common Romandie

L'association romande des utilisateurs de matériels, logiciels et services IBM

Data retention et les nouveautés pour la sécurisation des données
Lausanne, Switzerland – Hôtel de la Paix – 23 Novembre 2017

IT & Storage
An IBM point of view

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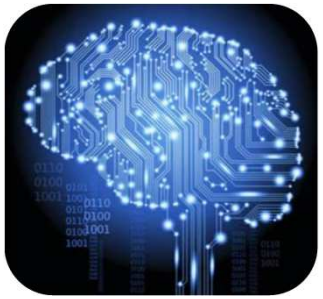
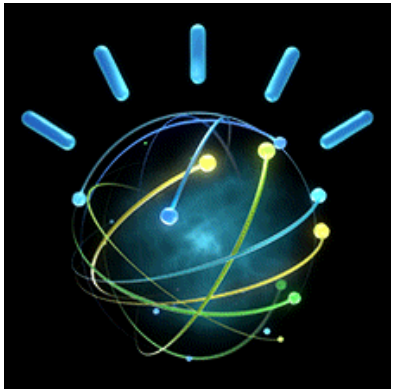
IBM /storage | IBM PartnerWorld /partnerworld | YouTube /IBMStorage | /IBMStorage | /groups/37153201060

Abstract

- Disruptive technologies like **Cognitive**, **Flash**, **Software Defined** and **Cloud** are changing the way enterprises are consuming, buying and managing their IT and Storage
- To remain competitive, customers seek technology breakthroughs and are shifting to new consumption models like SaaS, Rental / Lease and Pay per Use
- From a financial standpoint, enterprises move from Capex to Opex, a more flexible approach with less impact on their cash flow
- From a technical standpoint, IT departments (visible and invisible) are pressed to commoditize their HW and to adopt global solutions to improve availability, reliability, performance and route to market while being more resilient
- This presentation is about the state of the market, possible improvements and solutions with an overarching solution to decrease your costs while being more agile & efficient





Watson's successful diagnosis rate for lung cancer is **90%**...

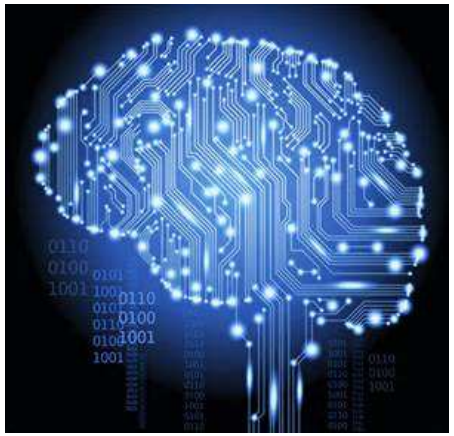
While for human doctors it is just **50%** [1]

[1] Samuel Nessbaum Wellpoint

IBM Storage and the Cognitive Era

You may be wondering:

- How does IBM Storage fit in IBM's Cognitive strategy?
- What is the IBM vision for data storage?
- And what is the IBM strategy for realizing this vision ?



VIRGINIA M. (GINNI) ROMETTY, CHAIRMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, IBM

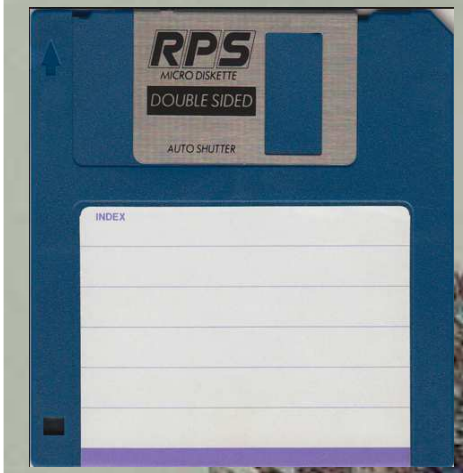
Data is the asset

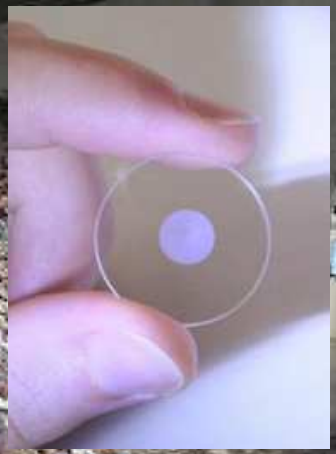
Cognitive is the goal

Hybrid cloud is the platform

Software defined storage is the architecture

Storage is the foundation





Sony (1987)

HD 3½" Floppy Disk 1.44MB

Dimension	90x94x3 mm
Volume	25.38cm^3
Write speed	~60kB/sec
2016 price	18.95$ / 50pcs
price / unit	0.38$
Cost /GB	263$
1989 price / unit	3.90$
Cost/GB	2708$

SanDisk (2013)

Wireless Flash Stick 200GB

Dimension	77x19x11 mm
Volume	16.1cm^3
Write speed	~15MB/sec
2016 price / unit	95$
Cost/GB	.48$

1 stick
= 138'889 floppies
= 3.525m^3 of floppies
writes 224x faster
costs 548x less per GB

200GB on 1989 floppies = 5.4M$

5D Glass Storage (2016)

WORM 360TB

Dimension	2mm d=6mm
Volume	0.05cm^3

1 5D disk
= 250'000'000 floppies
= 6'345m^3 of floppies (cube 18m*18m*18m)

360TB on 1989 floppies = 9.7B$

Decimal		
Value		Metric
1000	kB	kilobyte
1000^2	MB	megabyte
1000^3	GB	gigabyte
1000^4	TB	terabyte
1000^5	PB	petabyte
1000^6	EB	exabyte
1000^7	ZB	zettabyte
1000^8	YB	yottabyte

Market Trends

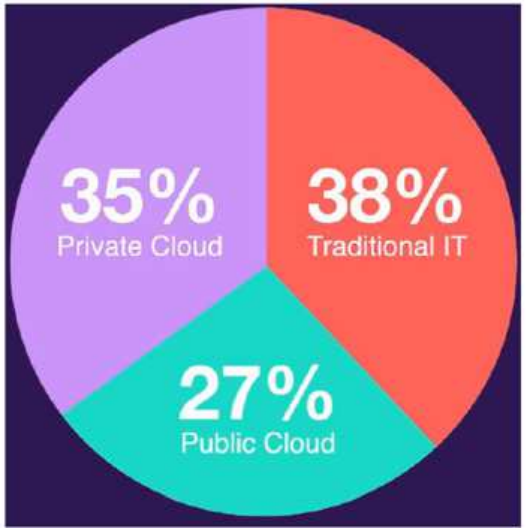
- The Storage World is moving to Flash and Cloud
- In 2019, 71% of the 420+ Exabyte shipped capacity will be in Clouds *
- Pay per usage is becoming widespread

IDC Futurescape Worldwide Datacenter
2017 Prediction #3:
Pay-As-You-Go/Use Models Will Account for 50% of On-Premise and Off-Premise Physical IT and Datacenter Asset Spending by 2018

*: Source: IDC

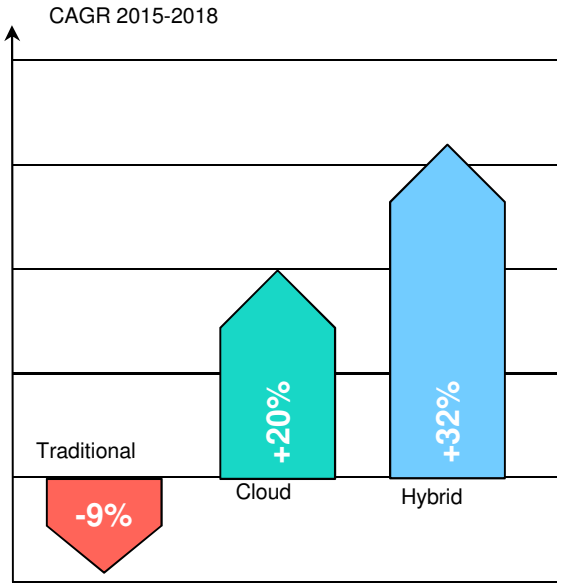
Hybrid Cloud is the new standard

2017-2018 expected blend of infrastructure among hybrid implementers



IBM a leader in Hybrid Cloud

IBM a leader in Private Cloud Software Suites, Hybrid Cloud Management

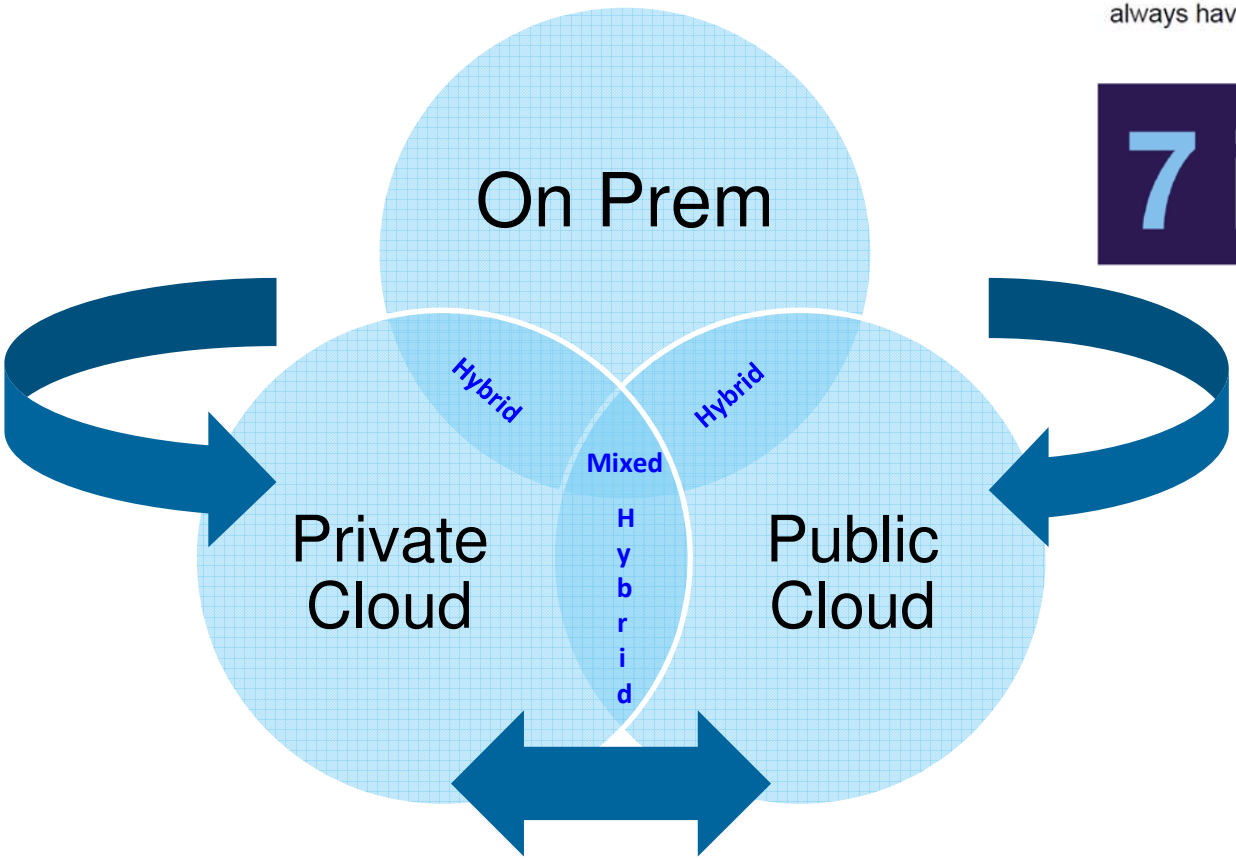


Source: "Growing up Hybrid" IBM Center for Applied Insights, 2016
Based on survey of 500 IT decision makers worldwide who are blending traditional and cloud infrastructures

What is your enterprise looking like ?

IT decision makers report they will always have a blend of Traditional IT and Cloud

7 in 10



Market opportunity *

Category	Solutions	Opportunity (2016 / CAGR 15-19)
High Growth	**All-Flash Arrays**	**$4.2B / 28%**
	SW Defined Storage	**$0.9B / 21%**
	Software Defined Compute	**$1B / 9%**
	Converged Infrastructure	**10.4B / 17%**
	Object Storage	**$20B / 8.7%**
Core Growth	**Data Protection Software**	**$6B / 5%**
	Midrange Systems	**$15B / 4%**
Core Optimize	**High-End Systems**	**$7B / -2%**
	Tape	**$1B / -5%**

*: Source IDC

Economics of IT Challenges and Optimization

EXISTING DATA ENVIRONMENT

DEVICE DEFINED – HW + "Device Specific" SW

TOGETHER FROM SAME VENDOR

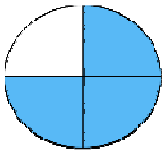
DEVICE BUYING CYCLE
ACQUIRE / UPGRADE / REPLACE

NEXT GENERATION FROM SAME VENDOR
NEW HW + NEW Device Specific SW LICENSES

DATA OPTIMIZATION IN EXISTING DISK?

OPTIMIZE DATA

ON ALL EXISTING
HW DEVICES



BEFORE MIGRATING TO FLASH

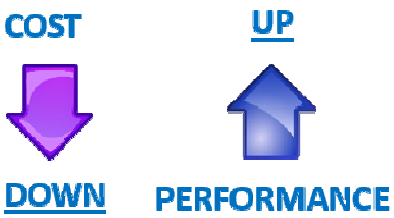
COST / PERFORMANCE DILEMMA

EFFORTS TO REDUCE COST DECREASES PERFORMANCE

VIRTUALIZATION NOT ENTERPRISE WIDE
& LIMITED BY DEVICES

UPGRADES MORE FREQUENT
NEW HW + NEW SW TOGETHER

GROWING BUDGET CONCERN



OTHER COSTS

SPACE / POWER

MAINTENANCE

MANAGEMENT

DOWNSTREAM DATA PROCESSES
COPIES / BACKUP

FUTURE HW Requirements

CUT COSTS

1/2 2/3 3/4

Economics of IT Optimization: Opportunities

Data Economics

Focusing on Data and **not Devices**, identifying Opportunities throughout the Enterprise to **Optimize data**, storage systems, computing platforms and IT processes.

Benefits

This allows **immediate**, **significant savings to invest in IT Transformation Initiatives**, while preserving or improving performance, availability and reliability."

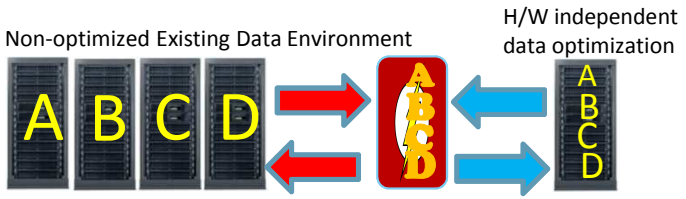
Opportunities for Savings

- Existing Data Environment
- Data migration to Flash
- Downstream data processes
- Future Hardware requirements
- Big Data / Objects / IoT
- Dev Ops / Copy data management
- Compute, converged, cloud & AI

Economics of Enterprise IT Optimization

Data migration to Flash

- Optimization “lives” with the data – No re-inflation!



Data reduction **in Flash device only**:	
Migrate to Flash	Achieve data reduction in Flash device only
Copy or cascade data back to Disk	**Data “Re-inflates” & ROI is lost**
Re-claimed physical storage	Lost when data re-inflates
Clients forced to retain old Disks	PLUS the cost of new Flash

Hardware independent data optimization :	
Migrate to Flash	Optimization “lives” with Data outside devices
Copy or cascade back to Disk	**No Data re-inflation**
Reclaim / repurpose assets	Remove older arrays from production
Data is optimized on existing Disk	Exponential savings immediately

Economics of Enterprise IT Optimization

Data migration to Flash

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Existing Data Environment

- Reduce effective costs with hardware independent data optimization

Economics of Enterprise IT Optimization

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Existing Data Environment

- Reduce effective costs with hardware independent data optimization

Downstream data processes & Future HW - Data optimization retained

- Cut space, power, maintenance & management by ½ to ¾

Original

Economics of Enterprise IT Optimization

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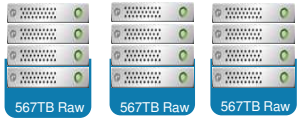
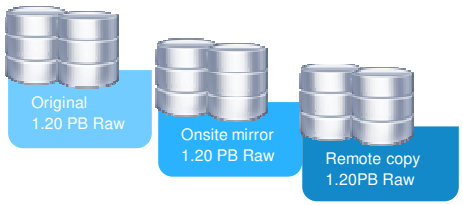
Objects & IoT - Reduce cost / Increase reliability
"Data dispersal" - 70% less TCO / Nine 9's reliability

Dispersed Object Storage





RAID 6 + Replication =
Broken Model for Objects and IoT

Economics of Enterprise IT Optimization

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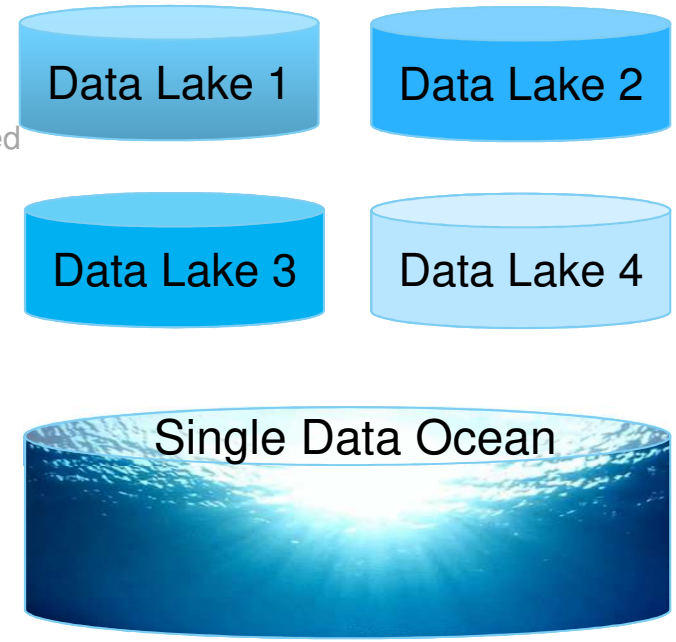
Leverage Big Data for better analytics
- Scale from data "lakes" to data "oceans"



Economics of Enterprise IT Optimization

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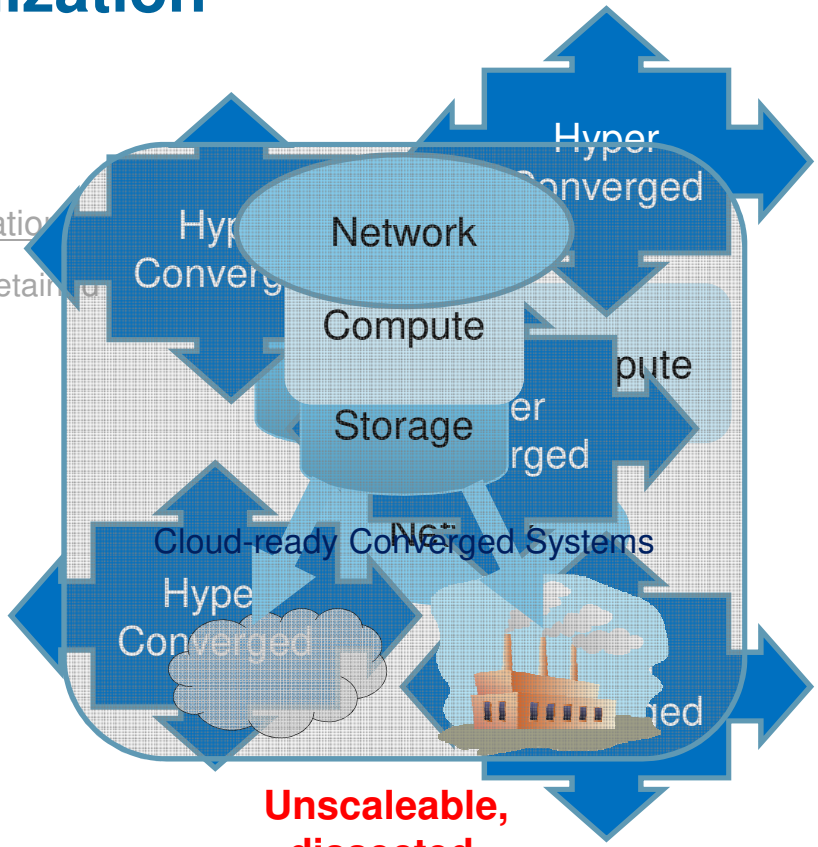
Hyper-converged appliances
- Convergence with cloud-capability and hardware independent data optimization



Unscaleable, dissected enterprise

Economics of Enterprise IT Optimization

Data migration to Flash
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Leverage Big Data for better analytics
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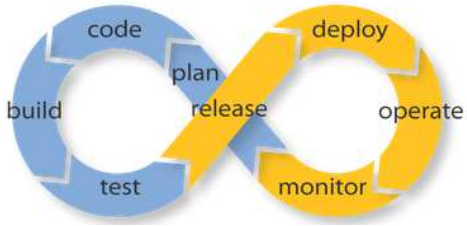
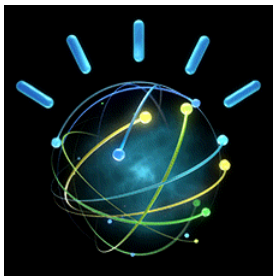
Hyper-converged appliances
- Convergence with cloud-capability and hardware independent data optimization

Improving Cluster Utilization
- Intelligent resource compute sharing

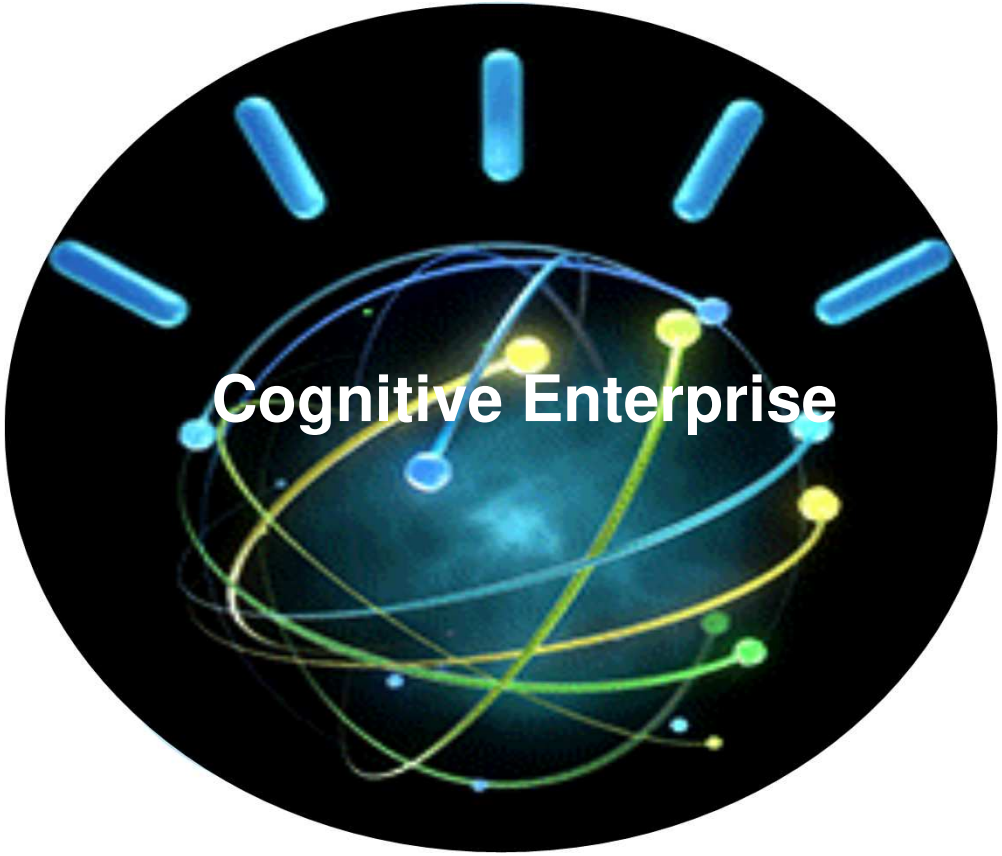
Speed Dev Ops time to Production
- Automate allocation, testing & cleanup

Introduce Cognitive for Competitive Advantage





What your enterprise s*hould* look like



Economics of IT Optimization: Outcomes

Data Economics

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Benefits

This allows **immediate**, **significant savings to invest in IT Transformation Initiatives**, while preserving or improving performance, availability and reliability."

IBM can help in all of these and more…

- Existing Data Environment
- Data migration to Flash
- Downstream data processes
- Future Hardware requirements
- Big Data / Objects / IoT
- Dev Ops / Copy data management
- Compute, converged, cloud & AI

Enterprise: Optimized!

Vendor Neutral Hardware Independent DATA OPTIMIZATION

Not "All or nothing".
Deploy over **any part** of your environment

Optimize data on **all Devices**

Migrate Disk to Flash &
Manage **with same Software**

Optimization "lives" with data **eliminating "Re-inflation"**

Enterprise: Optimized!

Vendor Neutral Hardware Independent DATA OPTIMIZATION

Effective costs delivers **exponential savings**

COST

DOWN

Save now to **invest earlier in transformation**

SAVE → INVEST → TRANSFORM

Improve Reliability, Efficiency, Availability and Performance

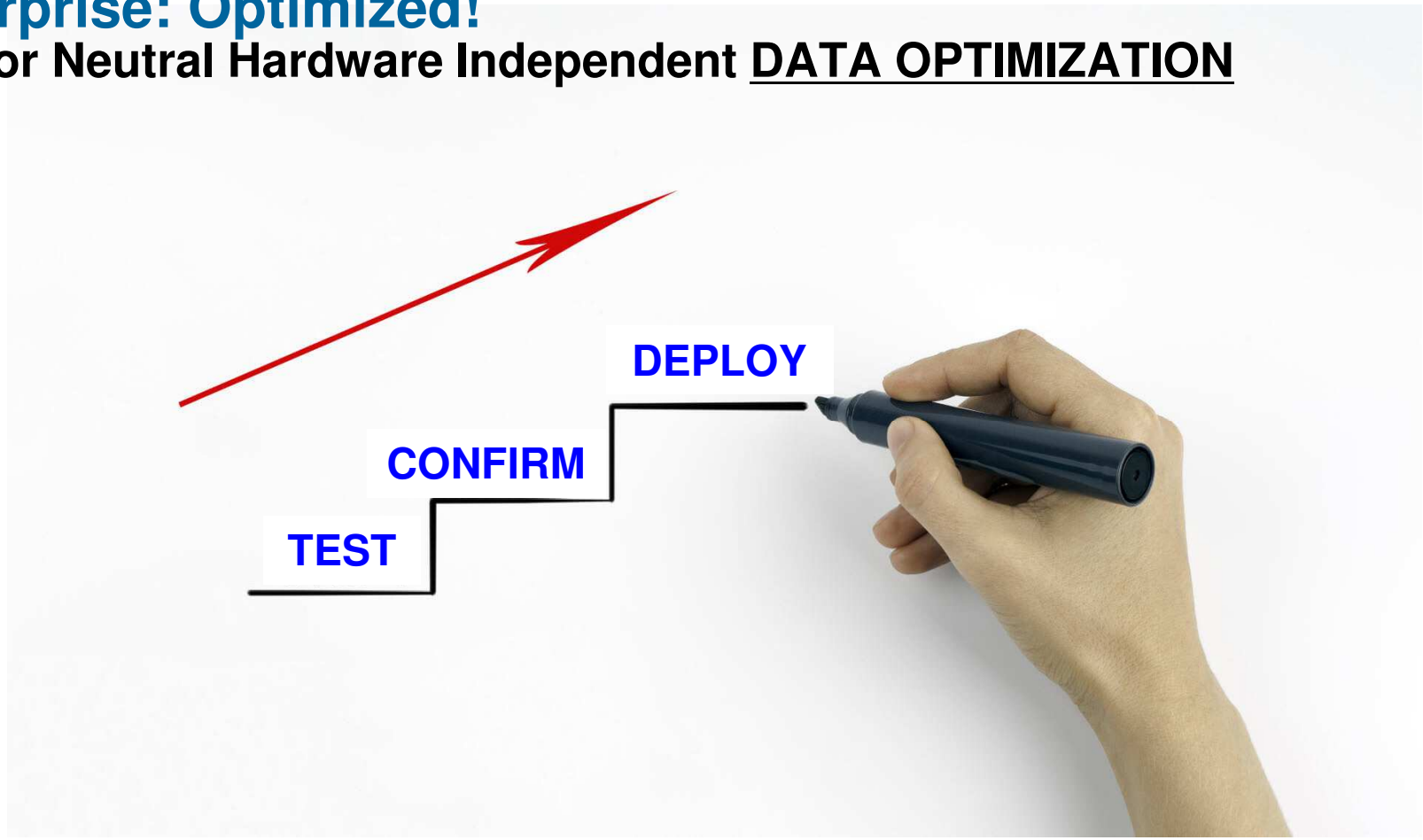
UP

PERFORMANCE

Pay only once for perpetual Software License

Enterprise: Optimized!

Vendor Neutral Hardware Independent DATA OPTIMIZATION



Enterprise: Optimized!
IBM Unique Values

Hardware Independent Optimization "Lives with the Data" and is not limited by Device

Focus on the *Content* not the *Container*

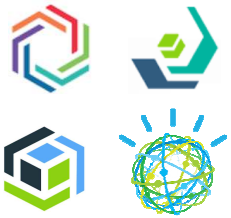
"Free the Data" from Devices – "Liberate the Client" from Vendor Captivity

Optimize Data Anywhere, Anytime, on Anything

Savings MULTIPLY as Data transitions through the Enterprise

Enterprise: Optimized!
IBM Unique Values

- **Broadest solutions portfolio**
  - Hardware from Flash to Tapes
  - 12 Cross Platform Softwares for Storage & Computing to Cognitive
  - **#1** in Software Defined *



- **Hardware Independancy**
  - Spectrum Virtualize (400+ devices from multiple vendors)
  - Spectrum Control (400+ devices from 13 vendors + SNIA devices)
  - Spectrum Protect (898 devices from 38 vendors)

HITACHI DATA SYSTEMS, ORACLE, DELL EMC, IBM, NetApp, Hewlett Packard Enterprise

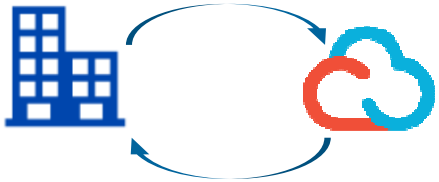
- **Licensing Flexibility**
  - Perpetual, Lease, As a Service, Rental, Pay by consumption
  - Unique Software Defined Storage Suite (8 solutions in 1)

CAPEX

Opex

1 TB D1K7XLL

- **Cloud Independant Solutions**
  - Private/On Prem, Public & Hybrid Clouds



*: Source IDC, since 2015

IBM Storage & SDI Portfolio

The Broadest Offering Available Today !

Software Defined Storage

Spectrum and Object Storage

IBM Spectrum Storage Suite
IBM Spectrum Control & Insights
IBM Spectrum Protect Auwau (Frontsafe) Cristie Avepoint Rocket
IBM Spectrum Protect Plus
IBM Spectrum Copy Data Management
IBM Spectrum Virtualize
IBM Spectrum Accelerate
IBM Spectrum Scale
IBM Spectrum Archive
IBM Cloud Object Storage

Software Defined Computing

Spectrum Computing

IBM Spectrum LSF family
IBM Spectrum Symphony
IBM Spectrum Conductor
IBM Spectrum Conductor with Spark

Integrated Infrastructure Solutions

CISCO IBM
VersaStack


PurePower


IBM Elastic Storage Server

Storage Systems

Tier 0 Acceleration


FlashSystem

Enterprise Storage Systems


DS8880


XIV


FlashSystem V9000


DeepFlash 150

Midrange & Entry Storage Systems


Storwize V7000 Unified


Storwize V7000


Storwize V5000


Storwize V3700

Tape and Virtual Tape Systems


Virtualization Engine TS7700


ProtecTIER Deduplication


LTO7 Tape Library and Automation


LTO7 Tape Drives for Enterprise Deployments

Introducing IBM Spectrum Protect Plus

IBM
Spectrum
Protect Plus

The new data protection offering from IBM

Pre-announcement: August 23, 2017

First public viewing: VMworld US 2017

General Availability (GA): November 10 2017

Primary use cases

- Data Protection for virtual machines, applications
- Disaster Recovery
- Data Reuse
  - Test/Dev, DevOps, Reporting, Analytics, etc…

See more info here

Merci !

IBM Storage

Leader in 2016 & 2017 (IDC and Gartner)
Named “leaders” in 8 products categories
#2 Storage company in the World
#1 in Software Defined Storage since 2015
#1 in Archiving, Object Storage and branded Tapes
#1 in Analytics