Making the Smart Choice vs x86
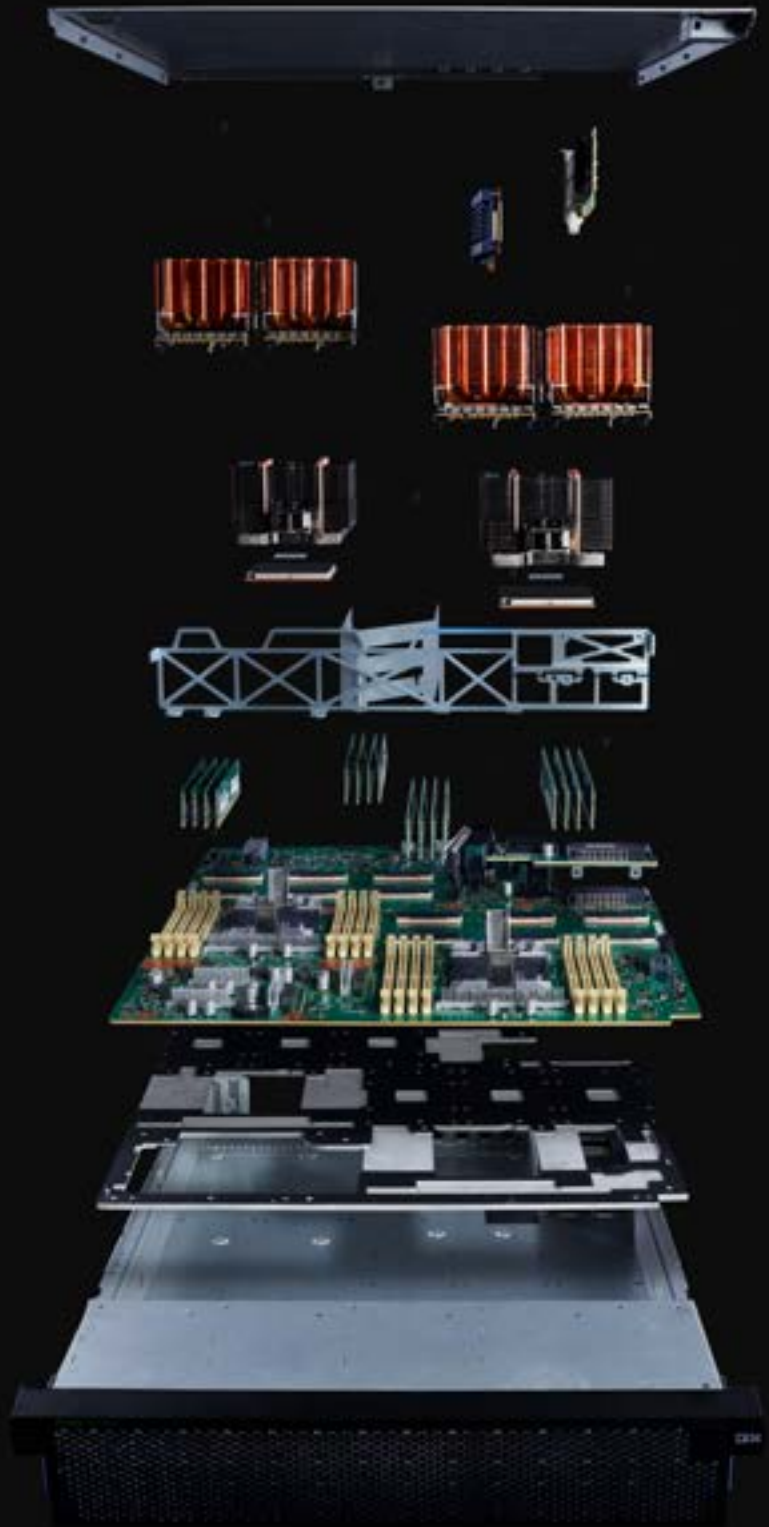
Scalable servers to meet the business needs of tomorrow.

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Make the Smart Platform Choice

Why organizations are choosing IBM Power Systems over x86 platforms

The perceived x86 benefits of lower acquisition cost and standardizing on are often made at the expense of performance, reliability, scalability and manageability. Moreover, many are driven by the impression that x86-based systems will solve all their computing challenges—when often that is not the case. This eBook looks at companies that chose to invest in IBM® Power Systems™ rather than continuing to run on or migrate to x86-based systems — and why.

"Are x86-based systems distinctly better at ingesting and processing data than competing systems? IDC believes that the short answer is: They're not."

Why IBM Power Systems over x86?

The following real-life business scenarios summarize the issues facing each company and the business benefits that IBM Power Systems provided over x86-based alternatives.

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US Manufacturing Company

A large US manufacturer runs its business on four IBM Power E870 systems. Their primary workloads are Oracle E-Business Suite (EBS) and business intelligence (BI) that operate very well with no performance or reliability issues.

Business needs:

Planning for growth without affecting critical business applications was the key aspect driving this company's discussion on what infrastructure would be best going forward. Additionally, they had to contain and manage their Oracle licensing costs, which pushed them to look at an alternative platform to their Power Systems E870 boxes, despite the fact that these systems were performing flawlessly.

The options:

The client had limited interest in moving to a Software as a Service (SaaS) model. There was discussion about moving just the Oracle databases to x86 and leaving the EBS, BI and other non-Oracle applications on POWER®. Subsequent elimination of both these options left the client with two basic choices: continue running leased E870s through 2018 and then upgrade to POWER9™ in 2019 or migrate all Oracle workloads to x86 blades from Cisco running RHEL and VMware.

They engaged the IBM IT Economics team to build a financial business case to help them decide on the best platform choice.

The business case results showed:

A savings potential of $4.2M over five years by continuing to run on the Power Systems platform

A 44% savings in annual operating expenses, due in large part to a projected

59% reduction in annual Oracle subscription and support costs

The choice:

The outstanding reliability and performance of their Power Systems servers further emphasized to the manufacturer the intrinsic benefits of the Power® platform versus an x86 alternative. As a result, the company intends to invest in new POWER9 systems at the end of their existing POWER8® lease this year.

North American Consumer Goods Company

A large North American retailer and long-time IBM client had invested heavily in Lenovo x86-based appliances for its SAP HANA Business Warehouse solution. Their plan was to migrate its SAP ERP Central Component, Customer Relationship Management and Advanced Planner Optimizer workloads to SAP Business Suite on HANA.

Business needs:

They needed to consolidate all workloads onto one ECC landscape while at the same time lowering TCO and containing costs in the transition to SAP S/4HANA. Additionally, the solution required flexibility and ease in managing the peaks and valleys of capacity demand. Lastly, because of the company's developing global reach, the solution could not tolerate downtime, planned or unplanned.

The options:

They could continue running the bulk of their SAP workloads on the Lenovo x86 platform or migrate all of them to POWER using a mix of AIX® and SUSE Linux. A financial business case was developed for the company's SAP S/4HANA environment using a comparative cost of ownership model for an x86 solution versus a POWER solution over a three-year period. The model clearly demonstrated that an IBM Power E880 would provide the flexibility, cost containment and reliability the company's operations demanded. In addition, the capability to run both Big Endian and Little Endian workloads on the same system in different LPARs would greatly improve operational efficiencies and facilitate a virtualized environment.

The business case results:

Current cost of ownership would be **reduced by 55%**, saving the company $2.9M over the next three years (net investment of $2M in new Power Systems servers)

This represented a six-month payback and a **140% ROI**

The choice:

After a visit to Bosch in Stuttgart and to the IBM SAP International Competency Center in Germany, the client was able to hear the benefits of running SAP HANA on the Power Systems platform firsthand.

They chose to purchase three IBM Power E880 systems running SUSE Linux Enterprise Server 11 and AIX. They also made plans for additional Power Systems servers to support SAP Business Suite on HANA and Business Warehouse.

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International Banking Company

A large international bank headquartered in Latin America ran its core banking applications on a mix of older x86 and Itanium-based servers. The age of these servers made them subject to unplanned outages, and they struggled to deliver the performance the bank required for its mission-critical applications.

Business needs:
As the bank planned for future infrastructure requirements, IT leaders knew they had to consolidate their core banking applications onto a single standardized platform with the lowest possible operational cost. They also had growing concerns around the rising energy and space consumption issues sparked by unchecked server sprawl.

The options:
The bank worked with IBM's IT Economics team to build a technical and financial business case to determine the feasibility of consolidating all its core banking applications to IBM Power Systems versus continuing to run these applications on x86-based systems.

IBM's sizing projections were based on the client's assumed 30 percent annual compound growth rate on CPU and memory requirements.

Applying these projections, the results indicated:

A **$15M savings potential** over a period of five years by consolidating to POWER versus x86 based and achieve a **savings of $18M** in Oracle licensing, service and support

The POWER solution would require **roughly one-tenth the number of cores required by the x86 alternative**

This move would lead to a **58% reduction in annual operating expenses** as well as a **90% reduction in electrical power consumption**

The choice:
With just three E870 servers, the bank was able to consolidate all its core banking applications onto a significantly smaller server footprint resulting in lower power consumption and increased performance and reliability.

LiveMon

LiveMon, an IT solution company, built the first version of its comprehensive 24-7-365 monitoring system on x86 Linux platforms.

Business needs:
They needed to ramp up services to take on much larger enterprise clients so they understood the importance of maintaining sub-second response times for event monitoring and reporting. IT leaders knew their current infrastructure would struggle to expand beyond 1,000 servers to support new clients so they had to be sure that sub-second response times wouldn't be affected by whatever solution was chosen.

The options:
They decided to evaluate POWER8 servers by deploying its solution on Power S822L systems.

The evaluation results showed:

2X performance increase
out of the box, even though its software was heavily optimized for the x86 architecture

POWER8 support of Little Endian enabled it to run its x86 code without modification

A key competitive differentiator is the artificial intelligence (AI) capability of LiveMon's solution, which can automatically detect and warn the client about upcoming threats to availability, capacity, performance and security across their hybrid infrastructures. This capability is made possible, at a large scale, by the massive multithreading capability of the POWER8 processor and the high-speed connections between the processors.

The choice:
The evaluation led LiveMon to deploy 112 IBM S822L systems worldwide with software designed to scale up or out, as opposed to more than 1,000 x86 servers. The POWER8 servers deliver an 8X performance increase for LiveMon's code and 24-7 availability at a much lower overall cost.

Earth Signal

Earth Signal is a company that performs 2-D and 3-D seismic analysis and puts it into a form their geologists can interpret. Discovering valuable oil and gas reserves depends on interpreting seismic data to construct models of what lies underground. Many exploration companies engage partners such as Earth Signal. Earth Signal competes on price and response time, which means squeezing the most compute power out of the smallest possible footprint.

Business needs:
The company's x86 systems were out of capacity and the data center lacked room to add more hardware, and the client had no desire to build a new one.

The options:
Attracted by the number of cores and threads per POWER8 processor, Earth Signal did a benchmark.

Benchmark results showed:

One POWER8 processor could outperform multiple x86-based Xeon processors

2U POWER8 system could complete in **60 hours a job that took a 21U Xeon system 100 hours**

The choice:
With x86 clusters, Earth Signal had to copy all of its data to each node, taking nine hours and then another nine hours to copy it back. The POWER8 systems have enough threads in each node to run these jobs immediately. This was a savings of 18 hours, which for some deals could be the difference between winning and losing.

Infrastructure matters

IBM has hundreds of case studies like these that demonstrate the advantages of the Power Systems platform over x86-based alternatives. These real-life business scenarios convey a few important lessons. First, think very long and hard before replacing a Power Systems server —the proven workhorse that has been running your business with leading performance, reliability and scalability capabilities. If you are considering an x86-based solution, think again about the perception of lower cost and easier to manage.

Infrastructure really does matter. If you don't take into consideration your application and workload characteristics and map these to the right architecture, your infrastructure will ultimately increase your IT costs. That's why IBM Power Systems is the smart infrastructure choice for your mission-critical workloads with lower TCO based on the proven performance, reliability and availability of the POWER9 processor.

IBM Power Systems servers—the smart choice—for increased performance, a smaller server footprint and improved reliability over x86 options

For more information, contact your IBM Business Partner:

Company Name

Phone | Email

Website