value (NPV)	\$302,052
Total investment	\$141,227
ROI = NPV/investment	213.9%
Payback = (investment/first-year cash flow)	261 days
Discount rate	12%

Source: IDC, 2003

ROI ANALYSIS AND TOTAL COST SAVINGS OF
iSERIES CONSOLIDATION SOLUTIONS

The iSeries begins to deliver on its savings promise within the first year of deployment — a phenomenon that continues over three years — which gives impetus to a strong ROI argument for an IT server purchase. As most organizations continue to approach IT investments cautiously, especially during periods of global economic competitiveness that drive a strong focus on costs, identifying a solution that demonstrates a quantifiable positive effect on cash flow is a valuable discovery for the IT evaluation committee and for the senior business management that approves IT purchases. When cost reduction and productivity increases are considered, an iSeries consolidation solution results in a three-year ROI of 213.9%.

When cost reduction, user productivity, and reduction in downtime are considered, compared with other server systems, the iSeries implementations result in total three-year savings of \$542,728 per 100 users to the organizations in this IDC study (see Table 2).

Average annual savings, across all elements, are \$183,716. For the same three-year period, the investment made by the organizations studied is \$141,227. The difference between investment and savings is testimony to how the iSeries delivers its overall ROI.

TABLE 2

TOTAL THREE-YEAR SAVINGS ANALYSIS (PER 100 USERS) (\$)

	Year 1	Total	Average	Share (%)
Cost reduction	108,846	275,915	93,398	50.9
IT productivity	24,288	71,750	24,288	13.2
User productivity	23,200	73,350	24,829	13.5
Downtime	41,201	121,714	41,201	22.4
Total savings	197,534	542,728	183,716	100
Investments	41,720	141,227	47,076	

Source: IDC, 2003

IDC Methodology

IDC quantifies three-year costs of the investment to include hardware and software (initial costs, annual upgrades, annual maintenance), staffing, and outsourcing. To quantify overall benefits, IDC looked at cost reductions, productivity gains, and impact on revenue. Cost reductions are "hard" cost savings associated with payroll, outsourcing, and the acquisition of new hardware and software. The figures for cost reduction represent a reduction in actual cash outlay over a three-year period, as reported by IT managers. The cost reductions were fairly consistent across organizations.

Savings calculations also include "softer" costs, such as those associated with productivity — the improved capability of both IT staff members and end users to do their jobs. Finally, IDC also measured the savings that were realized from the reduction in the revenue that would otherwise be lost to server downtime. The cost savings that are associated with improved user productivity and with the revenue impact of new system deployments vary widely by company because they are dependent on the internal structure and processes of a particular organization.

CHALLENGES IN THE MARKETPLACE

The iSeries demonstrates significant ROI advantages, but it still faces challenges in today's highly competitive server marketplace. The category of x86 servers continues to lag behind that of scalable servers, such as the iSeries, in terms of reliability, availability, and serviceability (RAS); scalability; and manageability. However, x86 servers are gradually catching up with more scalable servers, as more features and functions are added over time. As was seen in this study, the iSeries can be shown to be a highly available server that keeps downtime to a minimum and supports high levels of end-user productivity. Those are reasons why IBM should continue to market the iSeries platform's ability to integrate multiple types of server operating environments on a single server platform and to run and to manage business-critical applications at a significantly lower cost of ownership than is possible on a large number of small, distributed x86 servers.

CONCLUSION

ROI is a key metric that is being scrutinized by senior management in most companies today for the purchase, deployment, and maintenance of server systems and associated storage devices. If ROI can be improved, then IT sites have the opportunity to dedicate financial and human resources to fund high-value business projects rather than to focus on system administration of server farms.

By consolidating workloads from a large number of underutilized, distributed servers onto a smaller number of iSeries computer "footprints," the IT sites in this IDC study were able to demonstrate ROI savings in less than a year, providing a short payback time for their initial investment in a new server platform. The consolidation of workloads onto scalable servers, such as the iSeries, is one approach that can be demonstrated to impact ongoing business operations — and the bottom line.

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