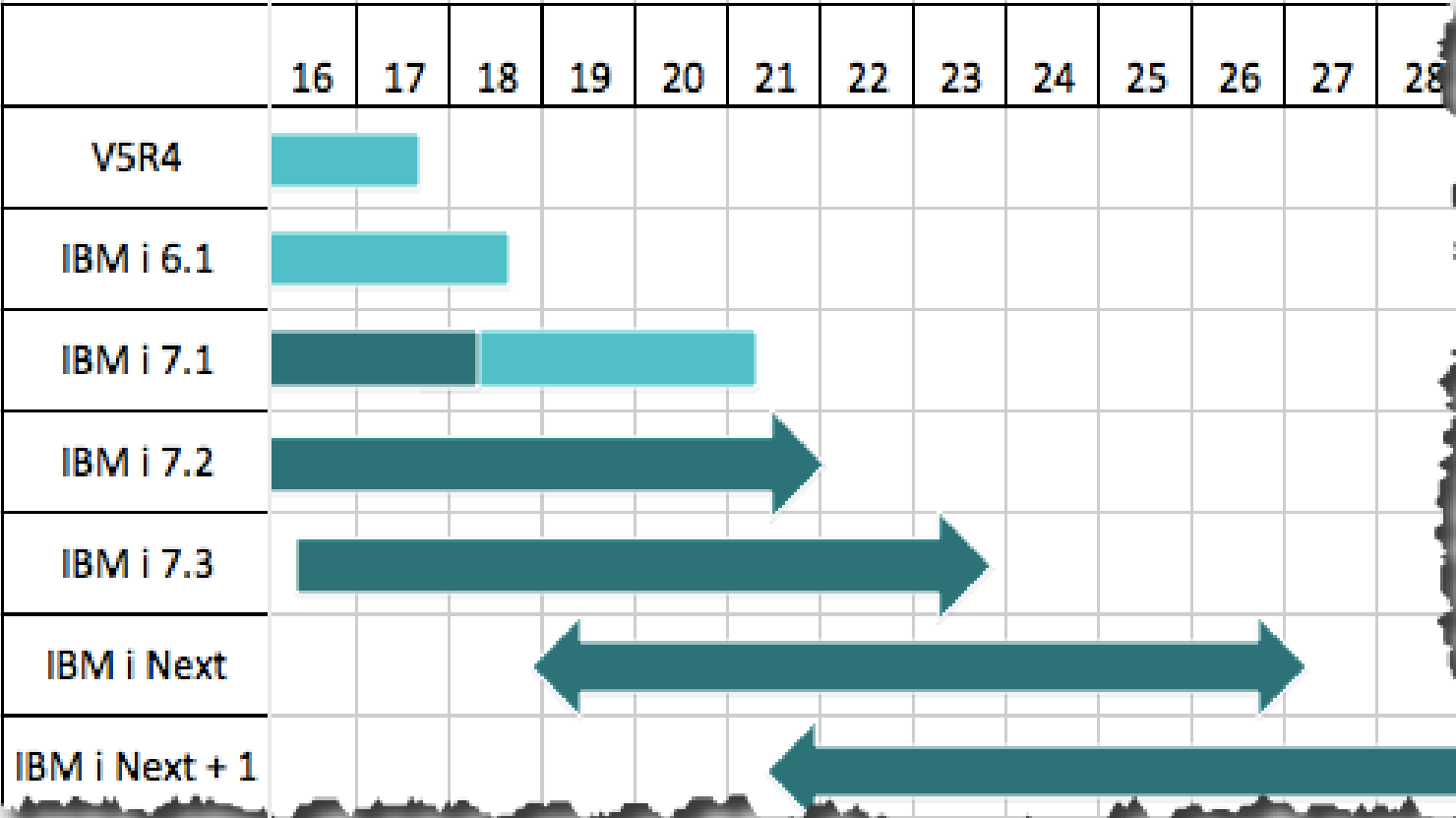


Looking ahead with IBM i

10+ year roadmap



Enterprises Trust IBM® Power

80 of Fortune 100
have
IBM Power Systems

The top 10 banking firms
have
IBM Power Systems

9 of top 10 insurance
companies have
IBM Power Systems

8 of top 10 healthcare
companies have
IBM Power Systems

8 of top 10 retailers
have
IBM Power Systems

Why IBM Power Systems?

POWER9 is the future-forward infrastructure IT Leaders need to transform their business, servers that are built for cloud, able to crush today's most advanced data applications and revolutionize any mission critical application.

Simplified Multicloud

IBM Power Systems enable the most data intensive and mission critical workloads in private and hybrid cloud environments.²

Delivered with Security

IBM Power Systems have security built in at all layers, from processor to the OS, designed to deliver end-to-end security.

Scales Performance Affordably

IBM POWER9 core technology drives the world's fastest supercomputers and is ready to accelerate your enterprise.

Proven Reliable

IBM Power Systems ranked the most reliable for 10th straight year delivering 99.9996% uptime.³

POWER9 Facts & Figures

IBM POWER9:

Enhanced core and chip architecture for next-gen workloads

Built from the ground-up for data intensive workloads, POWER9 is the only processor with state-of-the-art I/O subsystem technology, including next generation NVIDIA NVLink, PCIe Gen4 and OpenCAPI

Gain up to 4.6x performance improvement when you upgrade to POWER9

- ✓ 4.6x per-core performance vs. POWER5
- ✓ 2.5x per-core performance vs. POWER6
- ✓ 2x per-core performance vs. POWER7

POWER9 also increases IO bandwidth & memory bandwidth

POWER7 → POWER9
↑ **>8X** IO Bandwidth
↑ **3X** Memory Bandwidth

POWER8 → POWER9
↑ **2X** IO Bandwidth
↑ **20% More** Memory Bandwidth

	IBM Power Systems 750	IBM Power Systems E850C	IBM Power Systems E950
IO Bandwidth	74 GB/sec	315 GB/sec	630 GB/sec
Memory Bandwidth	307 GB/sec	768 GB/sec	920 GB/sec

IBM POWER9 vs x86

POWER9 vs x86 Xeon SP

- 2x¹** Performance per core
- 2.6x²** RAM per socket
- 1.8x³** Memory bandwidth per socket

POWER9 with NVLink vs x86 Xeon

- 9.5x⁴** CPU to accelerator bandwidth

POWER9 Helps You \$ave

Upgrading results in savings on:

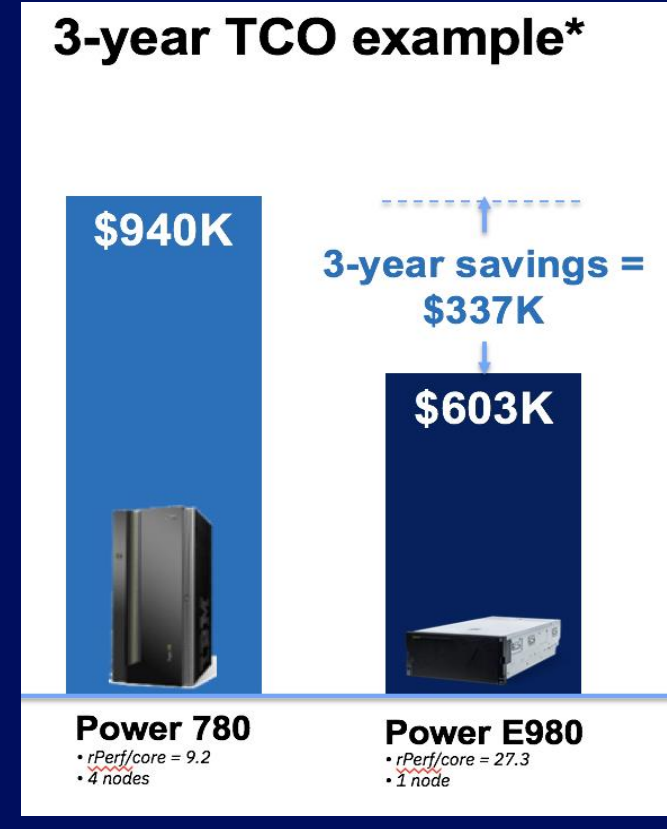
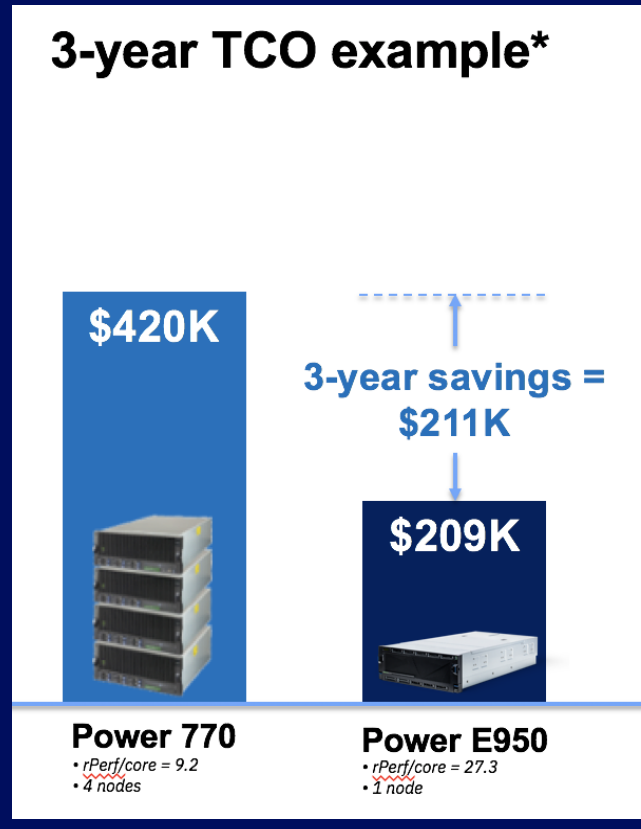
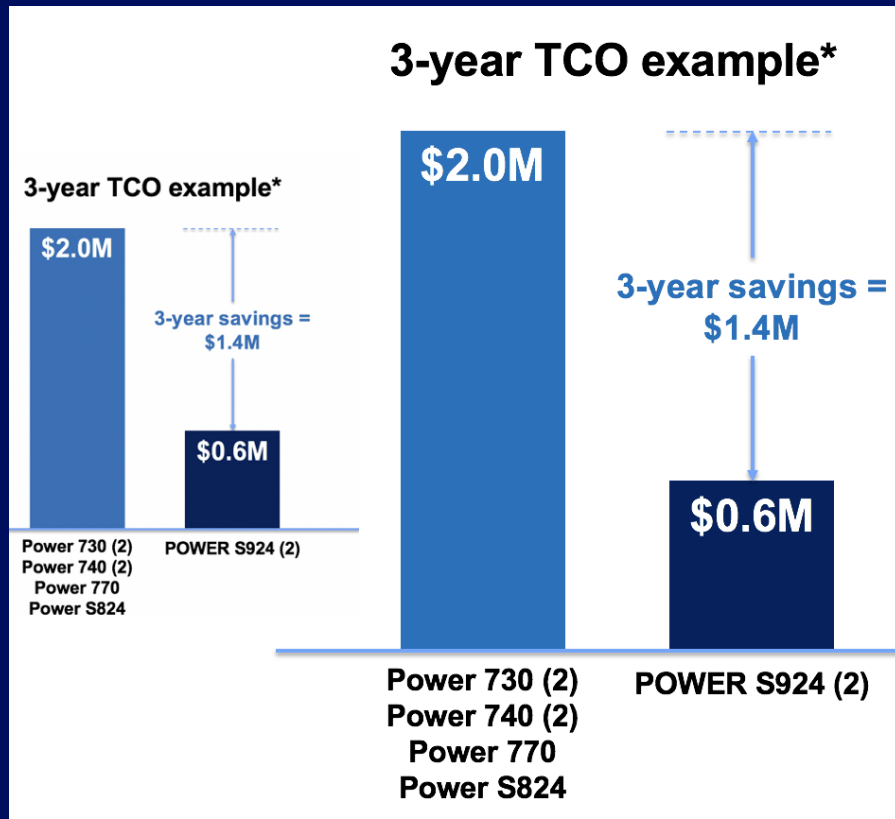
1. Hardware
2. Software licensing
3. Maintenance & support
for hardware & soft ware
4. Data center energy & cooling costs

Results:

- Server consolidation

Results:

- Nearly 3x better performance per core
- Server consolidation (4 nodes to 1 node)



Simplified Multicloud

IBM Power Systems enable the most data intensive and mission critical workloads in private and hybrid cloud environments. With IBM POWER9 based Power Systems, you can dynamically scale compute and memory on demand and build a cloud designed for the most data intensive workloads.

“Pay As You Grow” IT for Mission Critical workloads

- Dynamically scale compute and memory on demand based on business needs
- Deploy multiple production workloads and multiple OS – IBM i, AIX, Linux - in a server with workload isolation
- Reduce data center footprint deploying up to 8 SAP HANA production instances per server⁴

Designed for Agility

- Reduce IT burden with policy based automation and self-service tools
- Effortlessly move workloads across generations of Power Systems without disruption
- Cloud-enable any workload in with built-in PowerVM hypervisor²
- Dynamic sharing of up to 192 cores, 64TB of memory across up to 1000 VMs

Seamless Multicloud Compatibility

- Open integration with leading multicloud managers
- Rapidly build and deploy cloud-native apps for scalability and optimal performance in multi-cloud environments
- Easily import/export VMs between Power based private and public clouds.

Delivered with Security

Security should be designed in and not an add on. IBM Power Systems has security built in at all layers, from processor to the OS, to deliver end-to-end security

End-to-End Security

- Security built in at all layers in the stack – Processor, Systems, Firmware, OS, Hypervisor
- IBM owns, tests and delivers end-to-end security

Secured Cloud

- PowerVM is the only hypervisor amongst its major competitors with no reported vulnerabilities⁶
- Reinforce security of cloud environments by only executing verified images across all layers, from processor to the OS

Security In Motion

- Protect data in motion with secured Live Partition Mobility (LPM)
- Accelerated encryption built into the chip (120GB/S in POWER9 vs 60GB/S in POWER8) protects data at rest and in motion

Scales Performance Affordably

You need servers that stay ahead of workload challenges, new data sources and compute demands. IBM POWER9 processor drives the world's fastest supercomputers and is ready to accelerate your enterprise.

POWER9 vs compared x86 Xeon SP

2x	Performance per core ⁷
2.6x	RAM per socket ⁸
1.8x	Memory bandwidth per socket ⁹

POWER9 vs POWER8

2x-4x	Memory Capacity ¹⁰
2x	IO bandwidth ¹¹
40-50%	More Performance ¹²

Lower TCO

Save **50%** in 3-5 years moving from POWER7 to POWER9¹³

Proven Reliable

Today's always-on world requires resilient, mission-critical servers that deliver continuous operations. IBM Power Systems ranked the most reliable for 10th straight year³ and is an industry leader for enterprise servers.⁵

Industry leading Reliability

- IBM Power Systems ranked the most reliable for 10th straight year³
- IBM Power Systems delivered highest uptime of 99.9996% (2.0 minutes/server/annum unplanned downtime) of any non-mainframe Linux platforms³
- IBM Power Systems have security built in at all layers of the stack – processor, firmware, hypervisor, OS and everything between.

Investment Protection

- Committed 10+ years roadmap for both IBM i and AIX
- Deploy a new generation of servers without recompiling existing applications
- Effortlessly move workloads across generations of Power Systems without disruption

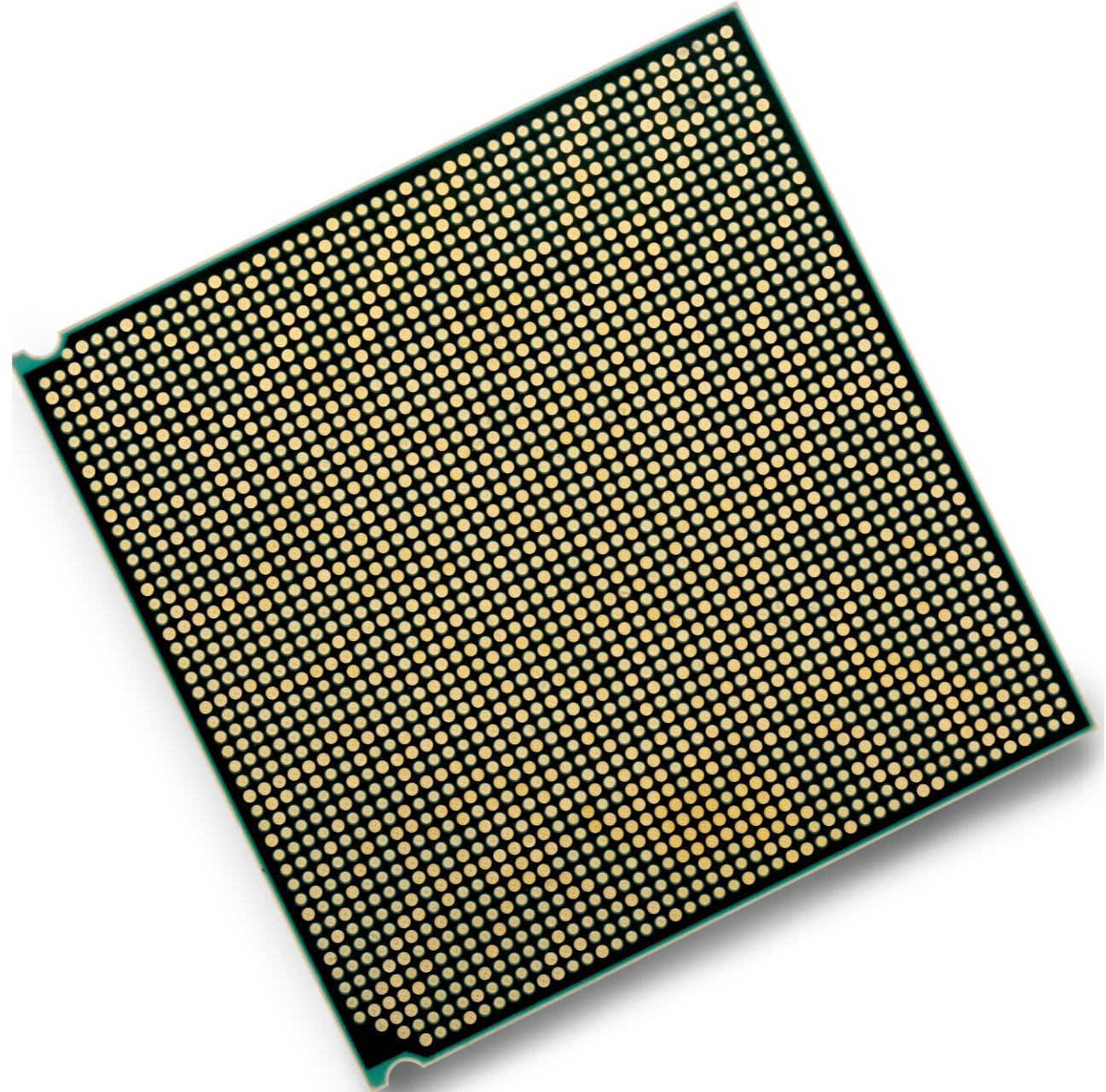
Industry Leadership in Enterprise Servers

- IBM Systems was #1 in combined 16+ socket large system, standard rack optimized and tower servers during 2017 with an aggregate revenue share of 82.1%⁵
- IBM Power Systems was #1 in combined 8 socket large system, standard rack optimized and tower servers during 2017 with an aggregate revenue share of 34.4%⁵

POWER9 gives you a
performance advantage

2.54X

per-core performance vs. comparable Intel x86 solutions



POWER9 offers a cost advantage vs. x86

57%

lower solution cost potential vs. comparable Intel x86 solutions

