



# READY FOR ANY vForum2015

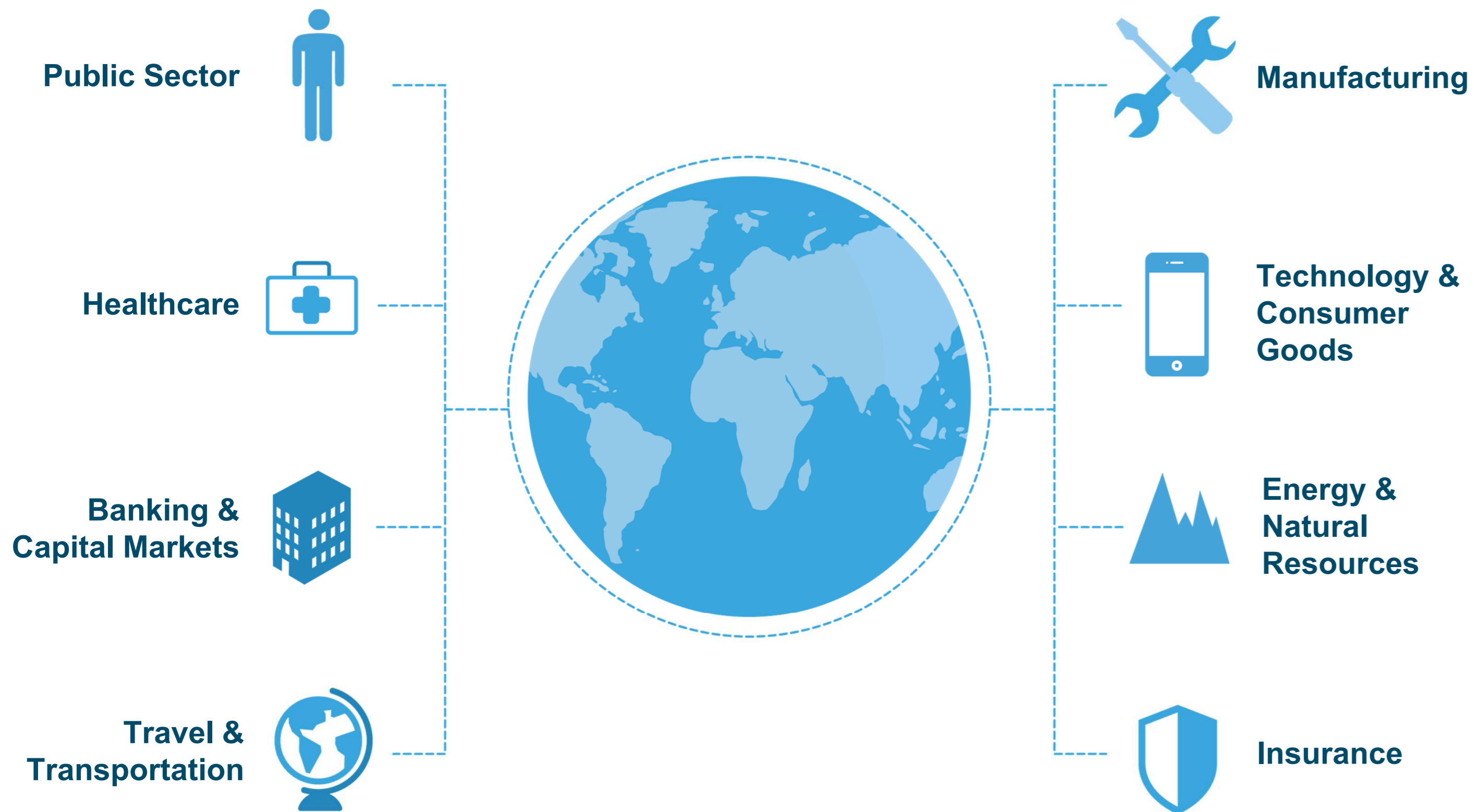
9 December 2015 | Taipei, Taiwan

## Virtualization.Next 敏捷迅速 掌握先機 - XtremIO

陳永恆  
EMC 資深技術顧問

# VIRTUALIZATION IS UBIQUITOUS

THE LAST FEW TIER-1 WORKLOADS ARE GETTING VIRTUALIZED TODAY



VIRTUALIZATION IS EVERYWHERE

All Markets

All Industry's

All Sectors

All Business's

# DAWNING OF A NEW ERA: VIRTUALIZATION.NEXT

## BENEFITS REACH FAR AND BEYOND

- **Self-service, automation & orchestrations with Private Clouds – *true App-as-a-Service***
- **Any time, anywhere, on-the-go access with Desktop Virtualization – *for every user and desktop workload***
- **It's the Application Economy – *agile DevOps is the new innovation engine***
- **WORKLOAD consolidation – *finally for Storage***



# VIRTUALIZATION.NEXT: THE COMMON THEME

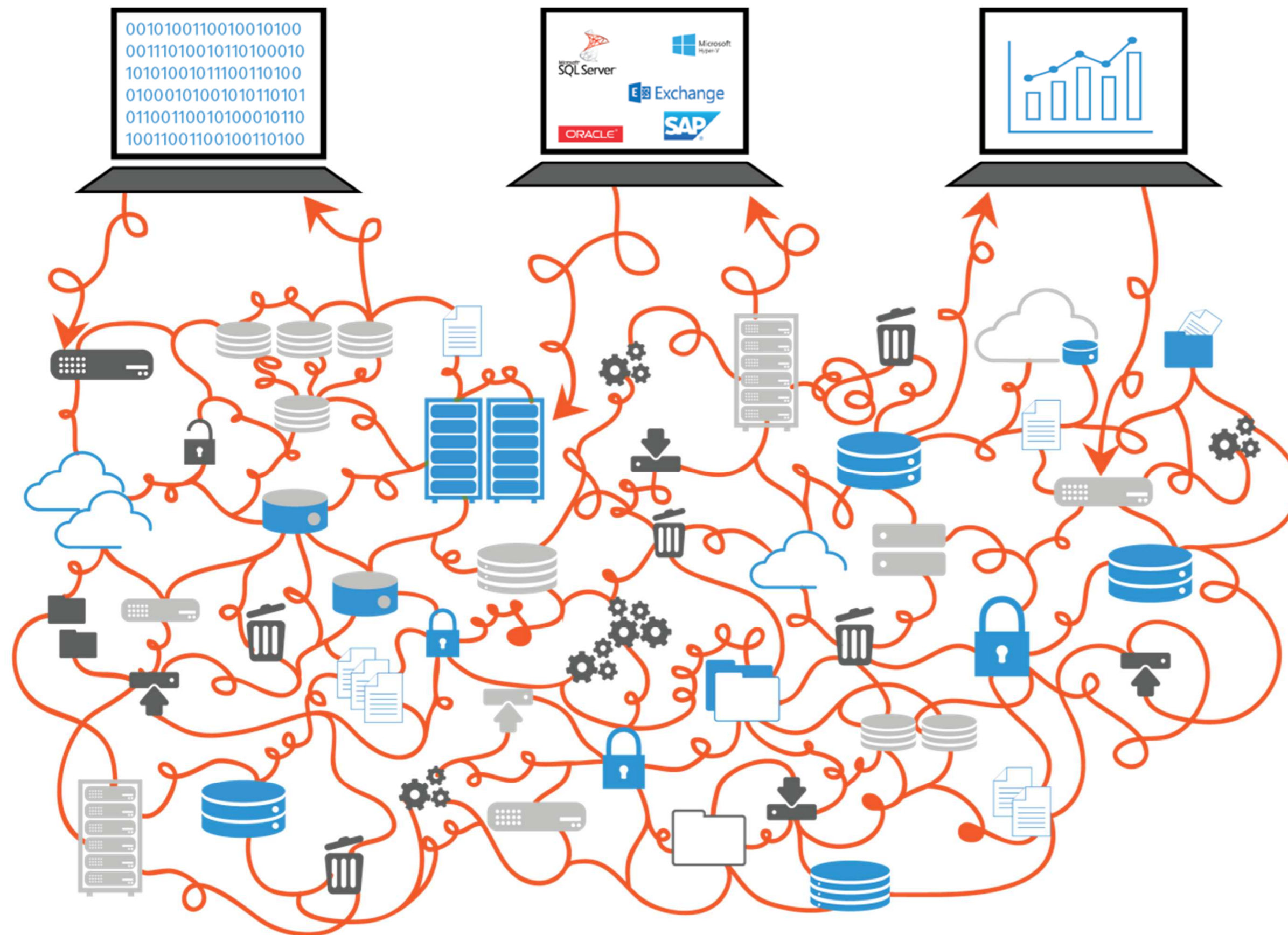
Thousands of VMs =  
I/O blender

Provisioning &  
Cloning new VMs

VMotion Operations

# IS YOUR STORAGE READY?

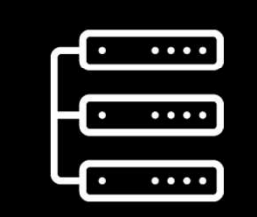
TODAY'S STORAGE SPRAWL IMPACTS INFRASTRUCTURE, OPERATIONS & BUSINESS



- **Infrastructure silos**
- **Rigid complex operations**
- **Slow business processes**
- **Data center operations playing catch up**

**ENABLING  
VIRTUALIZATION.NEXT:**

**THE XTREMIO STORY**



# EMC XTREMIO: LEADING BY ALL MEASURES

#1

>31% MARKET SHARE

>\$1B RUN-RATE

>1,500 CUSTOMERS

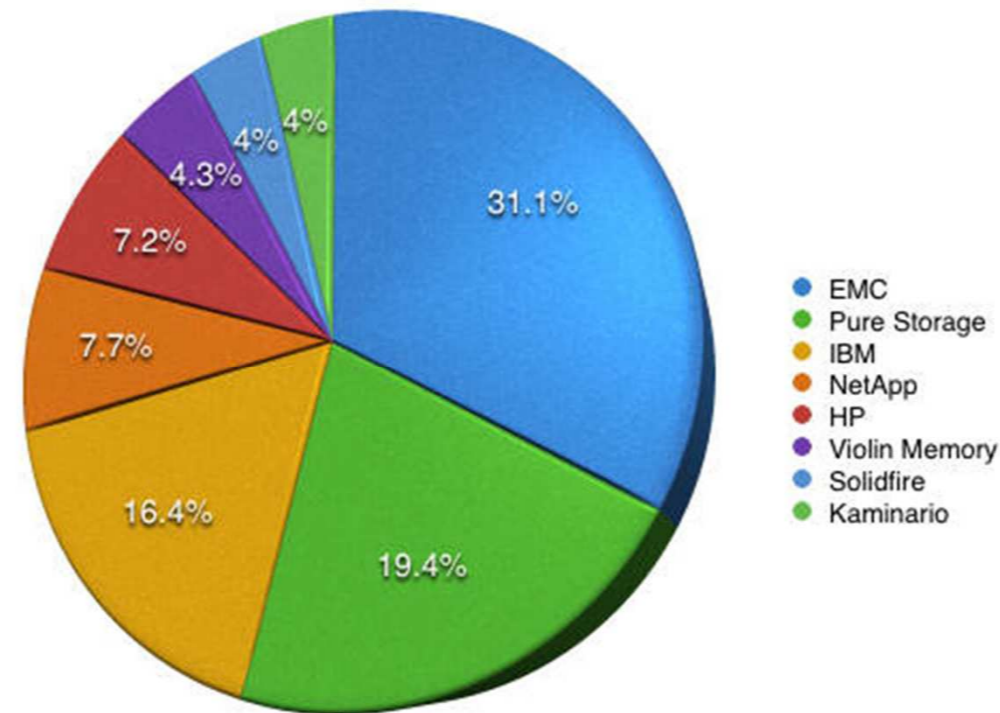
>40% FORTUNE 100

>GARTNER MAGIC QUADRANT LEADER

>99.999% RELIABILITY

## Gartner

SSA Worldwide Vendor Revenue  
% Share, 2014



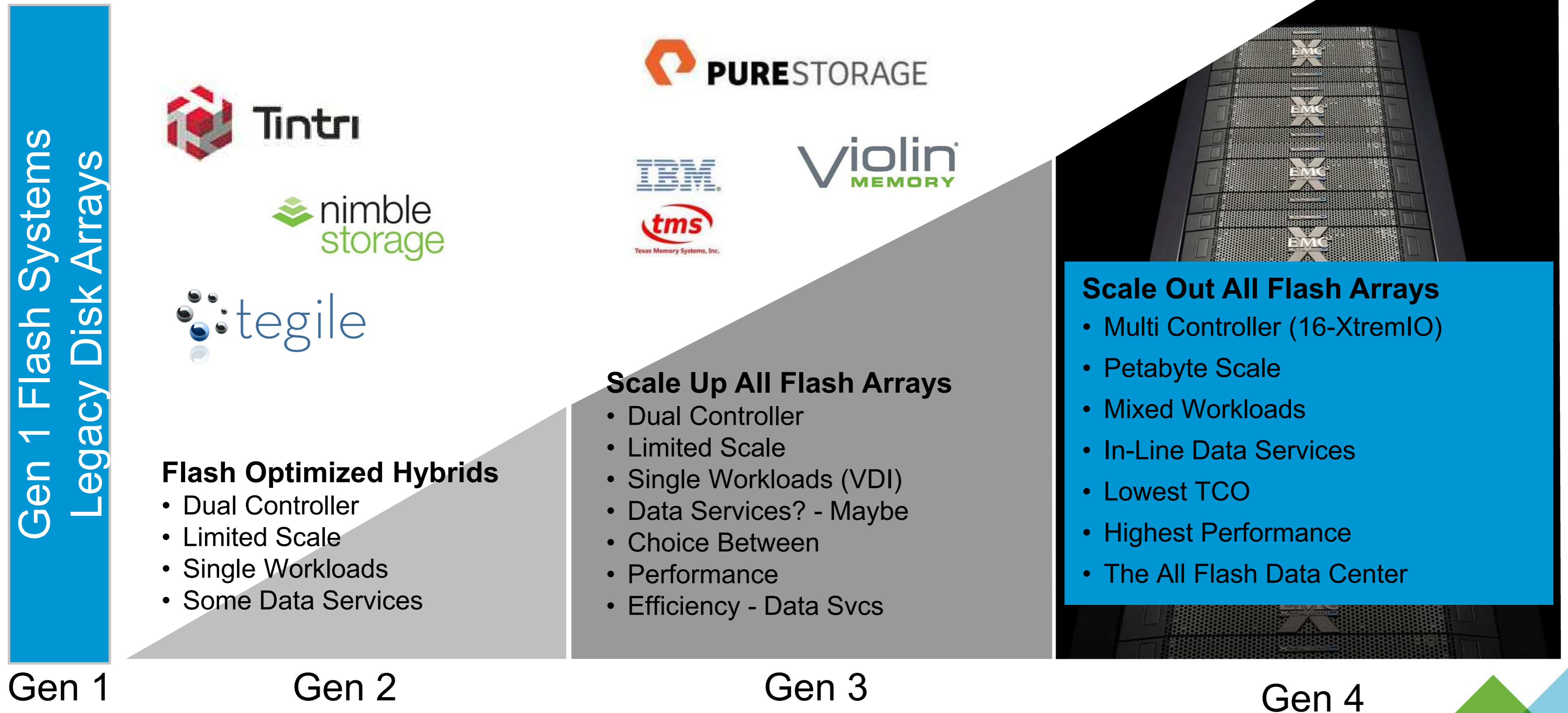
## IDC

Worldwide All-Flash Array  
Revenue by Vendor, 1H14

Vendor	Revenue (\$M)	Share(%)
EMC	112.3	23%
PureStorage	90.9	18%
IBM	82.9	17%
Netapp	45	9%
Solidfire	35.6	7%
Nimbus Data	34.3	7%
Other	95.3	19%
Total	496.3	100%

# THE EVOLUTION OF "FLASH" ARRAYS

## THE ANALYST VIEW



Gen 1

Gen 2

Gen 3

Gen 4

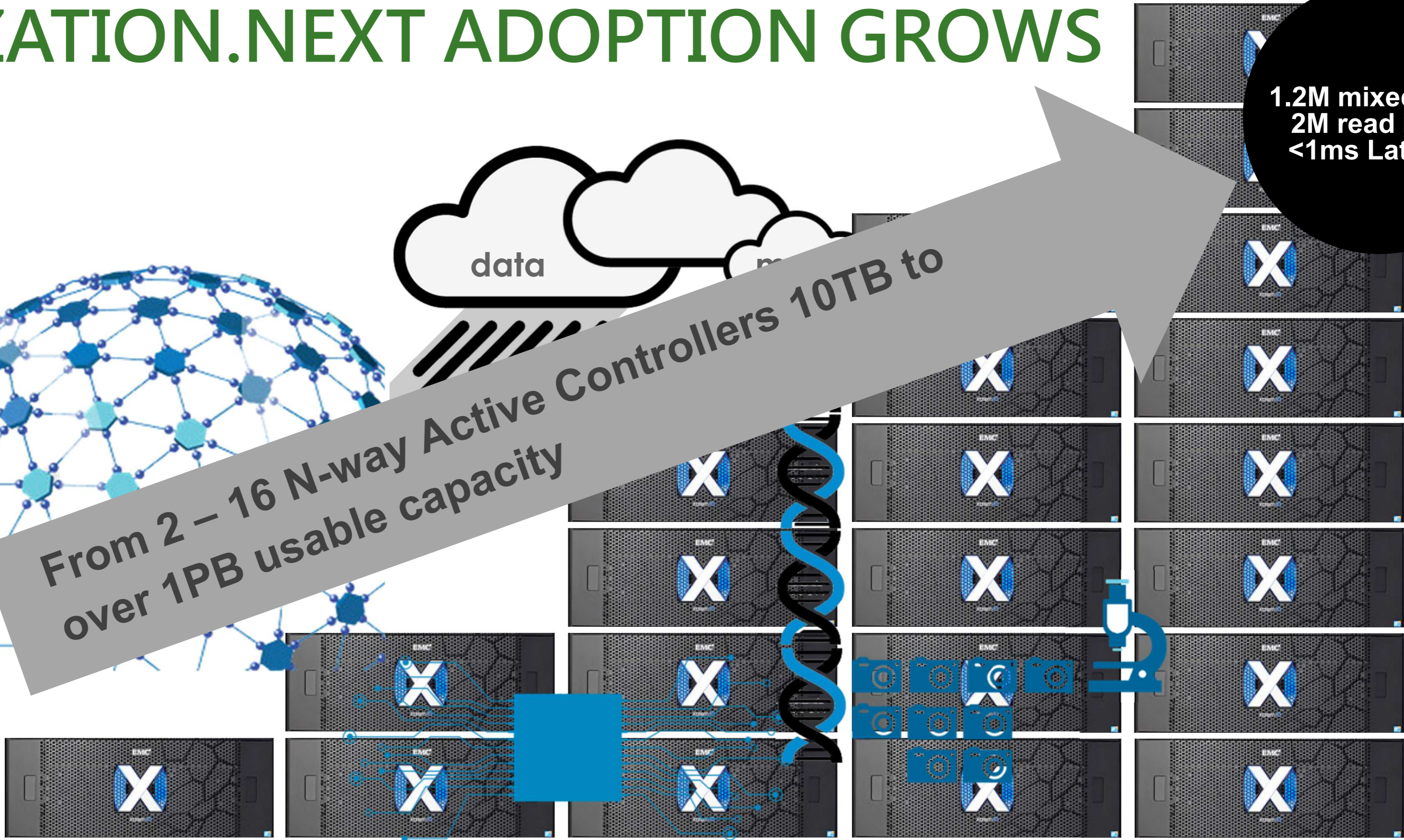


# SCALE NON-DISRUPTIVELY AS YOUR VIRTUALIZATION.NEXT ADOPTION GROWS

150K mixed IOPS  
250K read IOPS  
<1ms Latency

From 2 – 16 N-way Active Controllers 10TB to over 1PB usable capacity

1.2M mixed IOPS  
2M read IOPS  
<1ms Latency

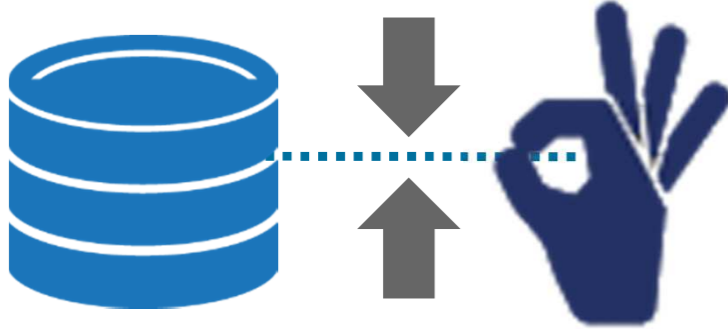


Scale-out Fabric Data & Metadata

Metadata is DNA of Data

# DRIVE DATA EFFICIENCY THROUGH ALWAYS-ON IN-MEMORY DATA SERVICES

**Always On Thin Provisioning**



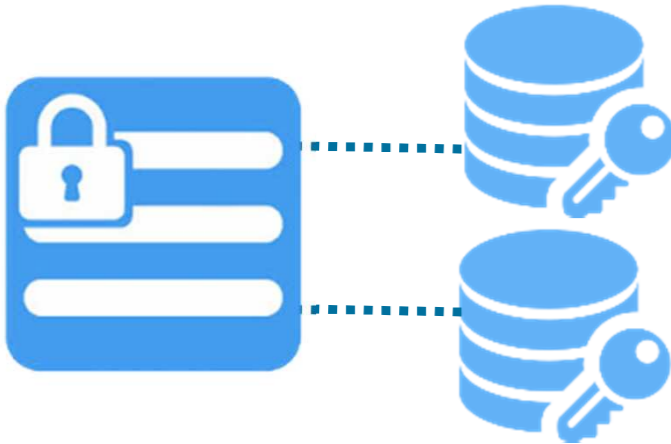
**Inline Data Deduplication**



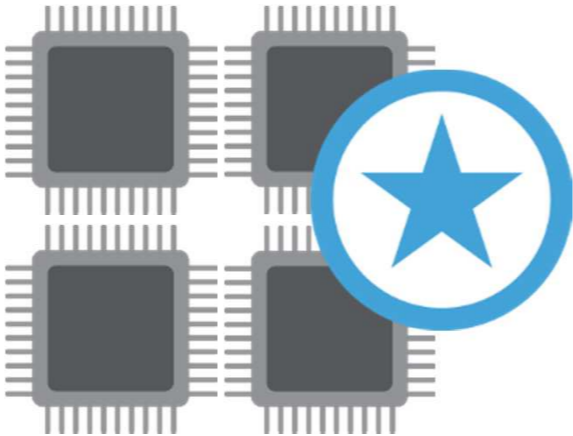
**Inline Data Compression**



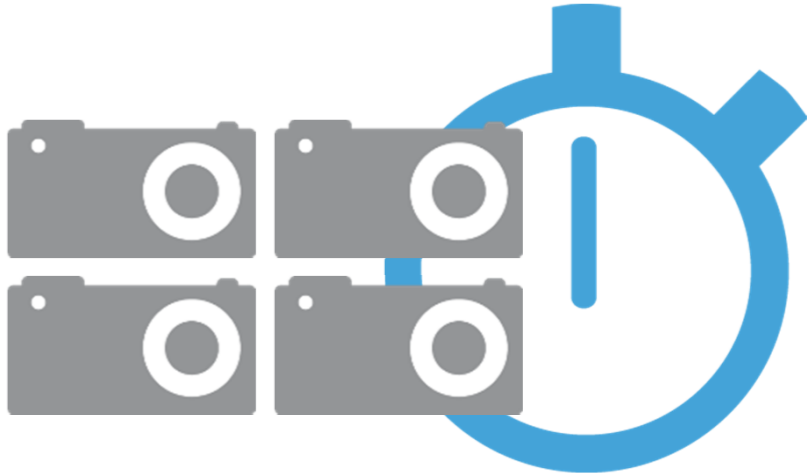
**Inline Data Encryption**



**Flash Optimized Data protection**



**Agile Copy Services**



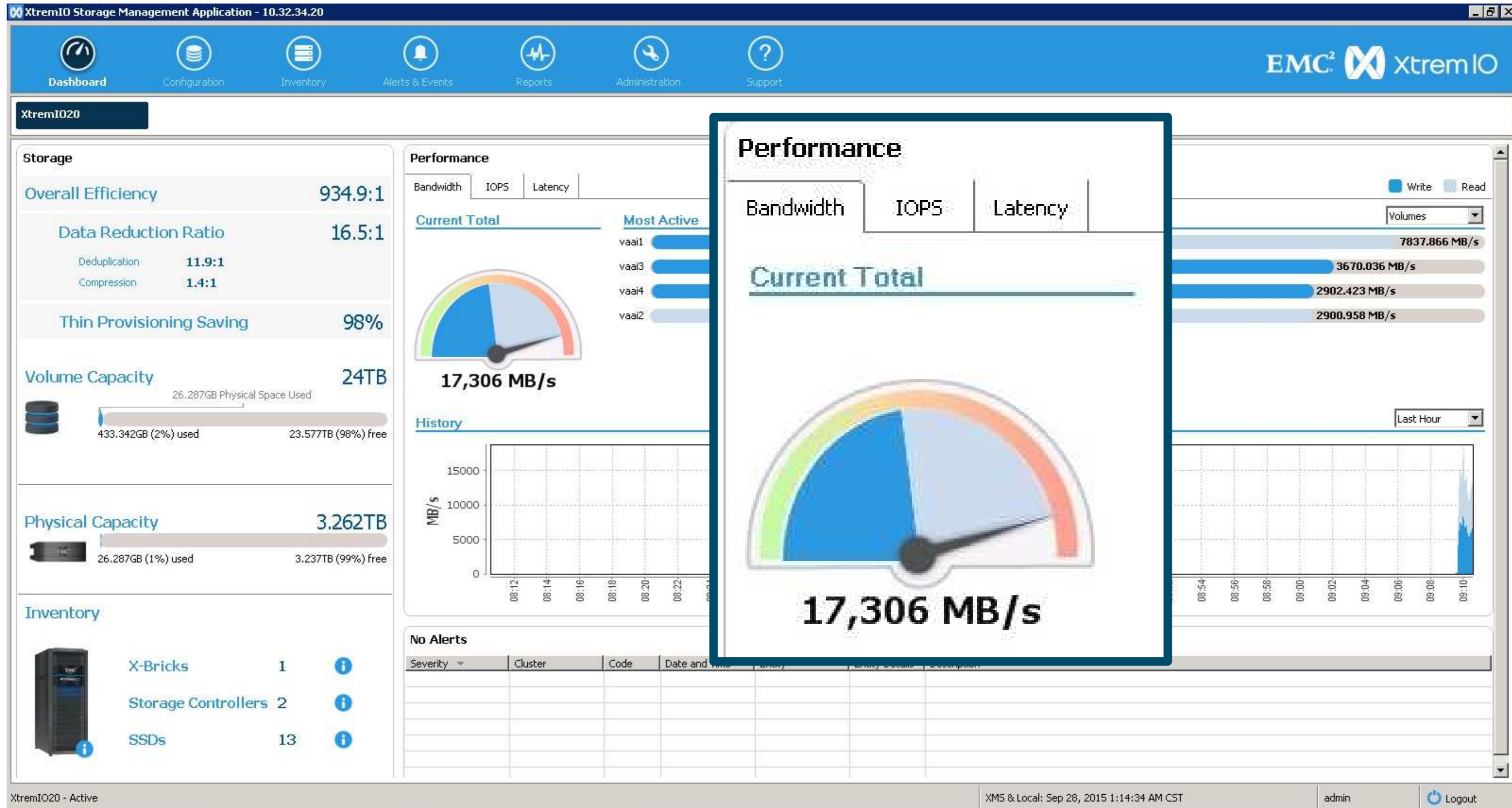
# XTREMIO PERFORMANCE AND SPACE EFFICIENT

CLONE 50VM \* 4



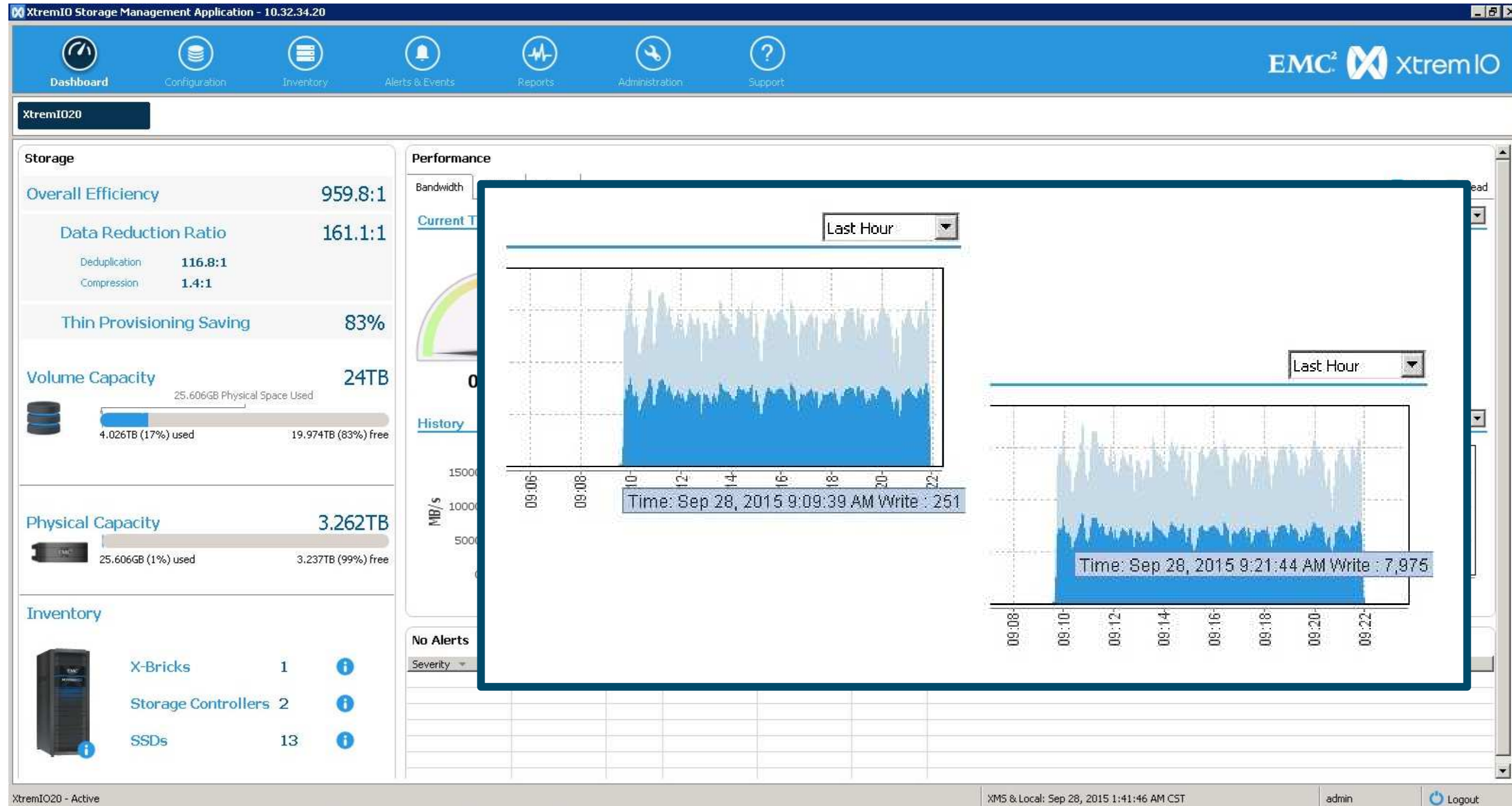
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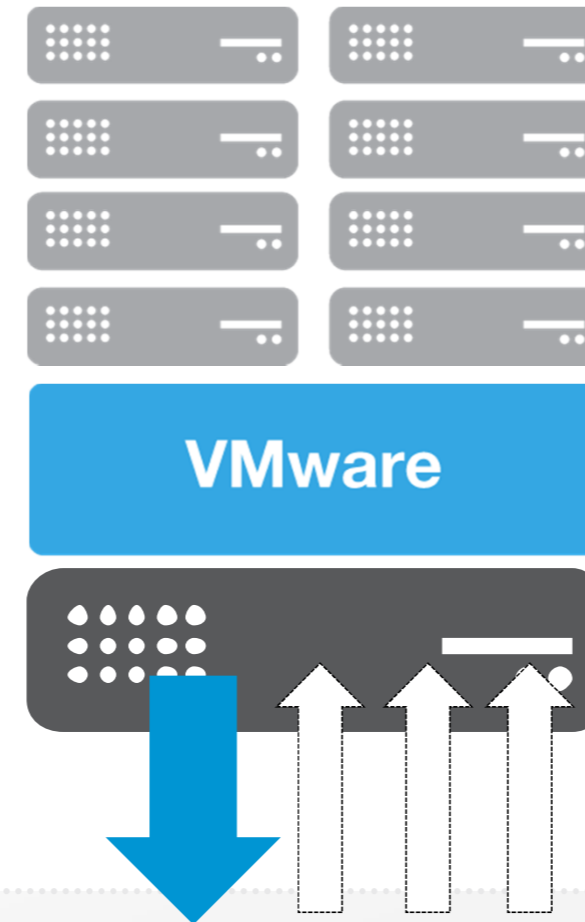
# ADVANCED VIRTUALIZATION PLATFORM INTEGRATION

**ZERO**

Wait-time  
VM Provisioning

Physical  
Block movement

**ZERO**



**1**

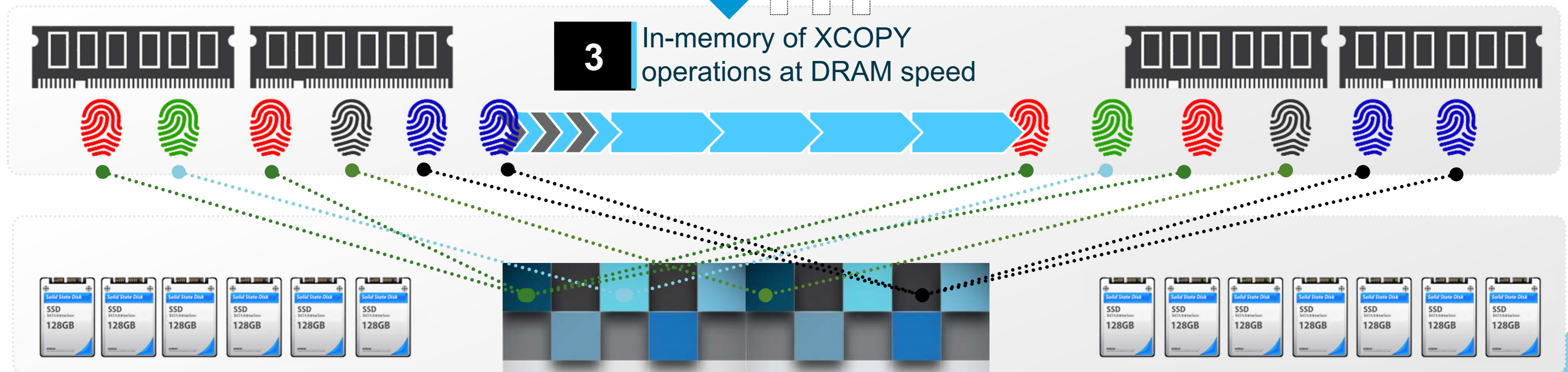
In-band interception of SCSI XCOPY commands issued by hypervisor

**2**

Immediate virtual response of XCopy operation up to Hypervisor

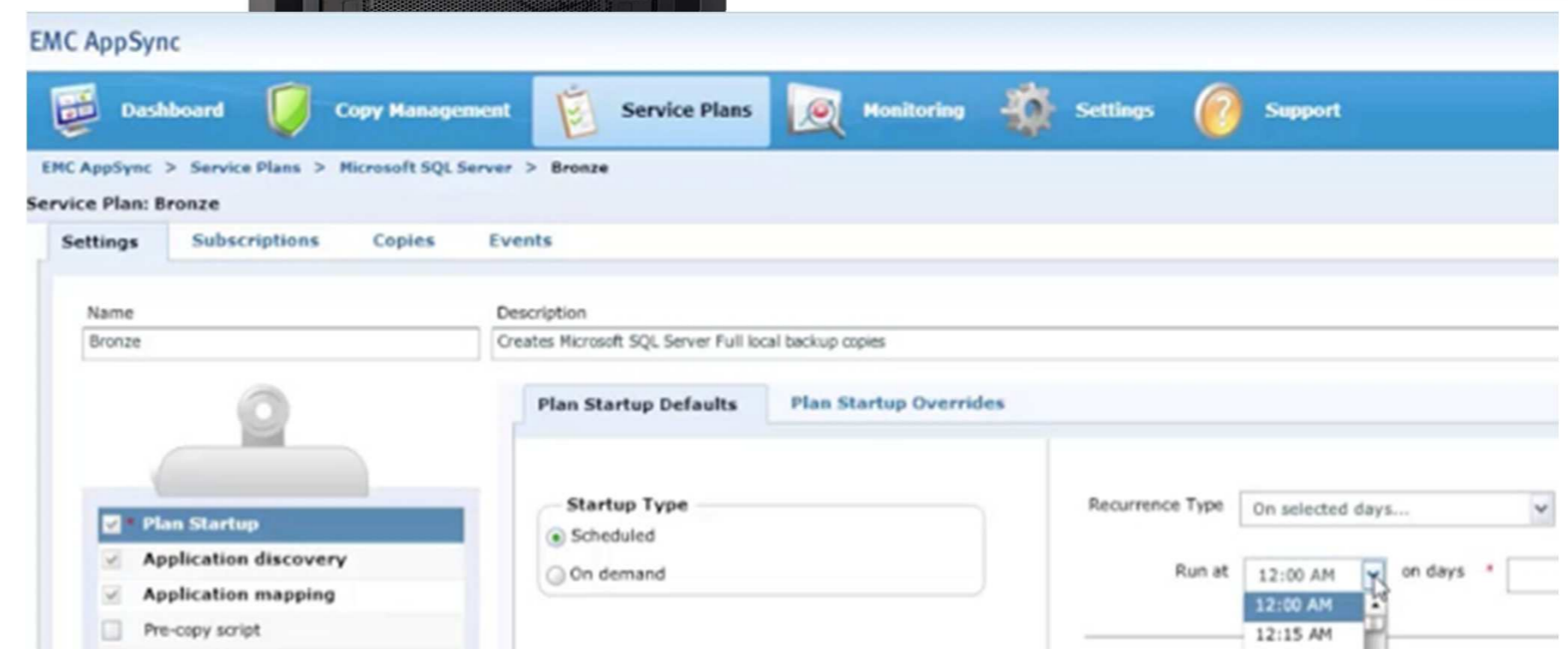
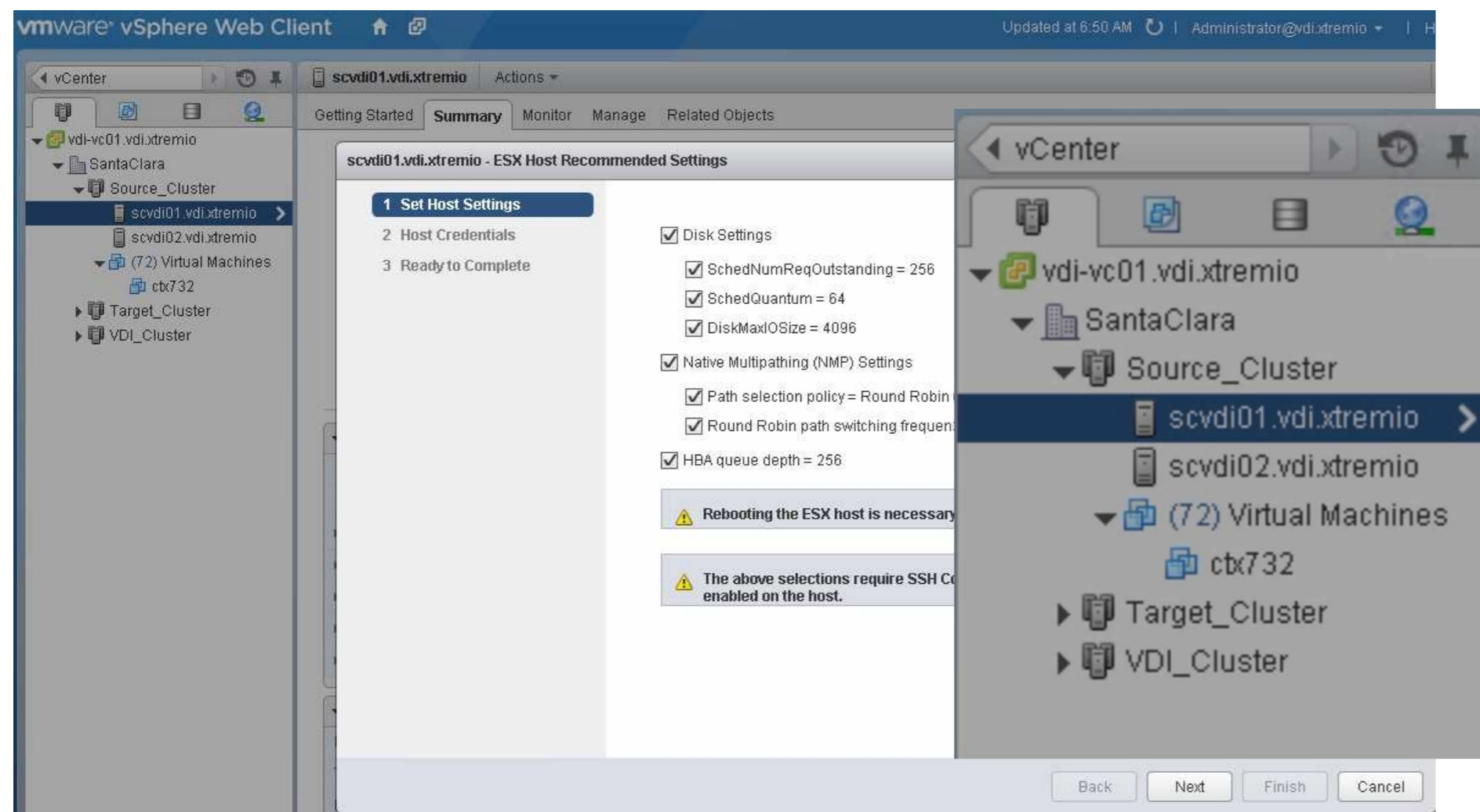
**3**

In-memory of XCOPY operations at DRAM speed



# EMPOWER APP ADMINS WITH SPACE-EFFICIENT APPLICATION AGILITY

- Provision, Manage and Automate from vCenter/Windows MMC
- App-consistent Copy Services with
  - Full scheduling & automation
  - Full orchestration of XtremIO snapshots





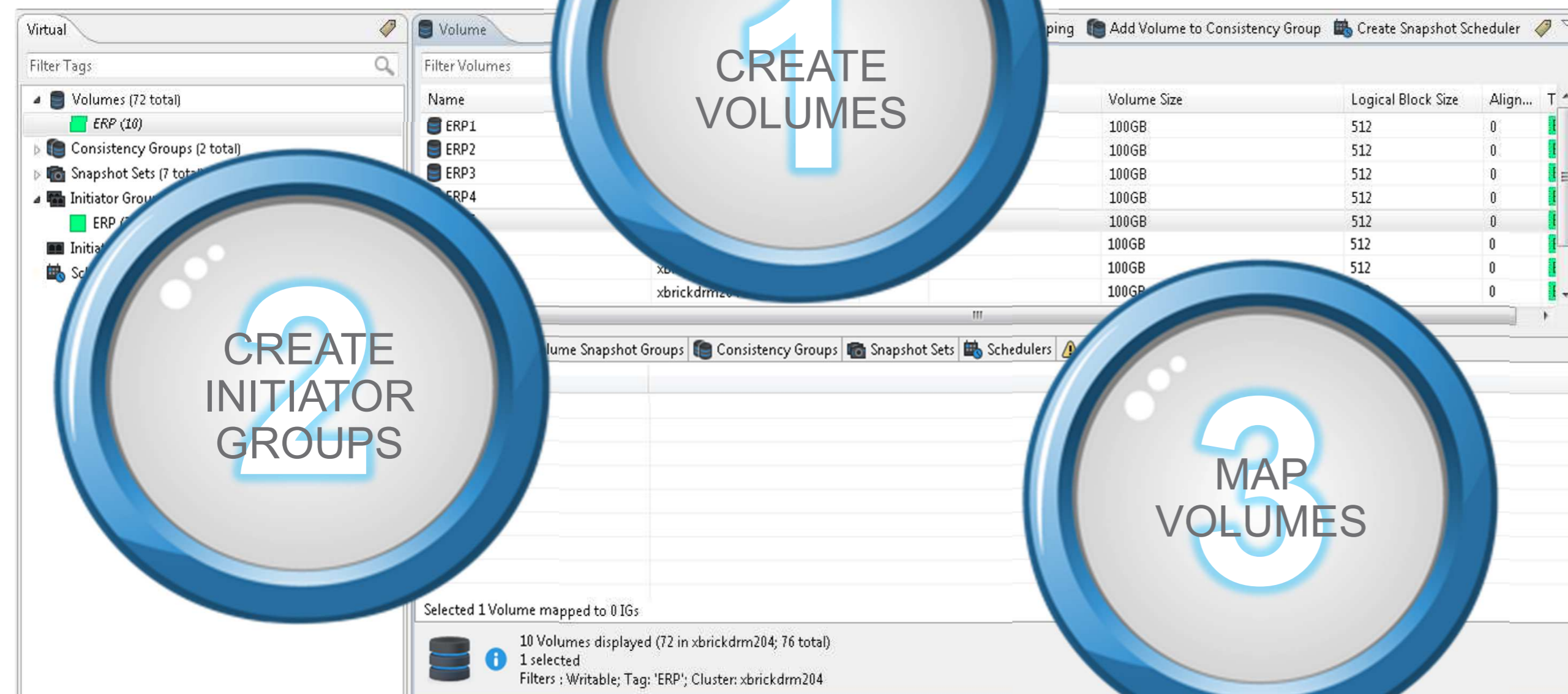
# XTREMIO SIMPLICITY & AUTOMATION

## Management Impact:

- Zero Planning & Tuning
- No storage skills
- No certifications
- Provision in seconds!

## Integration:

- VMware vCenter
- EMC ViPR, ESA, ESI, SRM
- Microsoft Hyper-V
- App Consoles: Oracle, SAP, System Center, etc
- REST API & CLI



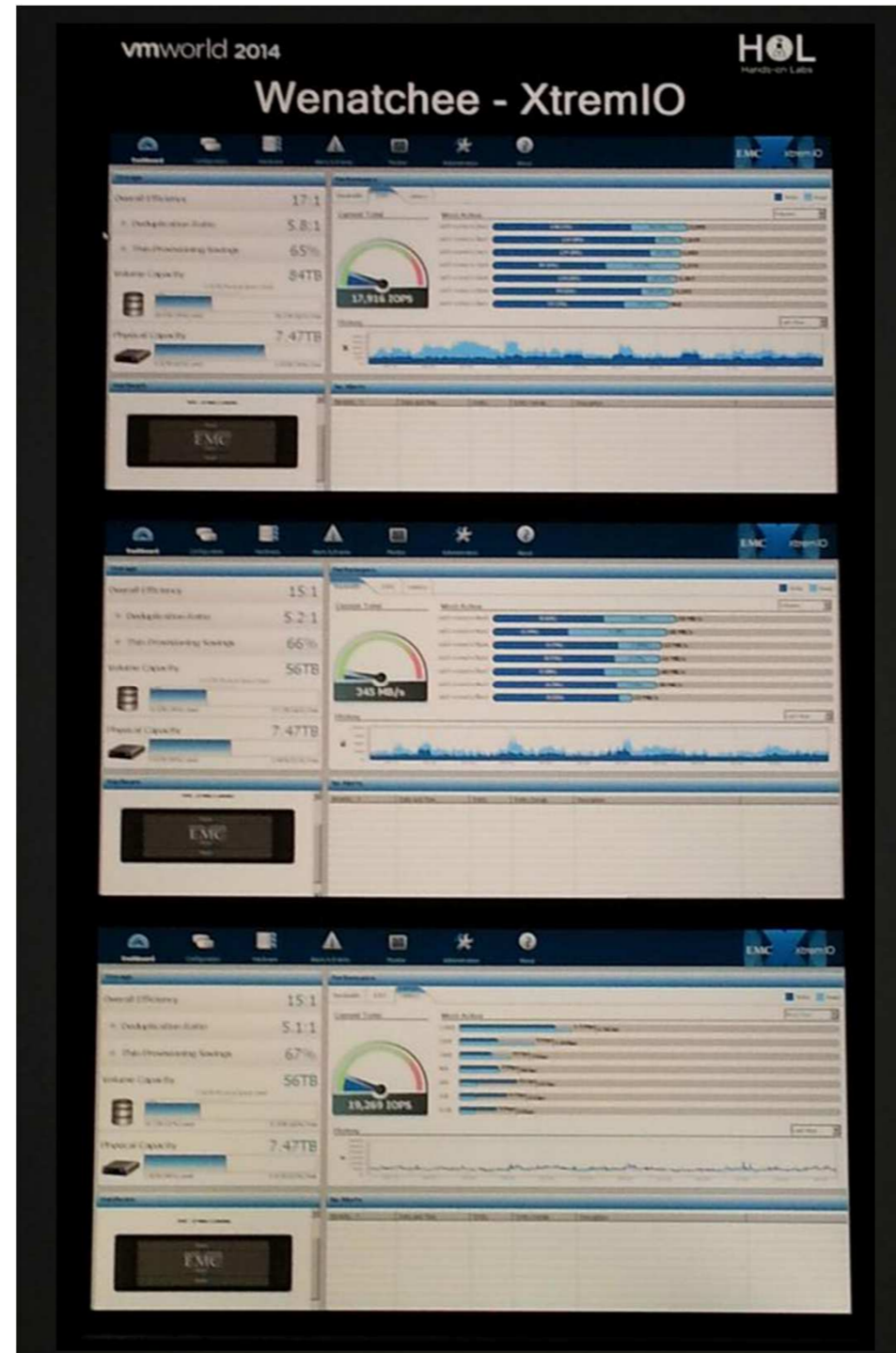
# PRIVATE CLOUD CASE STUDY: VMWARE HANDS-ON LABS



500+ concurrent users

Short vApp life

High VM Churn rate



100% SLA

Direct VM Console interaction

Nested Workloads

LAB Count:  
10,000+

VMs Provisioned  
over 4 days:  
100,000+



# #1 FLASH ARRAY FOR VDI: >1.5M DESKTOPS!

## VDI BREAKTHROUGHS WITH XTREMIO

**10:1** Reduction In Capacity  
Per Desktop \* Persistent Desktops

**50%** Reduction In Storage  
Cost Per Desktop

**25%** Lower RAM Requirement  
for same disk IO perf

**40%** Reduction In Server  
Infrastructure

**up to 3500** Virtual Desktops  
Per X-Brick \*Non-persistent Desktops



# SOFTWARE DEVOPS IS BUSINESS CRITICAL

AGILITY & LEAN METHODS ARE KEY; BUT DIFFICULT

## DEVOPS AGILITY

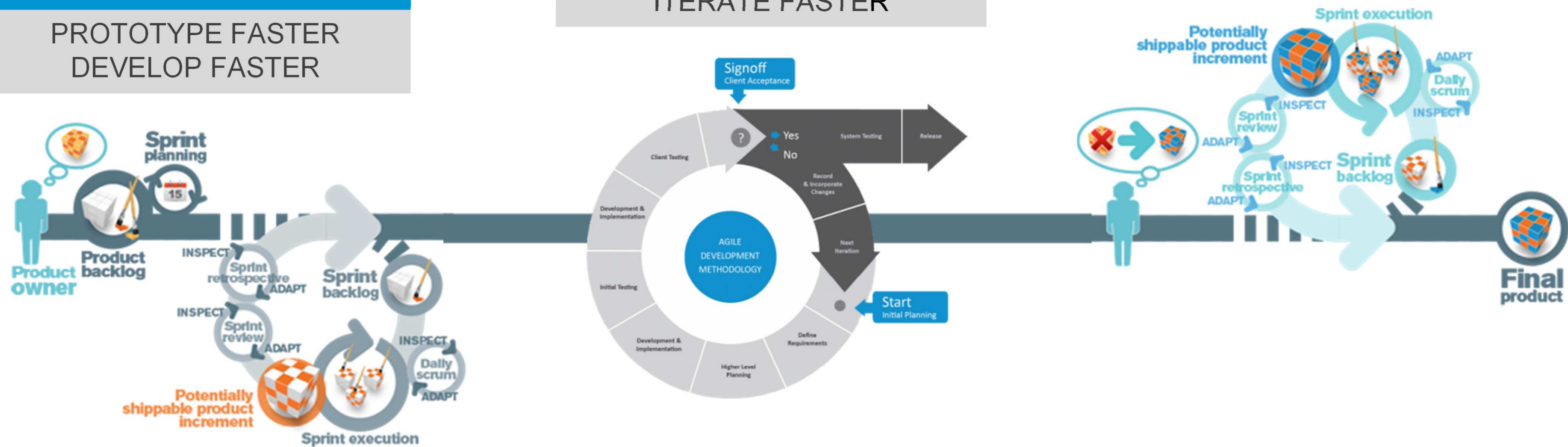
PROTOTYPE FASTER  
DEVELOP FASTER

## DEVOPS AGILITY

ITERATE FASTER

## DEVOPS AGILITY

LAUNCH FASTER  
SUPPORT FASTER



More efficient  
rapid development

{ }  
Code

👁️  
Design

🔨  
Develop

📄  
Reuse

☁️  
Integrate

📊  
Test

🎓  
Learn

Increase product  
Revenue

# DEVOPS CASE STUDY: AMDDOCS WITH XTREMIO



 **LIGHTNING FAST**  
FOR ALL DEVELOPERS

# ZERO

STORAGE/INFRASTRUCTURE  
TROUBLE TICKETS IN  
**6+MONTHS**



# 20X

FASTER  
AUTOMATED  
DEVOPS  
PROVISIONING

# 4:1

**DATA  
REDUCTION**

**DB COPIES ARE  
FREE!**



DevOps Stack



XtremIO  
Perforce  
VMWare ESXi  
Windows + HyperV  
MSFT Visual Studio

# TRANSFORMATIONAL USE CASES

Performance, Copy Data Agility, & Data Reduction Benefits



**DATABASE,  
ANALYTICS &  
BUSINESS APPS**



**CLOUD &  
VIRTUAL  
SERVERS**



**VIRTUAL  
DESKTOPS  
& DAAS**

2014



**WORKLOAD ACCELERATION, CONSOLIDATION, & AGILITY**

2015+



SW DevOps

VMware  
Horizon DaaS



vmware®

**READY**  
**FOR ANY**  
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