

Implementing SAP Infrastructure

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Introduction

SAP HANA v's SAP infrastructure

Cloud architecture

Transitioning to SAP HANA in your time

Conclusions

Lenovo™





5,500+ Lenovo HANA servers in production

400+ Terabyte in SAP Cloud

+ Some Customers using Lenovo SAP HANA solutions



You're in safe hands





SAPPHIRE 2016

Lenovo Wins SAP Innovation Award



Data Center Systems @Lenovox86Server · May 17

#Lenovo wins innovation award at #SAPPHIRENOW for optimized supply chain and manufacturing system using SAP HANA.



+ Enter to win!





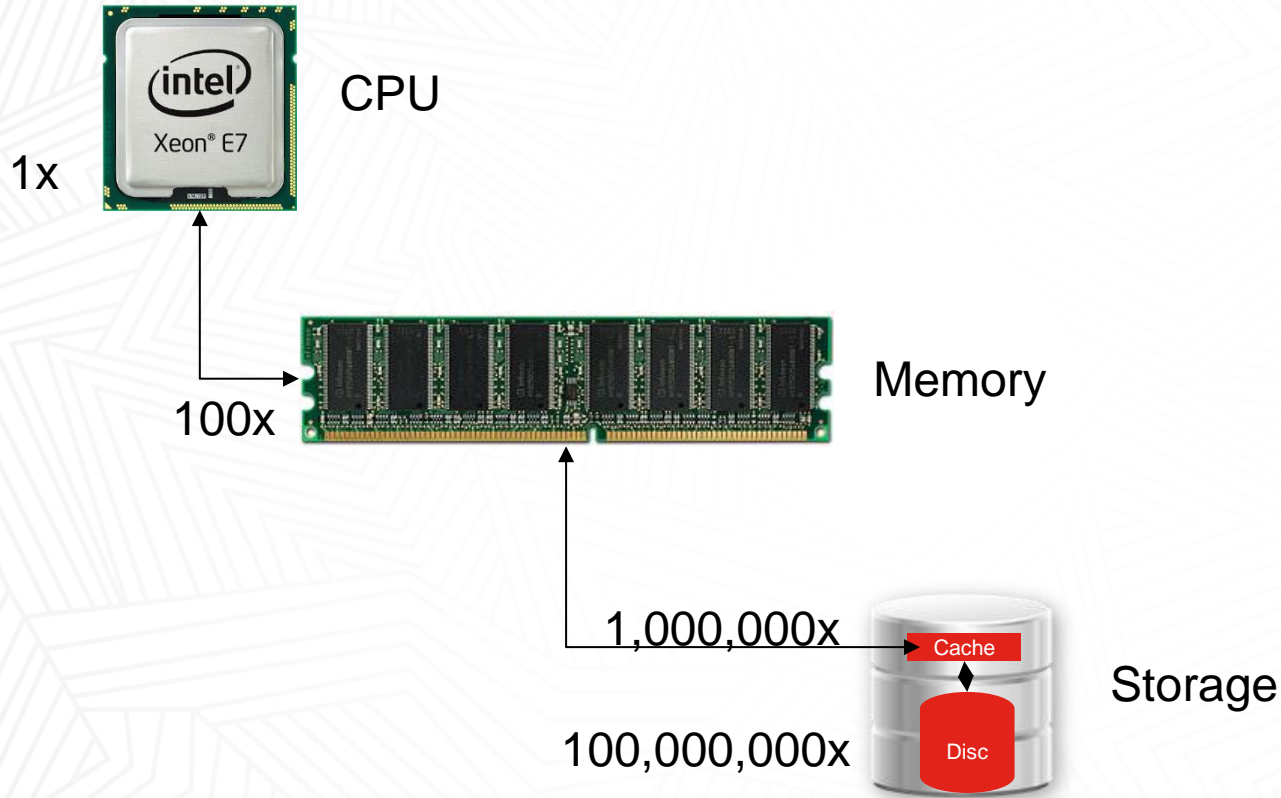
SAP HANA infrastructure

Lenovo™

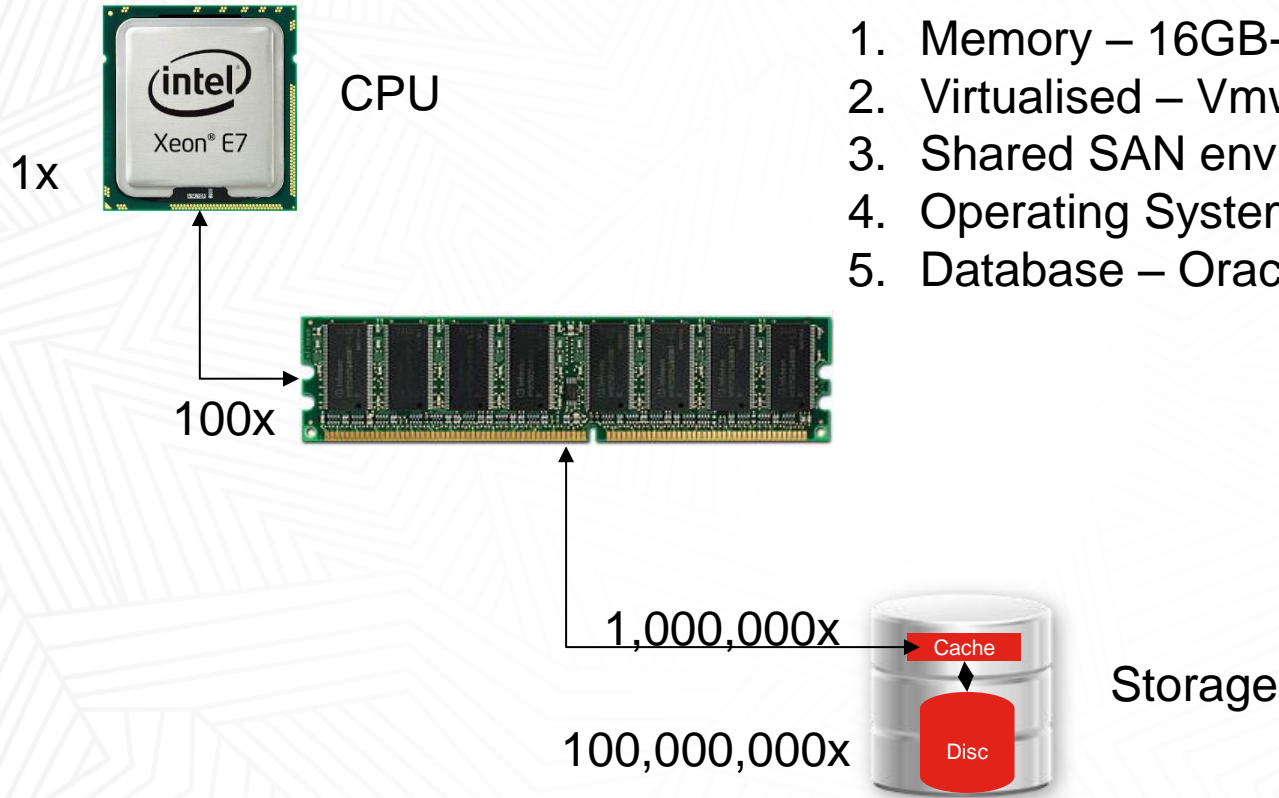
+ Traditional versus HANA infrastructure



+ Critical infrastructure

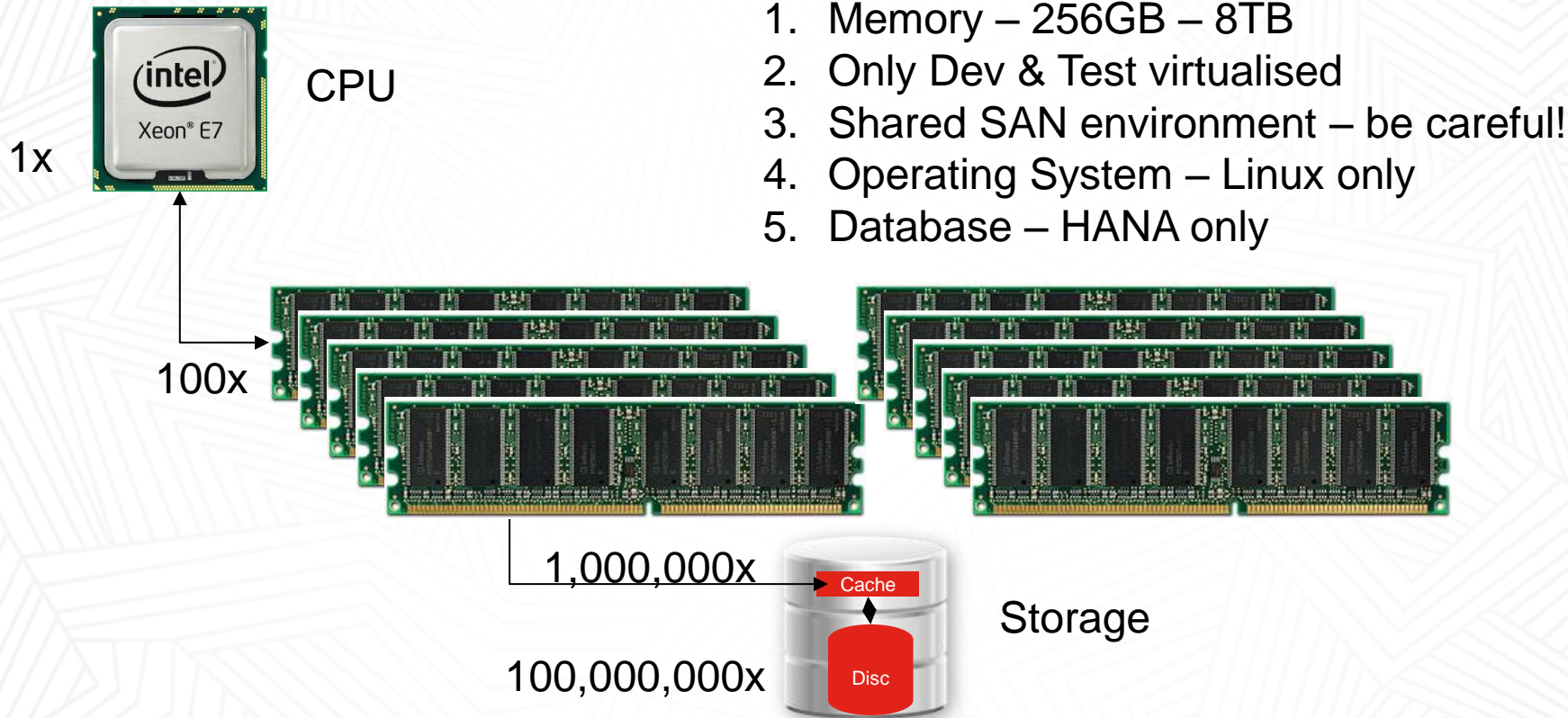


+ Critical infrastructure – typical non-HANA

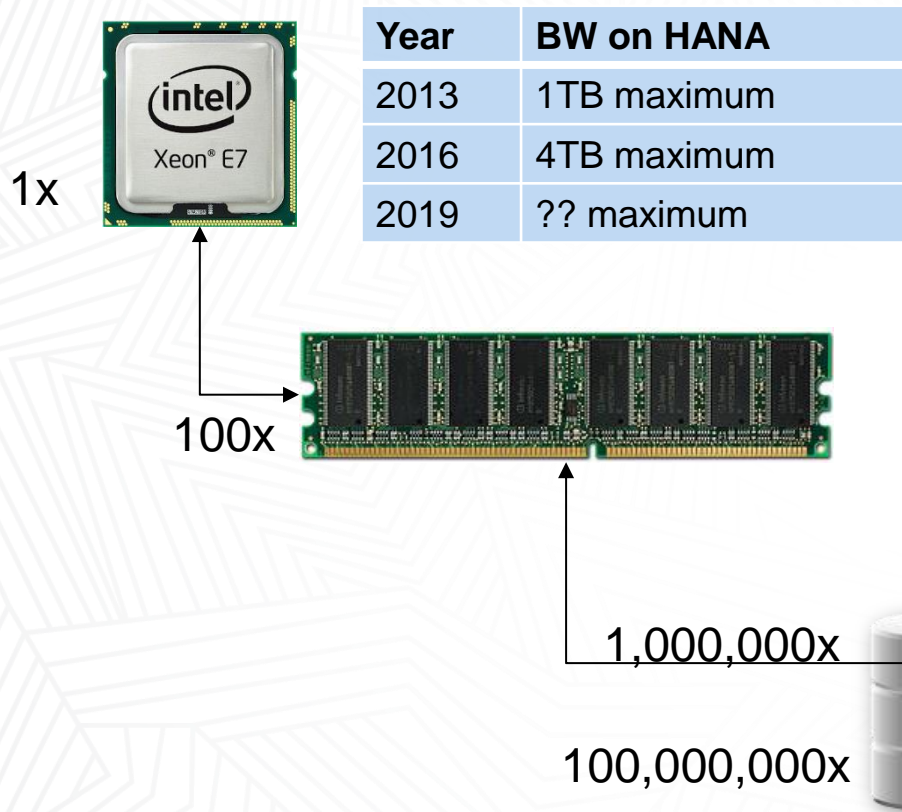


1. Memory – 16GB-256GB
2. Virtualised – Vmware, Hyper-V, KVM etc
3. Shared SAN environment
4. Operating Systems – Microsoft or Linux
5. Database – Oracle, MaxDB, etc

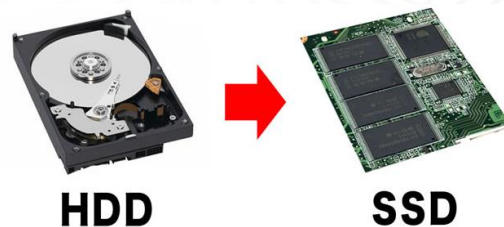
+ Critical infrastructure – HANA



+ Critical infrastructure advances



16GB then 32GB then 64GB memory DIMMS –
now testing 128GB DIMMS
Persistent memory is coming! (Intel 3D Xpoint)



+ **NEW** - All-Flash Lenovo SAP HANA

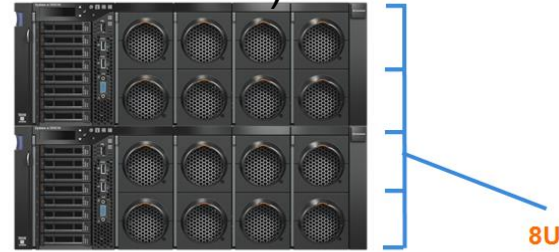
Replace this 6TB SAP HANA solution...

33.6TB (28 Spinning
drives)



... with this!

34.6TB (9 Solid State
drives)

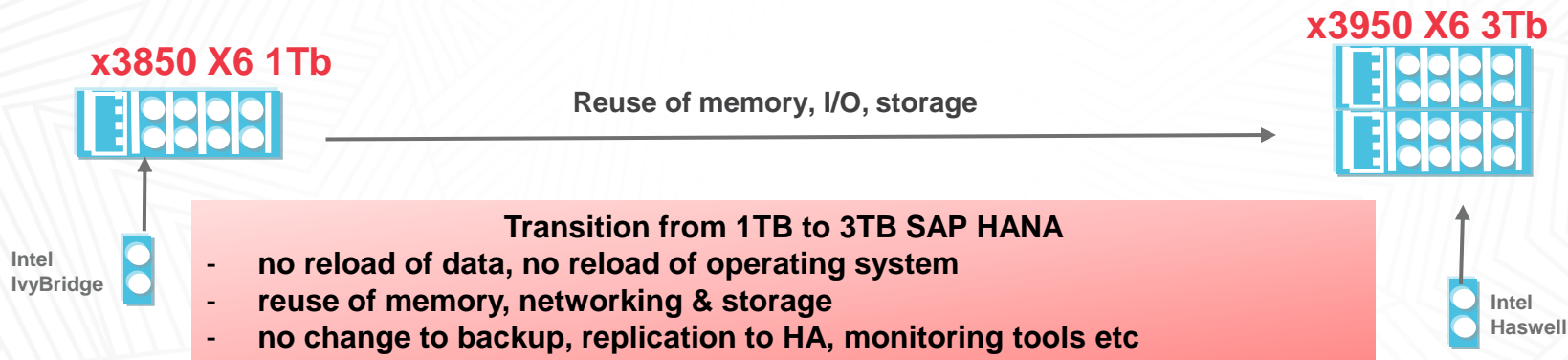


- Significantly better reliability
- Reduced complexity
- Less space & cabling
- Powering and cooling the storage subsystem is reduced by 82%

+ HANA systems grow – agility is key

- Harvey Norman purchased a **1TB** SAP HANA BW solution in 2014
 - 3 servers - Development, Test & Production across multiple locations
- Required HANA expansion in Feb 2016 to **3Tb**

Harvey Norman



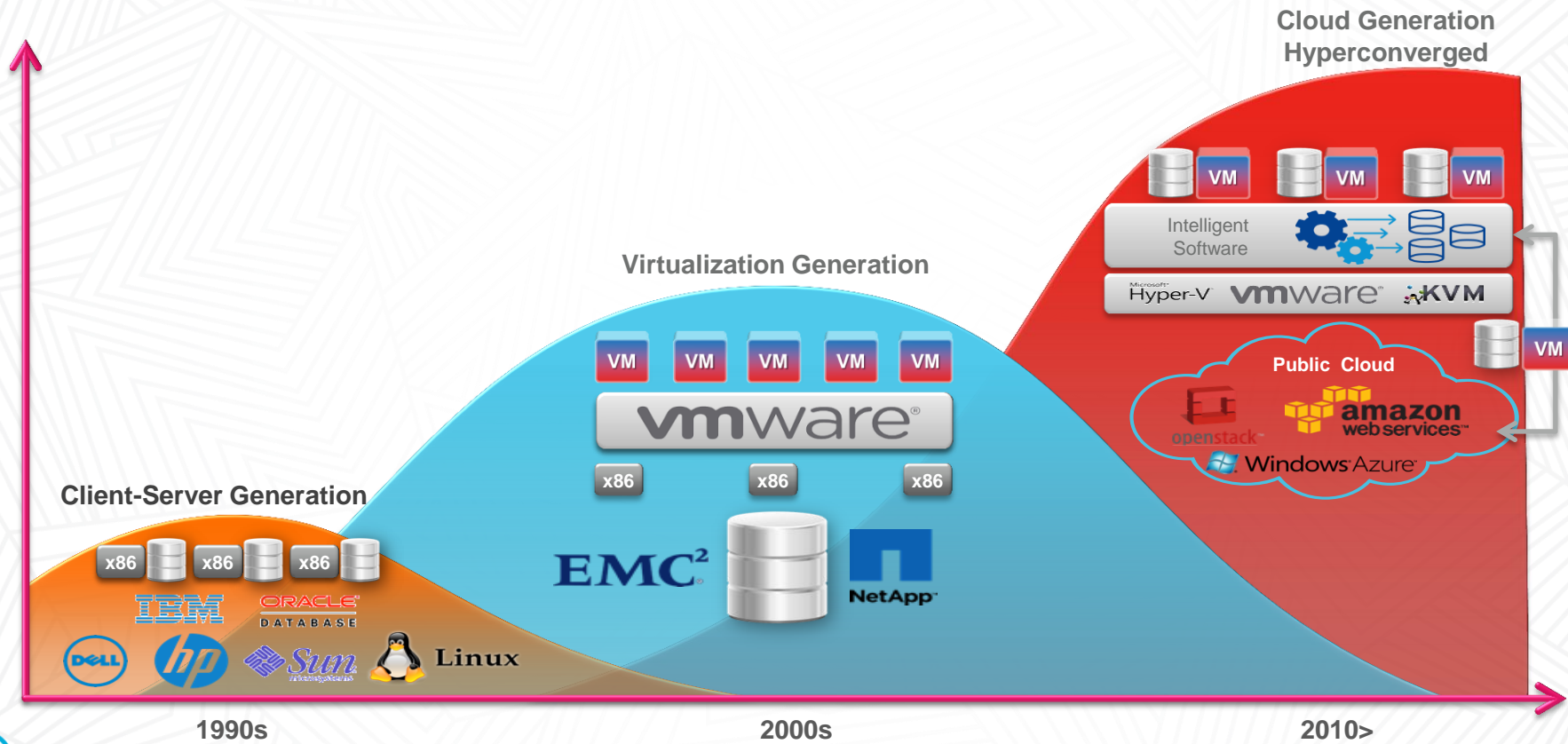
"Harvey Norman has successfully built our Store and Support Office Reporting platform using SAP HANA and Lenovo infrastructure – our recent upgrade from 1TB to 3TB nodes was delivered cost effectively and without any business outage or disruption" Gordon Dingwall Chief Information Officer, Harvey Norman



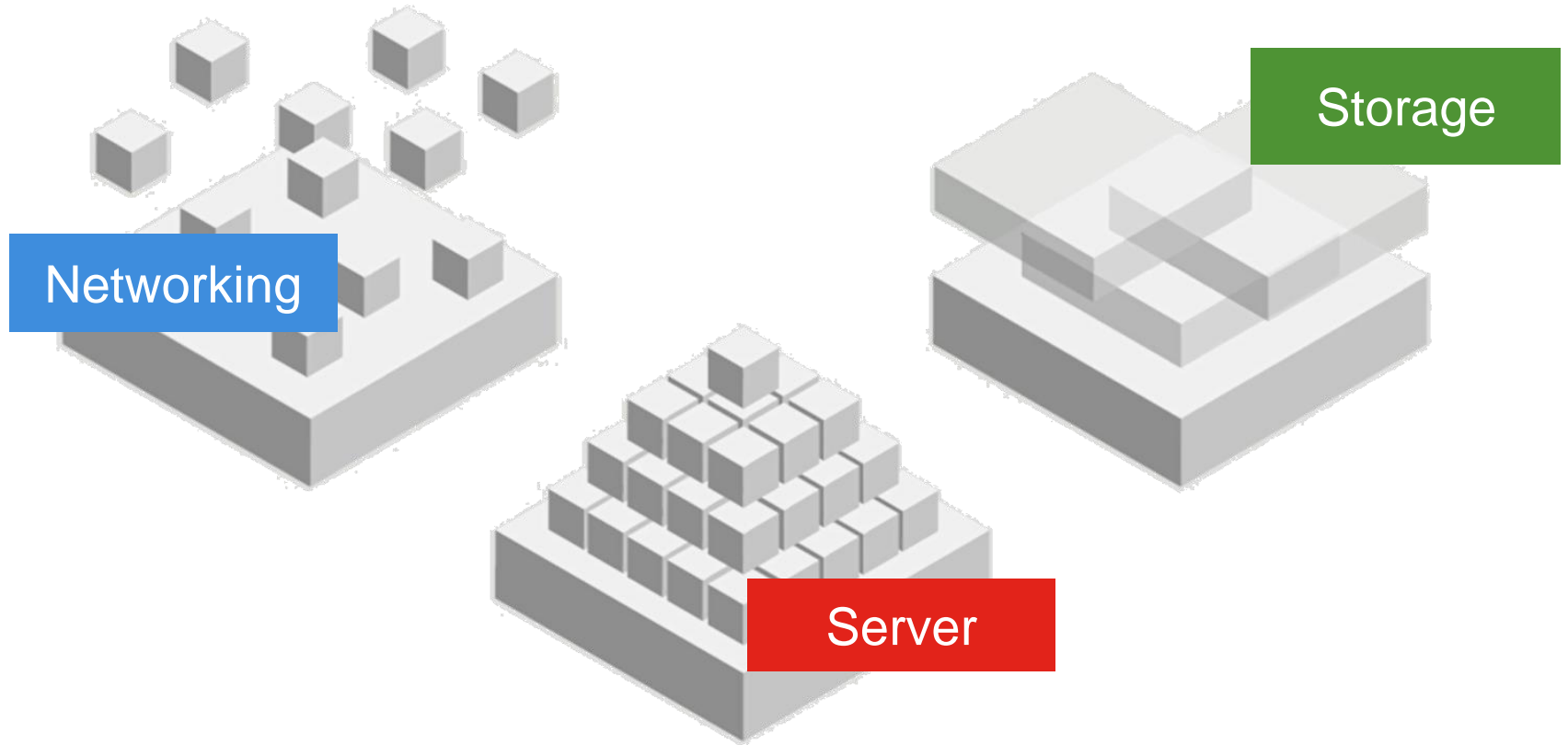
Cloud Architecture

Lenovo™

+ Evolution Of Data Center Infrastructure



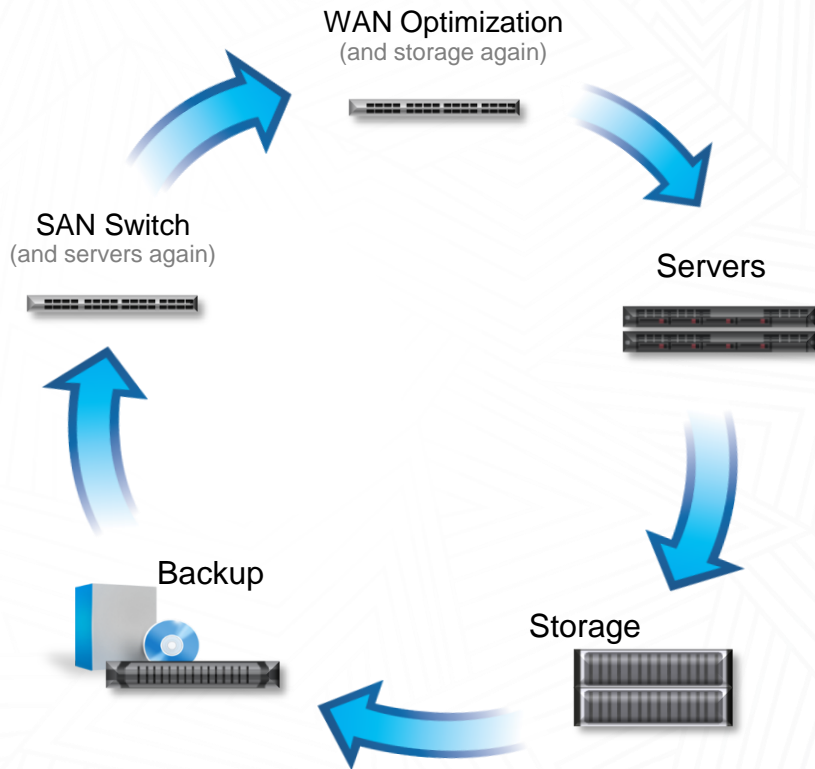
+ Traditional Datacenter Approach



+ The Traditional Buying Cycle

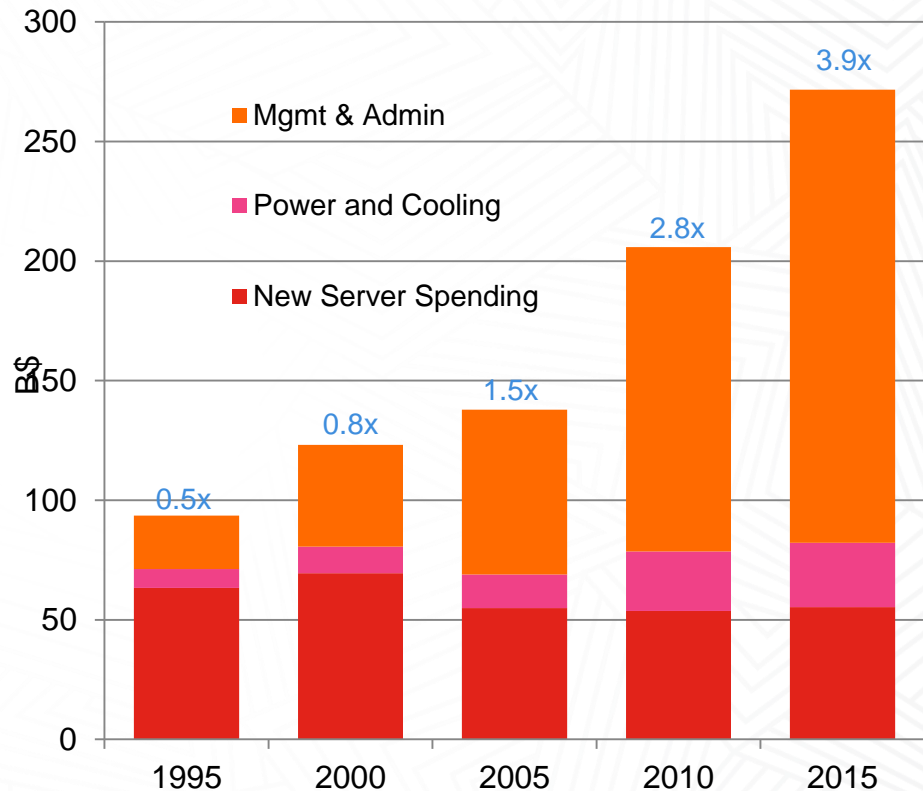
Challenges

- Never-Ending Refresh Cycle
- Migrations are expensive
- Budgets are flat
- Each Technology has its own:
 - Management
 - Training
 - Maintenance
 - Support
 - Operational Expense
- Predictions of future growth have been far from accurate



+ The cost of traditional datacenter approach

...operational costs, are growing dramatically.

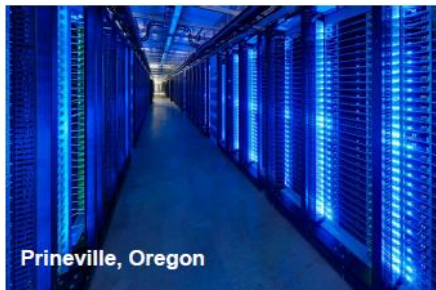


+ Cloud and Web-Scale Architectures

facebook.

Google™

Microsoft



Complete
convergence of
compute and
storage tiers



Highly
distributed,
shared-nothing
software model



Run on
commodity
hardware

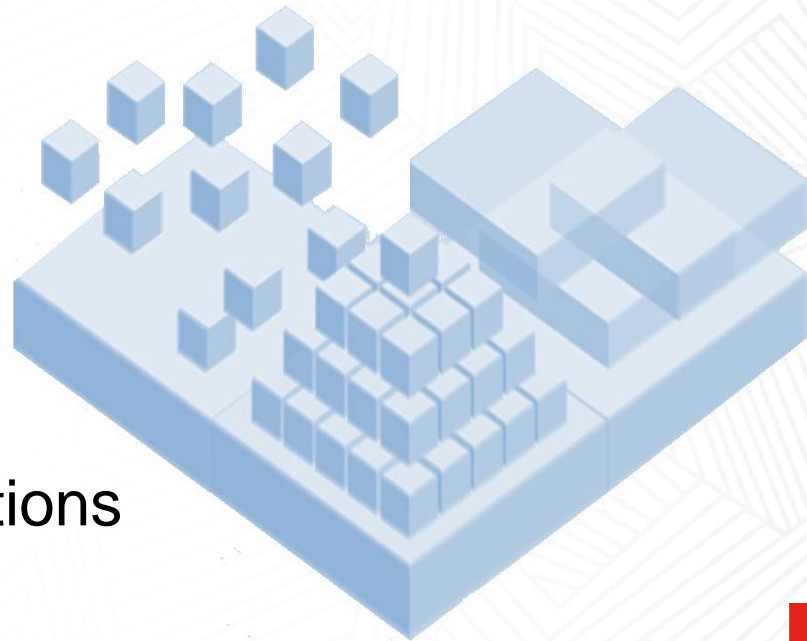


Pure scale-out
architecture

+ Cloud and Web-Scale Architecture for Private Cloud (Nutanix)

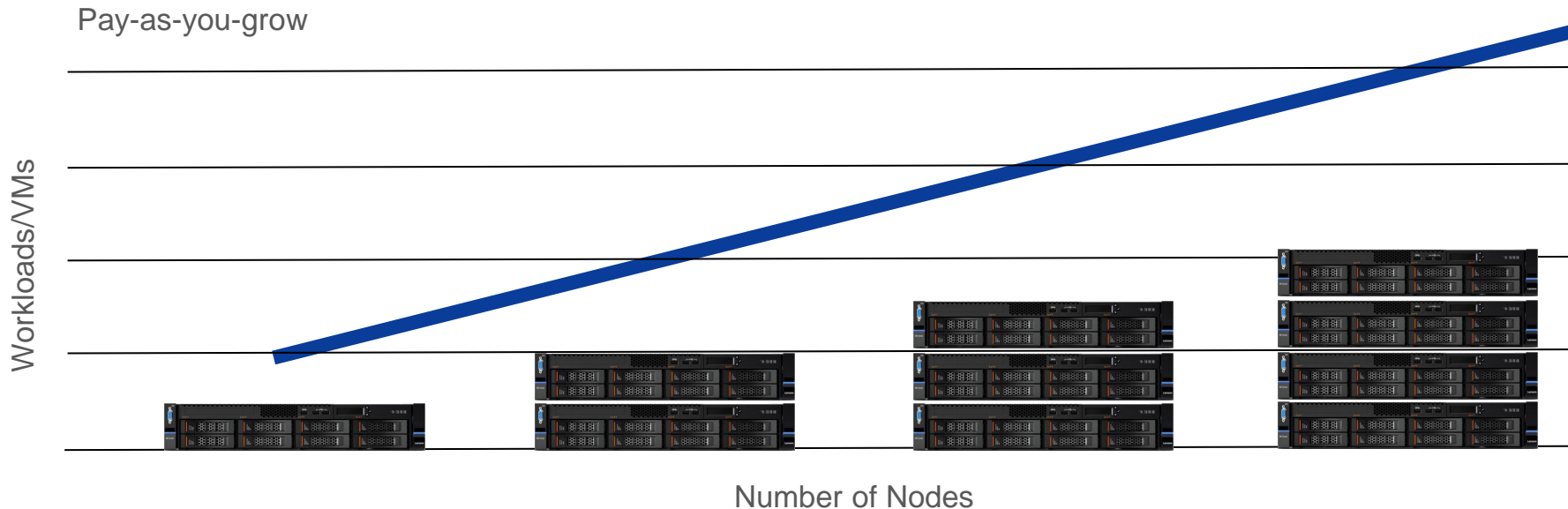
Simplified IT

- Eliminating IT silos
- Avoiding overprovisioning
- Simplifying datacenter operations



Helps reduce time of design, delivery and deployment by up to 75%

+ Linearly Scaling Datacenter Infrastructure



- Scale incrementally one node at a time
- Protect infrastructure investment by eliminating forklift upgrades
- Scale storage capacity & performance linearly

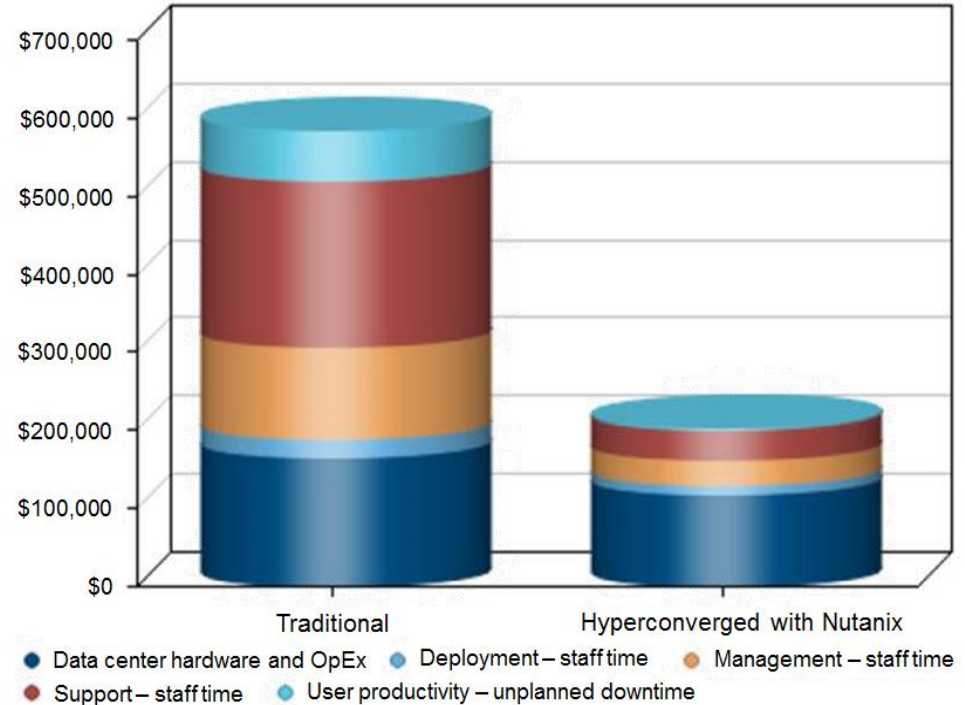
+ TCO Analysis: 1000 Employees

Five-year ROI: **699%**

Five-year discounted benefits: **\$1M+**

Five-year TCO savings: **65.3%**

Payback period: **4.8 months**



Based on IDC Tool “Quantifying the Business Value of Nutanix Solutions” Jan 4, 2016

Based on 1000 employees, Aerospace & defense Industry, 4 business critical applications, 2TB of storage, 4 IT staff members

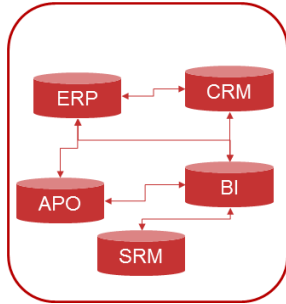


Transitioning to SAP HANA in your time

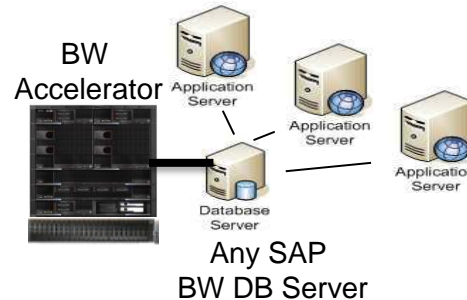
Lenovo™

+ Where is your organisation today?

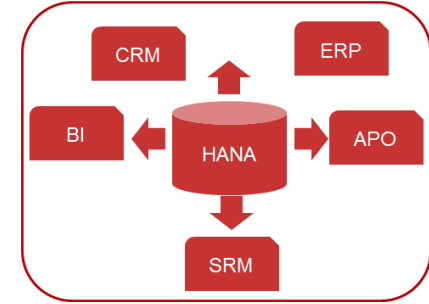
SAP Business Suite



SAP BW Accelerator



SAP HANA



From:

- Point-to-point integration
- One DB per application
- **Batch Enterprise**

Need for Real-time Analytics

- High data volumes
- Challenging response time SLAs
- Unpredictable types of queries

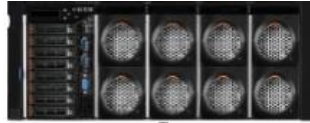
To:

- One DB per landscape
- Integration of OLAP & OLTP
- **Real Time Enterprise**

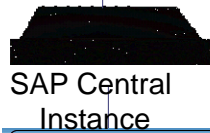


Consolidate your infrastructure

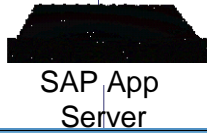
Client/Server



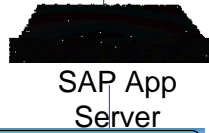
SAP Database



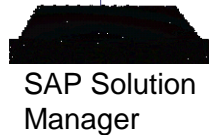
SAP Central Instance



SAP App Server



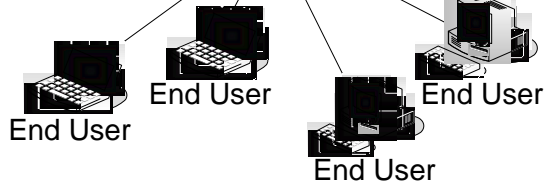
SAP App Server



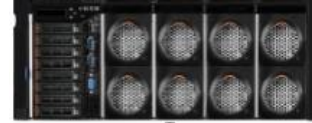
SAP Solution Manager



SAP System Landscape Directory



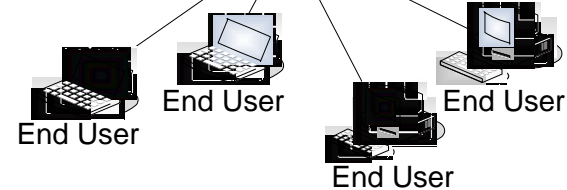
Consolidated / Virtualized



x3850 X6 + Hypervisor
SAP Central Instance
2 x SAP application server
SAP Solution Manager
SAP System Landscape Directory

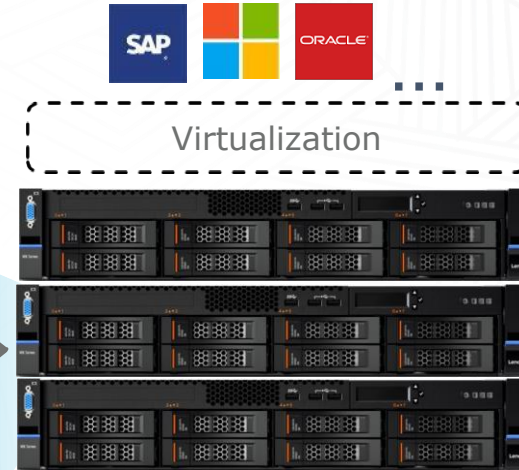
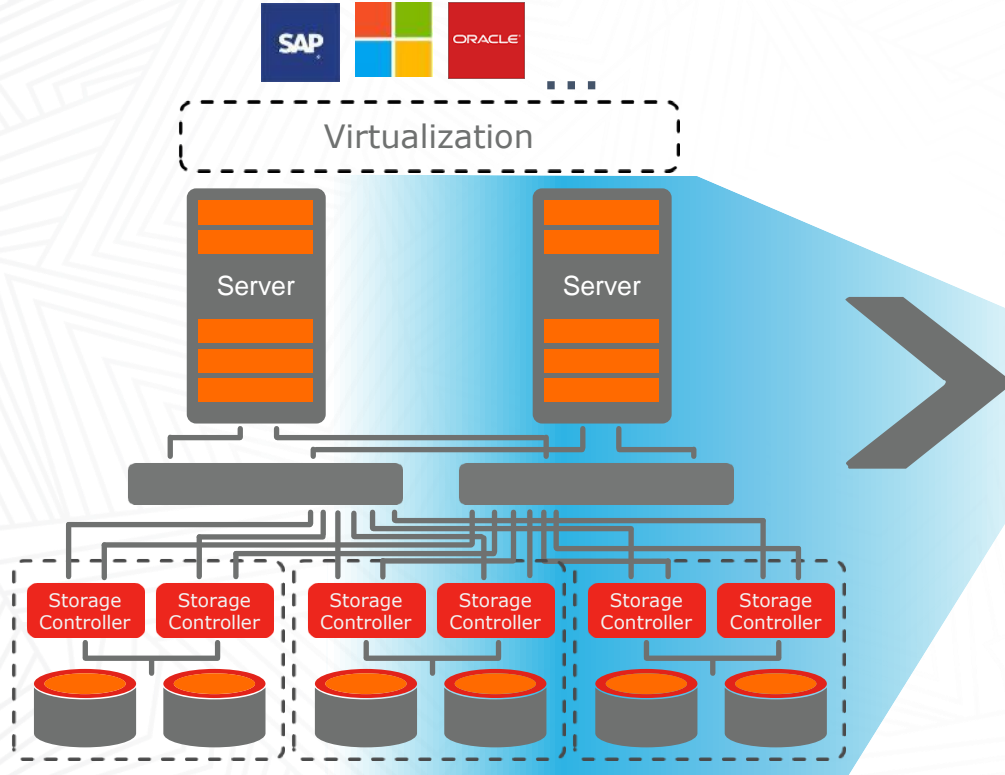


x3850 X6
Database



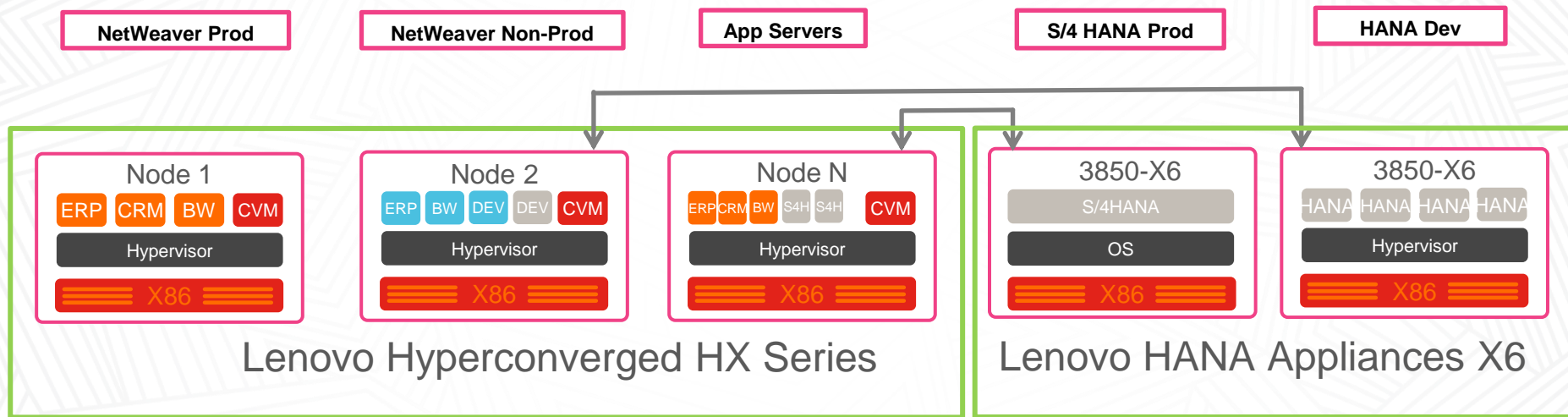
In development, test, QA, education systems, the database workloads are typically smaller and can benefit from virtualization

+ Cut operations cost and move to a Cloud Nutanix Architecture



Integrated, scale-out compute
and storage
with built-in virtualization
and management

+ Add HANA when you are ready



+ Lenovo - SAP HANA Scalability



Simple

- No SAN required because of a unique shared nothing architecture
- Expand database by adding nodes
- Single part number ordering for integrated server



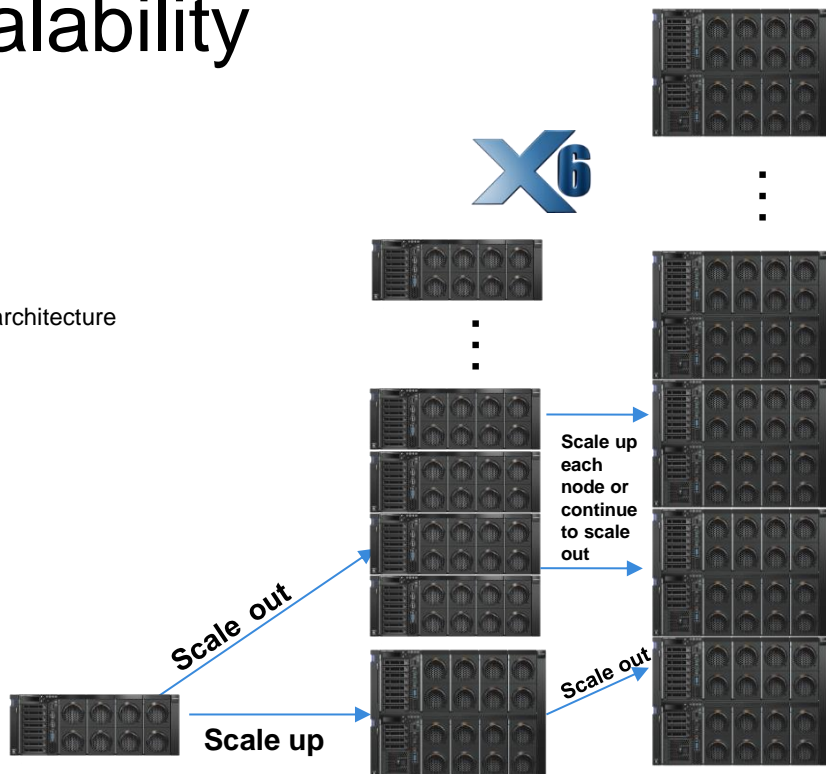
Seamless

- Highly Available (HA)
- Intelligent Cluster integrated packaging and assembly
- Installation and managed services



Scalable

- Scale out to 94 nodes and larger
- Scale from 128GB to 8TB production, 12TB non-production
- Certified by SAP



Maintain your initial investment with Scale Up / Scale Out options !

+ Customer scenarios

Current state	Future State	Recommended solutions
No HANA used	Consolidate and simplify existing SAP environment	Virtualise to larger servers Or Private Cloud Nutanix solution
No HANA used	Moving BW onto HANA – size of HANA?	<= 768GB Entry Level >128GB Enterprise Level
No HANA used	Moving Business Suite onto HANA and/or S/4HANA	<= 768GB Entry Level >128GB Enterprise appliance
Using HANA for BW	Consolidate old BW infrastructure	Enterprise appliance
Using HANA for BW	Consolidate old BW infrastructure and add S/4HANA	Enterprise appliance
Using HANA for Business Suite or S/4HANA	Adding BW	Enterprise appliance

Note:

1. HANA consolidates existing Databases from 8-10 times
2. Lenovo Enterprise appliances are in chassis upgradeable



Conclusions

Lenovo™

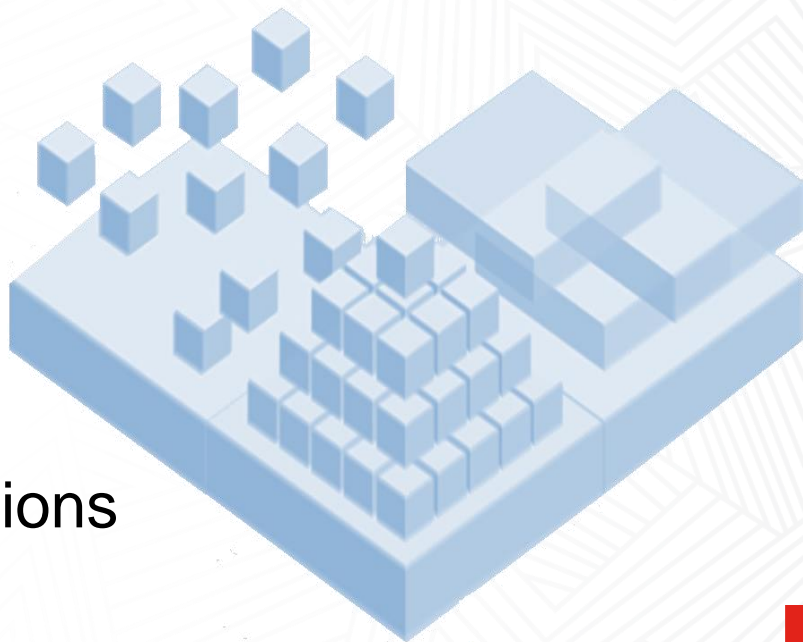
+ Traditional versus HANA infrastructure



• Cloud and Web-Scale Architecture for Private Cloud

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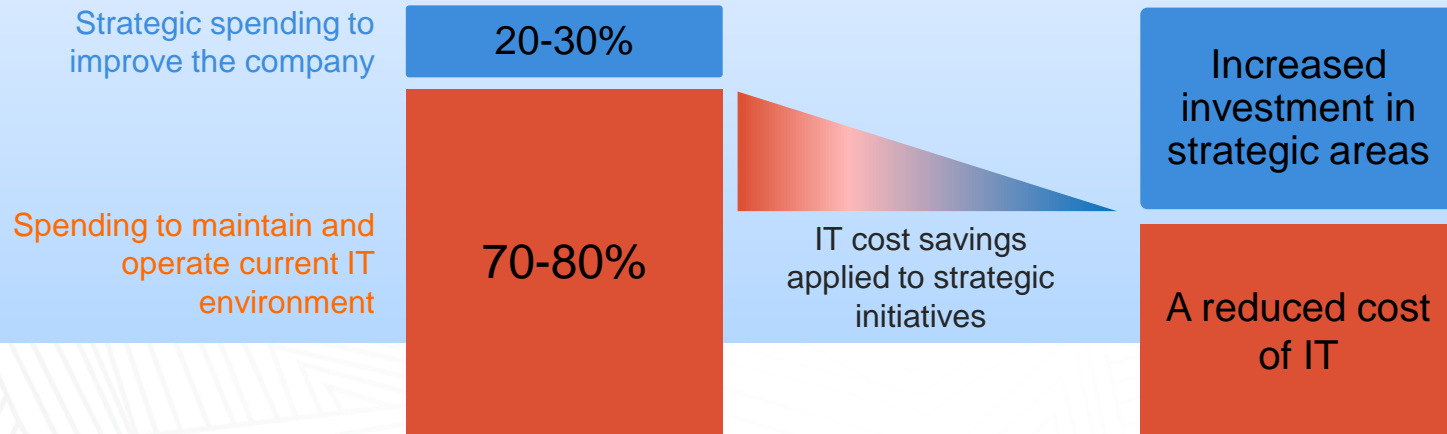


Helps reduce time of design, delivery and deployment by up to 75%

+ IT Cost Savings Can Fuel Business Growth

Spending Reality

Growth Opportunities



The real **value** of IT is to deliver services that enable business growth...

+ Enter to win!



“

thanks.

Lenovo™