

SAP HANA assessment for Latin America IT Company

A case study to quantify costs and
benefits using SAP HANA on POWER

This is a redacted version of the executive summary section of an IBM IT Economics assessment. Customer specific information for which this assessment was performed has been removed or modified. Calculations, assumptions, customer IT topology and other information used to build the assessment in the main body of the report have been removed.

Customer situation, objective and scope of assessment

IT company is seeking cost saving measures for its infrastructure in anticipation of annual growth

Customer situation

An IT company currently provides infrastructure services for several customers in Mexico. Among the workloads they host for customers are SAP HANA and traditional SAP.

One of the biggest challenges for the company's current infrastructure the cost of data center costs including hardware, space and energy. Additionally, it faced expensive SLA penalties caused by unplanned outages.

Objective

Provide analysis of technical and financial factors that will allow the company to reduce the cost of its SAP HANA and SAP workloads and to provide a more resilient infrastructure.

Scope of assessment

Examine five-year total cost of ownership with an assumed 30% YTY growth and NPV rate of 9%* for three cases:

- Case 1 – Consolidate SAP Hana and SAP workloads on enterprise POWER9®
- Case 2 – Current x86 environment
- Case 3 – New x86 infrastructure



* Using an inflation rate of 5%

Target server configurations for analysis (year 1) for IT provider in Mexico

Case 1: POWER9 E980

Production and non-production SAP HANA

IBM Power Systems™

E980: POWER9 10C 3.70GHz

Activate 80 cores

IBM Power Systems E980: POWER9 8C 3.90GHz (16 sockets, 128 cores)

102 Active cores + 6 cores for SAP

Storage

2 IBM FlashSystem™ 9100

101TB flash



Case 2 & 3: HPE x86 DL580

Production and non-production SAP HANA

17 HPE ProLiant DL580 Gen9 (4U): Xeon E7-8870v3 18C 2.10GHz
918 cores

Production and non-production SAP

1 HPE ProLiant DL580 Gen9 (4U): Xeon E7-8870v3 18C 2.10GHz
16 cores

Storage

573TB (Netapp)



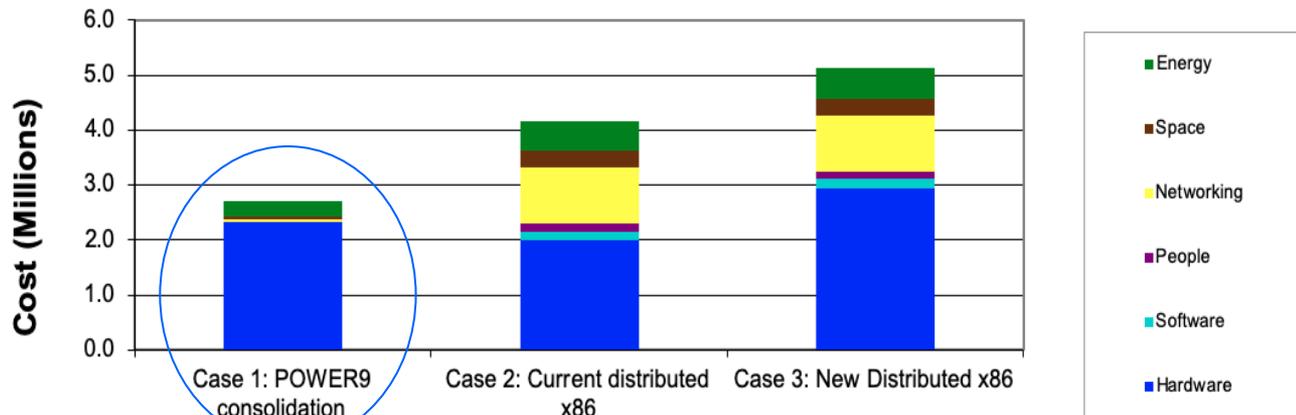
TCO analysis for IT provider in Mexico

POWER9 case shows significant savings in energy, floor space and networking with a

savings of \$1.4M

over five years compared to staying on current x86 infrastructure

5-Year TCO Comparison



	Hardware	Software	People	Networking	Space	Energy
Case 1: POWER9 consolidation	2,327,044	0	7,087	51,682	44,359	284,887
Case 2: Current distributed x86	1,994,074	156,862	141,270	1,030,221	294,748	557,916
Case 3: New Distributed x86	2,948,631	156,862	141,270	1,030,221	294,748	557,916

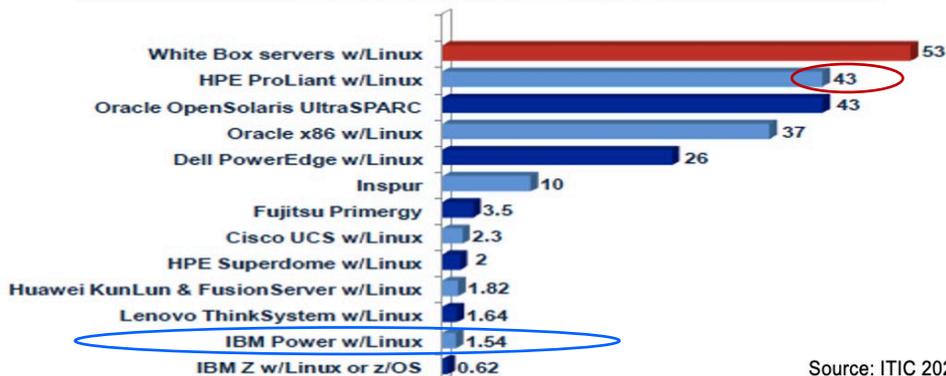
Note: Disaster recovery costs are excluded from the TCO but additional savings with POWER9 could be achieved by adding DR to the cases

POWER9 can reduce risk of downtime

ITIC survey finds POWER9 provides 99.999% availability¹ with only 1.54 minutes of unplanned downtime a year compared to 43 minutes with 99.99% availability with x86²

Unplanned Downtime by Server Hardware Platform Per Minute/Per Server in 2020

Unplanned Downtime Due to Inherent system or component flaws per Minute/per Server



Source: ITIC 2020

Platform	Availability	Annual downtime minutes per server	Annual downtime cost per server ³
x86	99.992%	43	\$215,000
POWER9	99.9997%	1.54	\$7,700

¹ <https://www.ibm.com/it-infrastructure/us-en/resources/power/five-nines-power9/>

² ITIC 2020 Global Server Hardware, Server OS Reliability Report

³ Annual downtime cost is based on ITIC 2020 report of "a single hour of downtime estimated at \$300,000 equates to \$4,998 per server/per minute".

Choice of hardware avoids downtime costs

Compare POWER versus x86 cases for IT provider in Mexico

Over five years **potential x86 downtime costs** could be **346 times greater** than POWER9

Potential unplanned downtime costs for POWER8® versus x86 server cases

Platform	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
# of x86 servers	18	24	30	39	50	\$34,615,000
Total x86 downtime cost	\$3,870,000	\$5,160,000	\$6,450,000	\$8,385,000	\$10,750,000	
# of POWER® servers	2	2	3	3	3	\$100,100
Total POWER downtime cost	\$15,400	\$15,400	\$23,100	\$23,100	\$23,100	

Server numbers based on 30% YTY growth in cases 1, 2 and 3

Server downtime minutes and cost based in ITIC 2020 report, <https://www.ibm.com/it-infrastructure/us-en/resources/power/five-nines-power9>

Value of Power Systems grows for IT provider in Mexico

Value of Power Systems investment increases annually

compared to the potential cost of x86 downtime*

\$2.1M is cost of investment in Year 0

\$3.9M is value of cost avoidance in Year 1

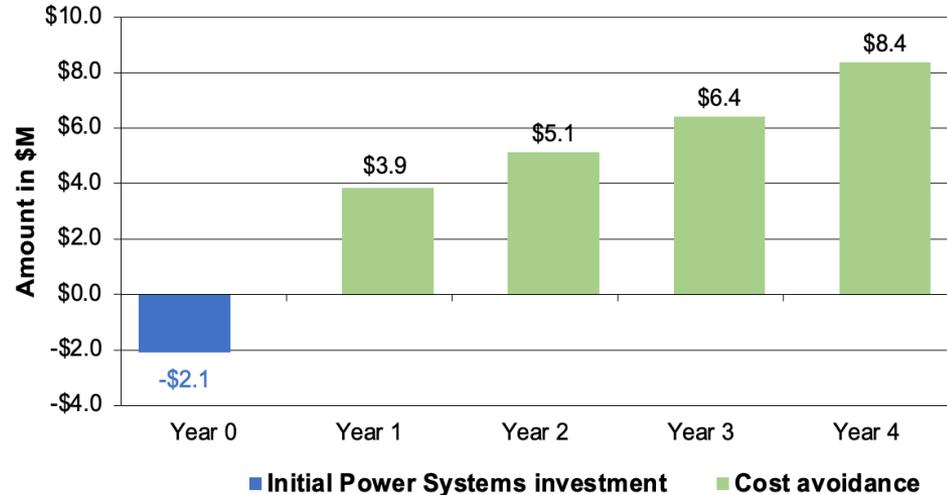
\$5.1M is value of cost avoidance in Year 2

\$6.4M is value of cost avoidance in Year 3

\$8.4M is value of cost avoidance in Year 4

Power Systems ROI analysis*

Power Systems server acquisition versus x86 cost avoidance based on potential downtime



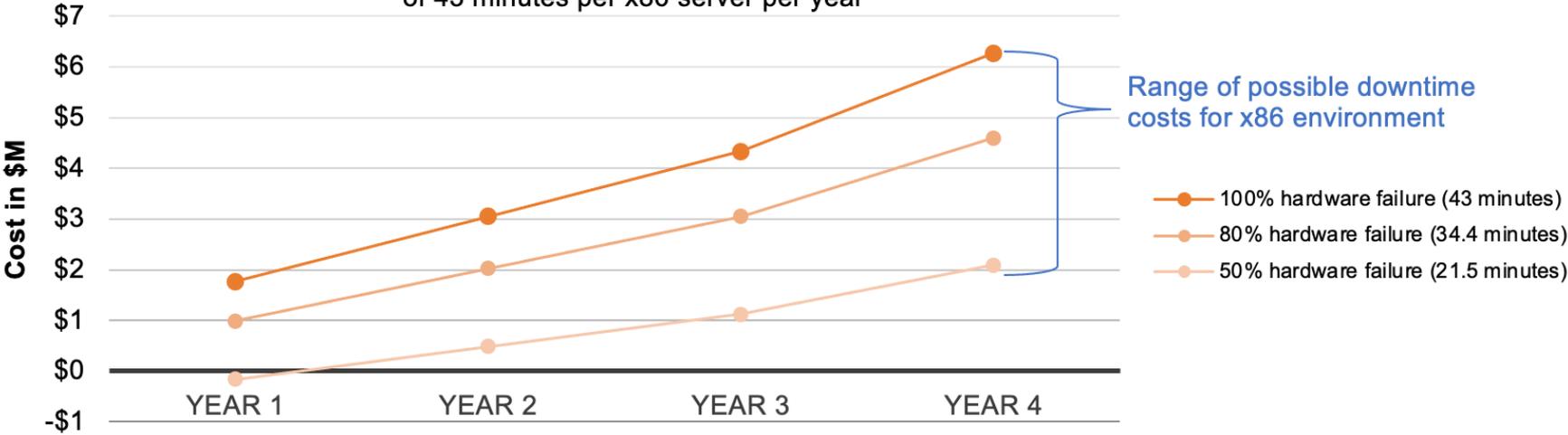
* Cost analysis based on cost of two Power Systems and 18 x86 servers in year one with 30% YTY server growth

Probability of hardware downtime for IT provider in Mexico

Return in investment in Power Systems increases annually compared to the potential cost of x86 downtime*

Probability of x86 server downtime based on survey hardware failure

Annual costs ranging from 50% to 100% downtime occurrence of 43 minutes per x86 server per year



Benefit observations for IT provider in Mexico

POWER9 technology provides higher availability for SAP HANA and SAP workloads and provides a lower TCO

Analysis found a TCO reduction of **35%** with savings up to **\$1.4M** with POWER9 compared to the company's existing x86 infrastructure and a savings of **\$2.4M** compared to moving to new x86 servers.

POWER9 provides a more resilient alternative for critical workloads with 99.999% availability. POWER9 can mitigate potential SLA penalties by reducing exposure to unplanned downtime.

Enterprise POWER9 systems are highly scalable and secure and expedite time to market by easily provisioning new capacity. POWER9 also provides agile DevOps tools and Red Hat® OpenShift® containers for a hybrid cloud enterprise.



IT Economics information

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IT Economics consulting and research
IBM Z, LinuxONE, Power Systems, Red Hat® and more

The Latest Research

Cloud/DevOps

- Understand the value of hybrid cloud environments for business
- Assessing a provider's cloud readiness
- Enabling an Effective DevOps Strategy

IBM Z technology

- Maximize the value of your IBM Z systems
- Optimizing IBM Z performance
- Additional resources

Security

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- Compliance and Performance Program
- Additional resources

Watson

- IBM Watson Analytics
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- Additional resources

An IBM IT Economics assessment
Evaluate technical and economic differences between your existing environment and alternative

IT operating costs, capital requirements, migration, servers
Business value (BPE) and quality of service (QA)
Workload consolidation, server utilization and performance

No-charge IT Economics assessments on [ibm.com](https://www.ibm.com/it-infrastructure/services/it-economics/assessments)
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IT economics cost and value assessments

IT simplification and cost reduction

Consider large and small-scale looking for ways to simplify operations and reduce IT costs while meeting the demands of their business. IBM offers a no-charge economic assessment of your IT environment to determine the most effective technical and economical solution for your business.

→ Contact us

Methodology

- Approach**
Our team is specialized in examining economic differences between solutions in client environments and focused on identifying areas for efficiencies, cost reductions and increased business value.
Watch how to capture meaning from your data (02:54)
- Expertise**
We have world-wide and local teams with expertise in IT economics methodologies, as well as on-site client consulting.
Learn about IT economics metrics (03:48)
- Results**
Receive a detailed analysis based on your customized scenario with recommendations to achieve technical and business requirements.
Questions about IT economics analysis (04:48)
Learn more about types of IT economics analysis (02:48)

Common scenarios

- Modernizing your mainframe**
Learn how one enterprise modernized its IT by using AIO5 technologies for its COBOL, PL3 and Assembly programs to create new functionality with new user interfaces.
IT Modernization (02:24)
- Reducing carbon footprint**
How customers assess the impact of using different technologies to reduce their carbon footprint.
Carbon Footprint Requirements (02:09)
Acquisition Infrastructure (02:49)
- Merging IT in an acquisition**
Learn how two companies converged diverse IT infrastructures to minimize IT costs.
Acquisition Infrastructure (02:49)
- Simplifying with Open Source**
Gain insight from a university that was able to overcome IT complexity with open source computing on LinuxONE.
IT Complexity (02:44)
- Accurately sizing workload requirements**
Examine the challenge of using server and storage requirements accurately when using open source workloads on different architectures.
Open Source Software Requirements (01:51)
- Mitigating SLA penalties**
Learn how an MSP overcame unpriced downtime penalties and lowered SW costs.
SLA downtime parity (01:44)

An IBM IT Economics assessment
Evaluate technical and economic differences between your existing environment and alternative

IT operating costs, capital requirements, migration, servers
Business value (BPE) and quality of service (QA)
Workload consolidation, server utilization and performance

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