CONSOLIDATION BEST PRACTICES FOR YOUR ORACLE ENVIRONMENT

KEVIN CLOSSON, CHIEF PERFORMANCE ARCHITECT, XTREMIO

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AGENDA

- Database & Application Challenges
- The XtremIO Solution
- Integrated Copy Data Management
- Self-Service Options for Databases
- Q&A

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DATABASES AND APPLICATIONS TODAY

THE GROWTH CONTINUES

100+ Number of DBs in typical large organization

64% Organizations seeing increase in number of Oracle DBs

800 Hours to provision fully loaded database

22% Organizations pursuing Database as a Service Initiatives

Source: 2015 IOUG Survey on Database Manageability; Oracle surveys

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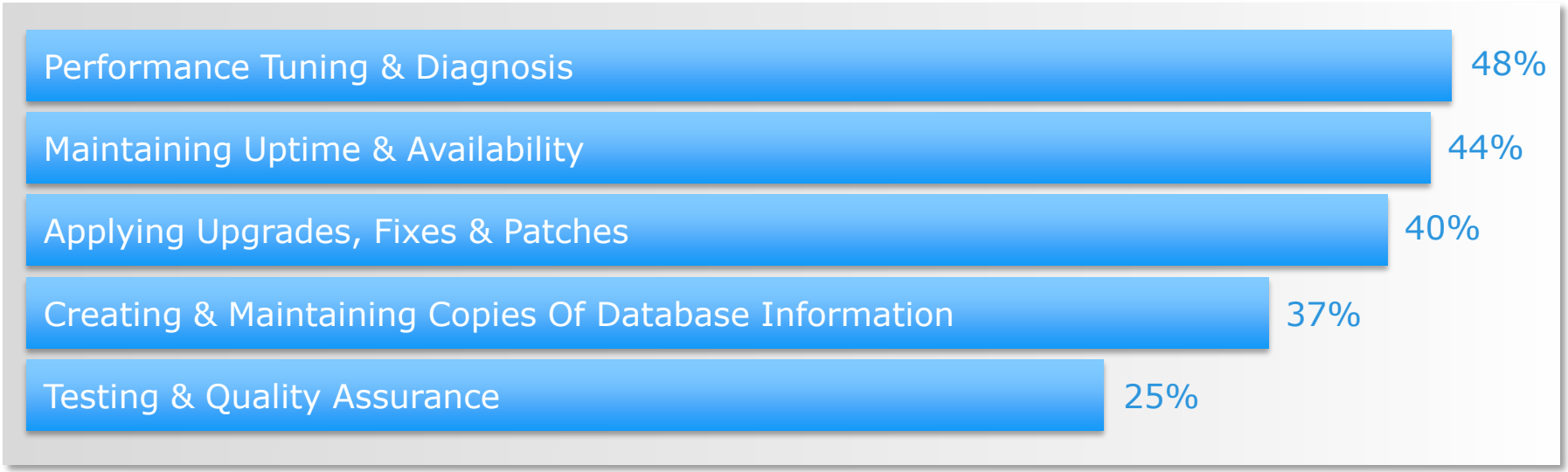
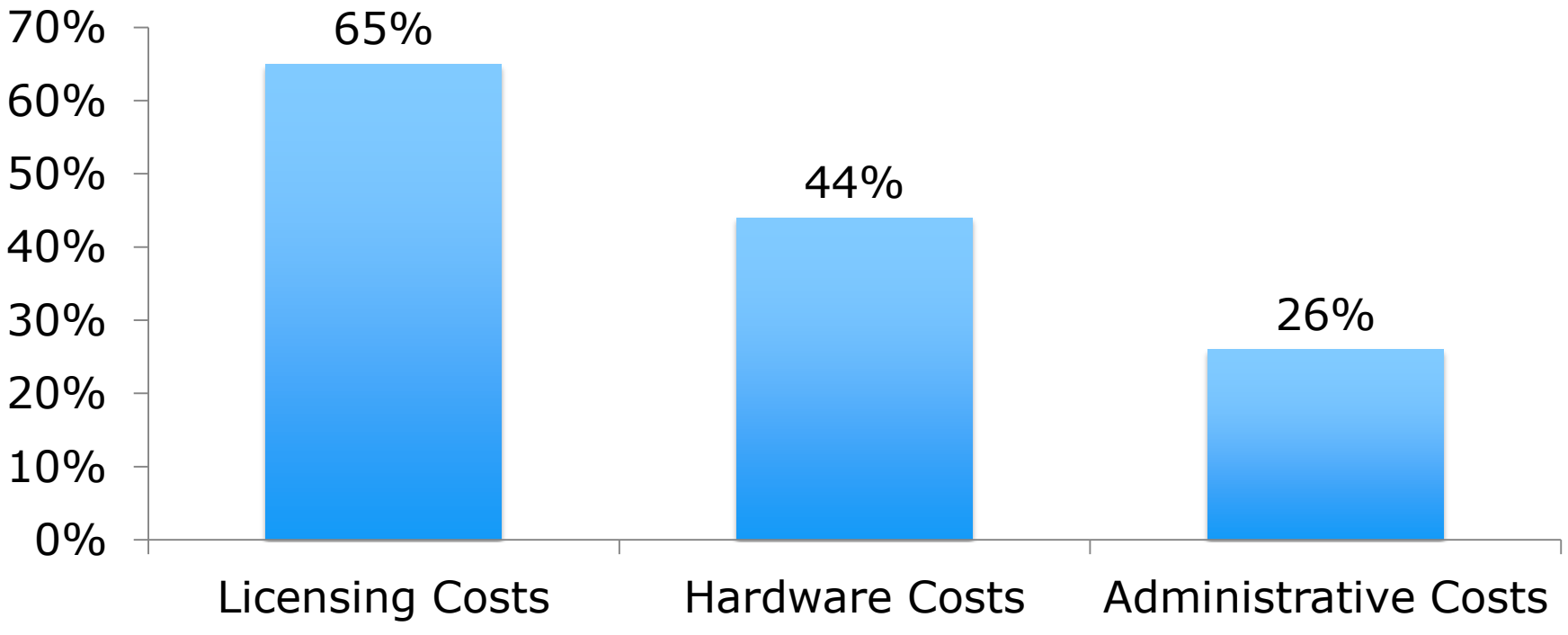
DATABASE MANAGEMENT ACTIVITIES

TOP FIVE WEEKLY DBA ACTIVITIES



Source: 2014 IT Resource Strategies Survey

ADDING NEW ORACLE DATABASES: TOP CHALLENGES



Source: 2014 Enterprise Platform Decisions Survey

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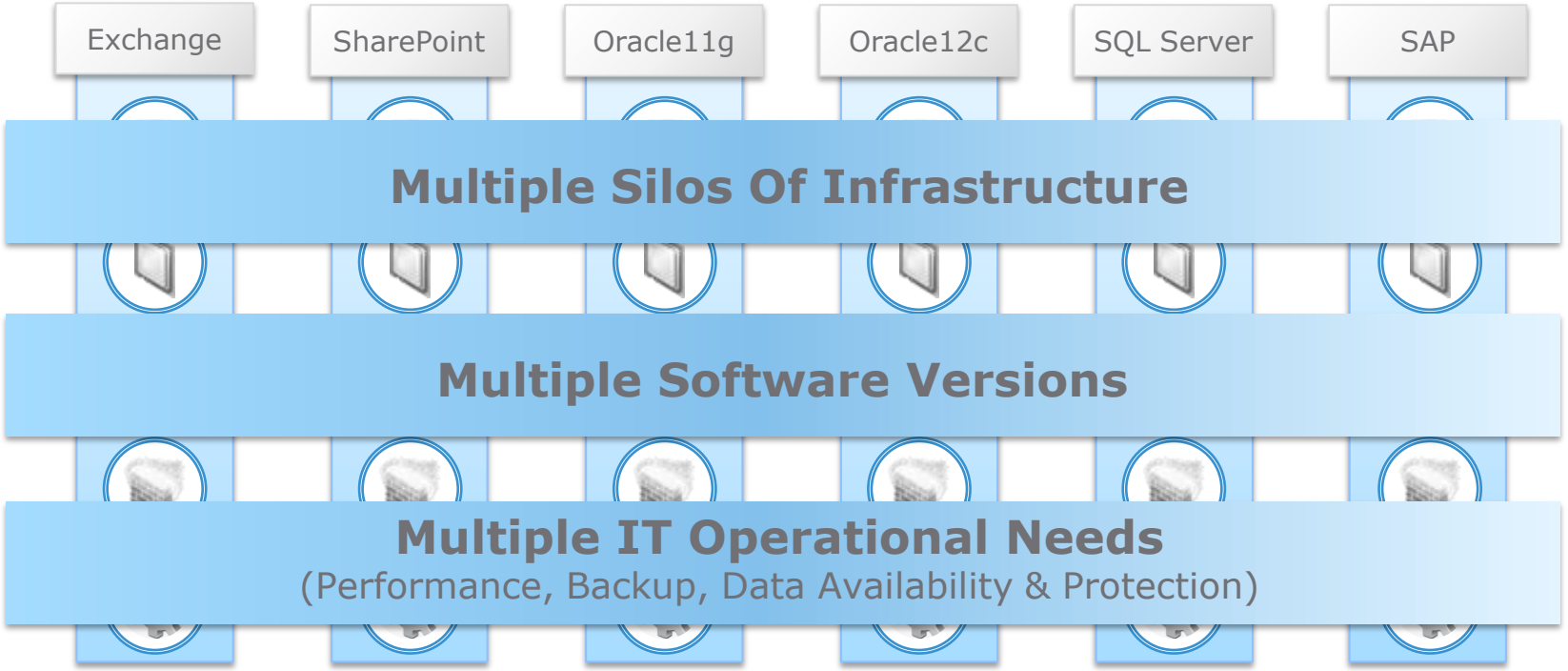
90%+ OF DATA CENTERS ARE MIXED

SEPARATE SLAs USUALLY RESULT IN A SILOED ENVIRONMENT



Source: 2014 IT Resource Strategies Survey

STORAGE IS OFTEN THE BOTTLENECK

DATABASE MANAGEMENT GAP

Database Admins

80%

Say DBA & Storage Administrator Collaboration Is Key To Organization

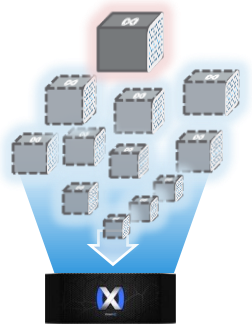
Storage Teams

In-Depth Database Knowledge

In-Depth Storage Knowledge

Source: 2014 IT Resource Strategies Survey

WHAT IF YOU COULD SIMULTANEOUSLY…



Consolidate **everything**: dev, test, production, analytics

Meet DB performance SLAs

Simplify DB operations; deploy apps sooner

Reduce product & administrative costs

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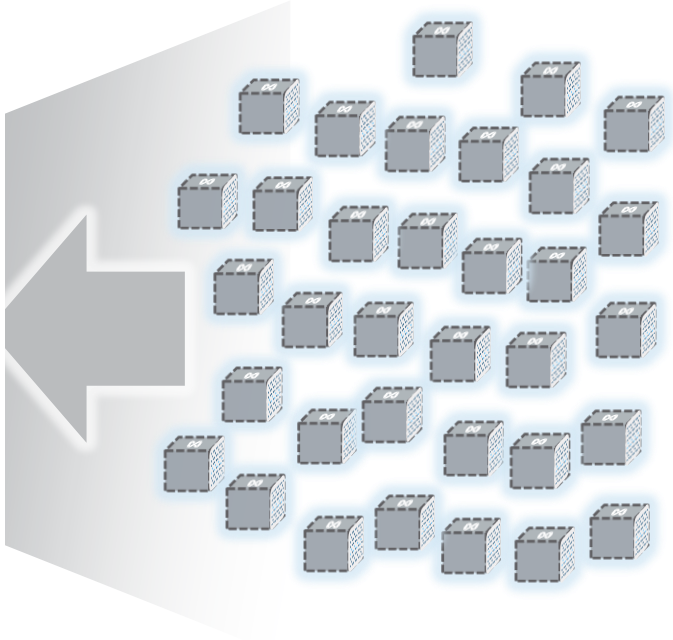
EMC XTREMIO REDEFINES DATABASES

CONSOLIDATE EVERYTHING ON THE SAME INFRASTRUCTURE



- Production databases
- Development databases
- Functional & performance testing
- Analytics / OLAP
- Oracle & SAP applications

All while maintaining performance & availability SLAs!

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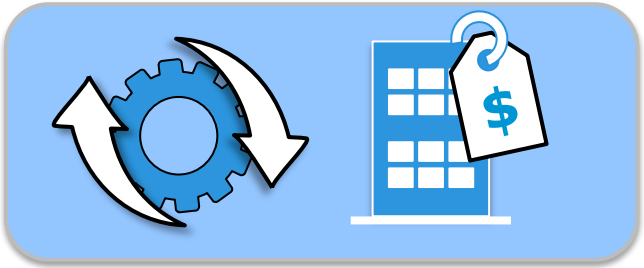
BAILLIE GIFFORD: DEV/TEST CONSOLIDATION

CREATE COPIES ON DEMAND WITHOUT LIMITATIONS

GOAL

Accelerate the development cycle and time to business value

Investment Firm



BAILLIE GIFFORD: DEV/TEST CONSOLIDATION

CREATE COPIES ON DEMAND WITHOUT LIMITATIONS

BEFORE COPY

Due to performance concerns each copy was a **full clone of production data**

Investment Firm

02
DAYS

32x
DATA SIZE

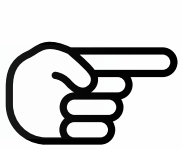
30
DAYS Old

BAILLIE GIFFORD: DEV/TEST

CREATE SAVINGS AND AGILITY FOR THE CUSTOMER

AFTER COPY

XtremIO saves tremendous amount of time, capacity and cost to the customer



Investment Firm

02	32x	30
DAYS OLD	DATA SIZE	DAYS
30’	**1+Δ**	**0**
ENTIRE TEST AND DEVELOPMENT IN MINUTES	ONLY UNIQUE WRITES CONSUME CAPACITY	IMMEDIATE COPIES FROM PRODUCTION

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DATA CENTER SCALE, ON-DEMAND SCALE-OUT

ENABLING MASSIVE CONSOLIDATION

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

From 2 – 16 N-way Active Controllers

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

5TB – over 1PB usable capacity

SCALE-OUT <1ms LATENCY RICH DATA SERVICES NO TUNING

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XTREMIO DATA SERVICES

ALWAYS-ON, INLINE, ZERO PENALTY

ALWAYS ON THIN PROVISIONING

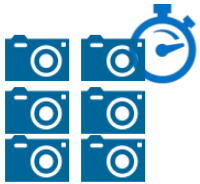
INLINE DATA DEDUPLICATION

INLINE DATA COMPRESSION

INLINE DATA ENCRYPTION

FLASH OPTIMIZED DATA PROTECTION

WRITABLE COPIES



Up To 6:1 Database Reduction On Average Just For Production Databases

COMPLEXITY IS NO LONGER NEEDED

SIMPLIFY ARCHITECTURE AND OPERATIONAL MANAGEMENT

HISTORIC COMPLEXITIES

- Disk Type Selection
- RAID Protection Selection
- RAID Group or Storage Pool
- Striped or Concatenated Meta Devices
- Auto Tiering
- Array Caching
- Thick or Thin LUNs

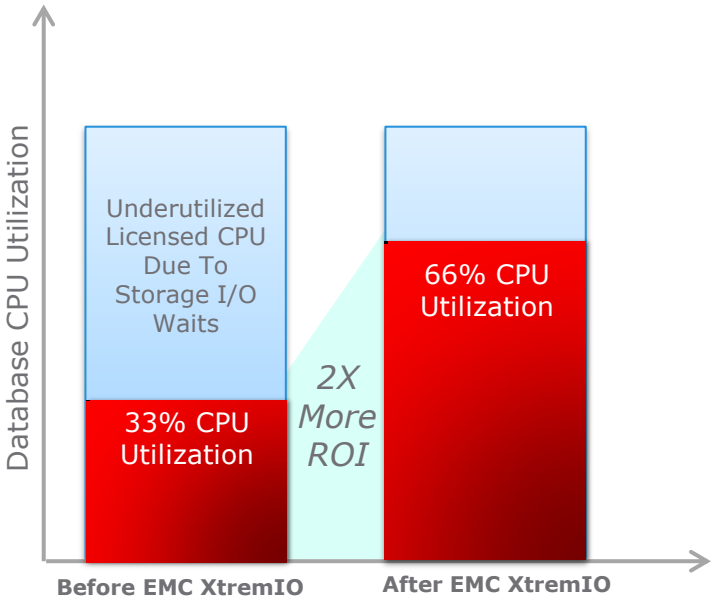
XTREMIO

Create Volume of Required Size

DONE!

FLASH INCREASES LICENSE ROI

INCREASED CPU UTILIZATION REDUCING I/O WAITS



2X HIGHER UTILIZATION OF DATABASE LICENSE INVESTMENT

Source: XtremIO Customer Case Study

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THE COPY DATA MANAGEMENT PROBLEM

CRITICAL BUSINESS PROCESSES COMPROMISED

IDC: >60% data from copies

A $44B global expense!

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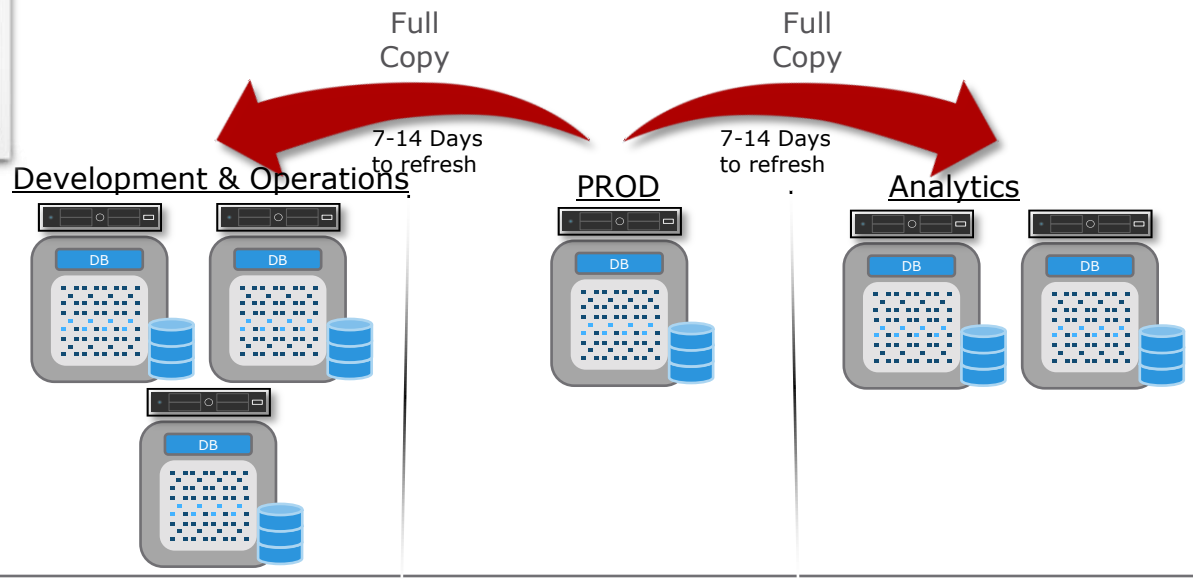
THE COPY DATA MANAGEMENT PROBLEM

TYPICALLY EACH APPLICATION HAS 5-12 COPIES

JUST ONE APPLICATION



6 DATABASE COPIES

1-2 WEEKS FOR BUSINESS PROCESS COPIES

30+ DAYS OLD STALE DATA

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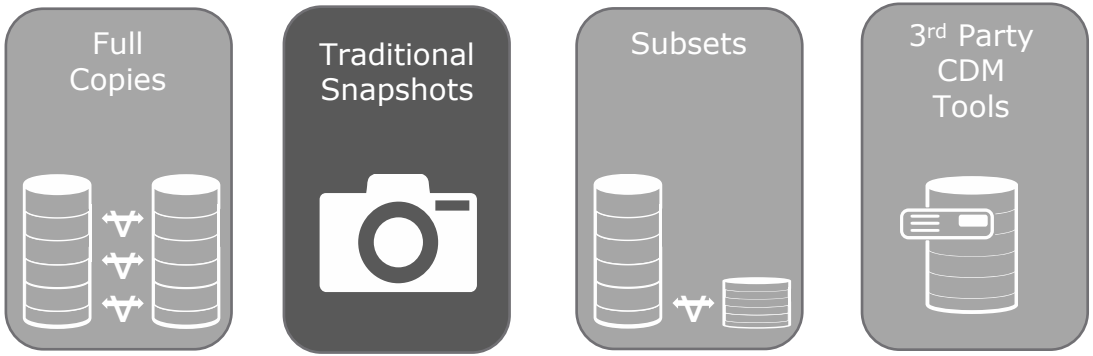
COPY DATA MANAGEMENT APPROACHES

…AND THE NEW ***INTEGRATED CDM OPTION***



COSTS

PERFORMANCE

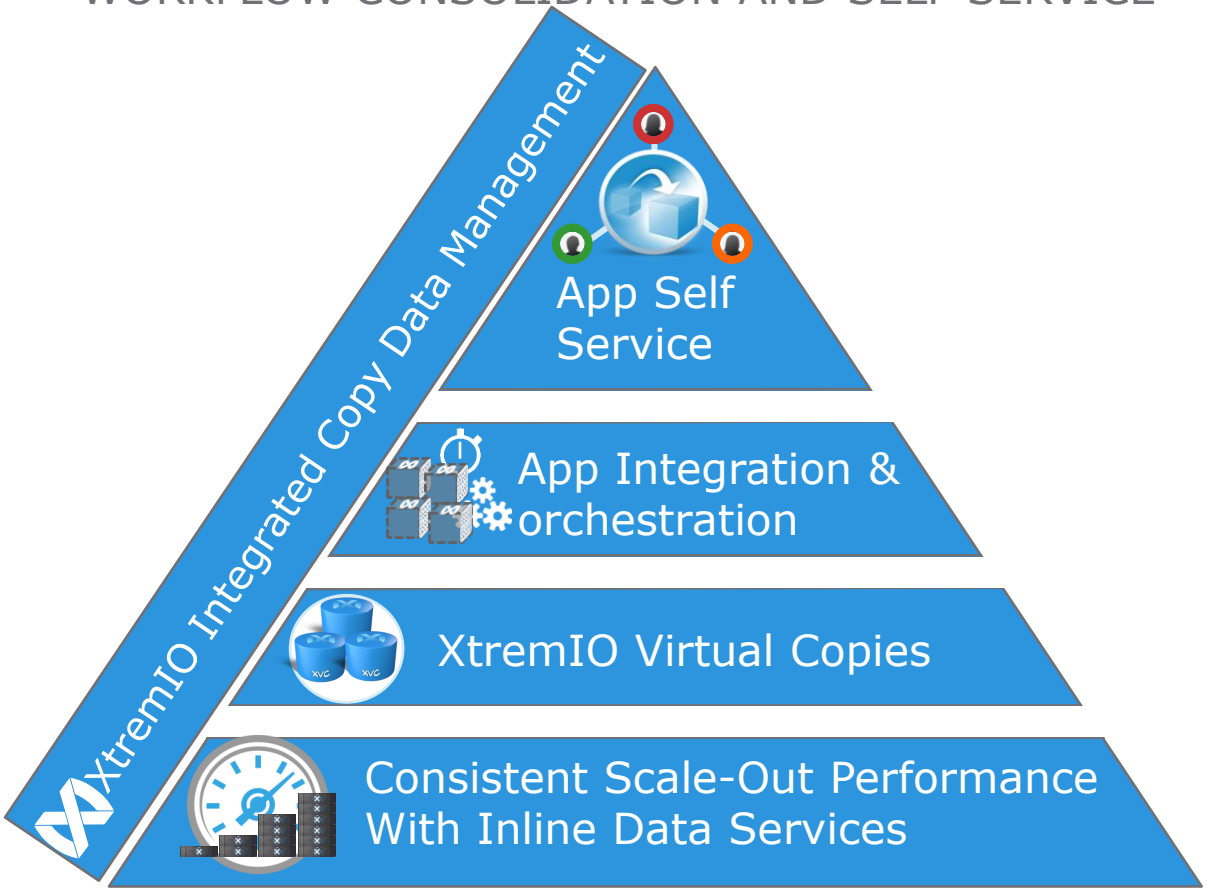
AGILITY

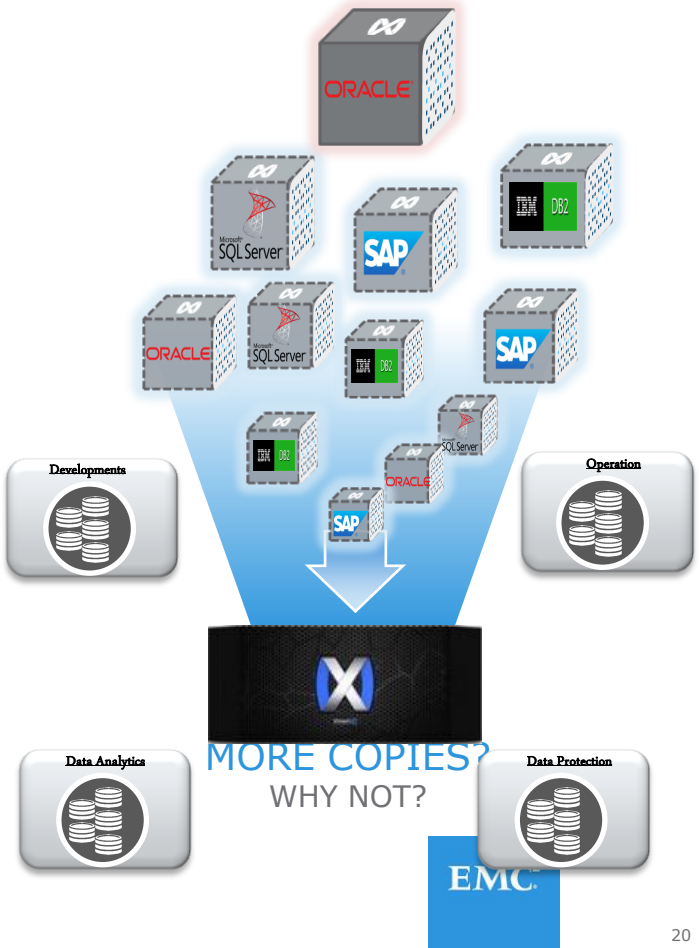
SCALABILITY

Current CDM options force trade-offs between Cost, Performance, Agility, and Scalability

XTREMIO INTEGRATED COPY DATA MANAGEMENT

WORKFLOW CONSOLIDATION AND SELF SERVICE





XTREMIO VIRTUAL COPIES

Efficient In-Memory Copies

- No space reservation or moving blocks
- No metadata bloat, shared in-memory metadata
- Immediate creation with no impact on prod
- Thin provisioning, dedup, compression

100% Performance

- Same performance as prod
- Predictable performance on prod or copies
- No impact on prod when copies are created
- Optimal SLA

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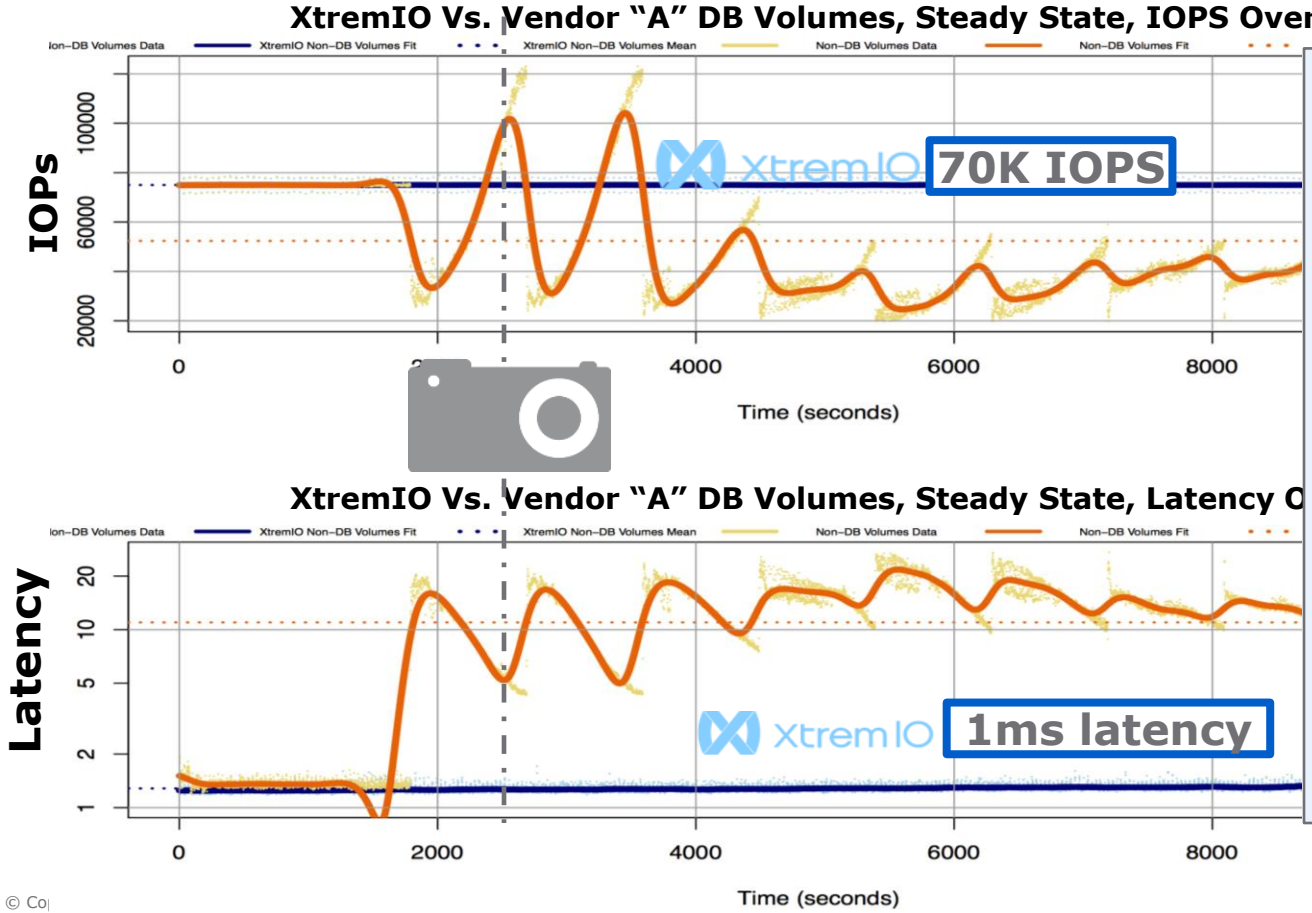
XVC VS. TRADITIONAL SNAPSHOTS



XtremIO

- **No impact** on copy creation
- **Consistent** performance on prod and copy

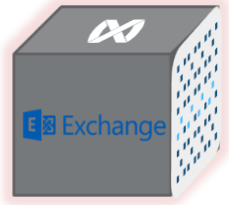
Vendor A

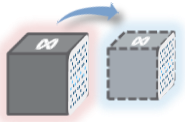
- **IOPs** drop by 50% to **35K**
- Spikes to **20ms latency**

© Co

APPLICATION AUTOMATION AND ORCHESTRATION

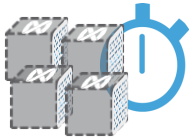
SINGLE-CLICK AUTOMATION





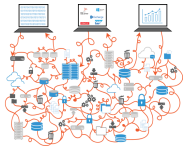
Provision Databases
In Seconds

ON-DEMAND



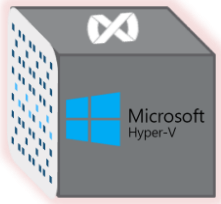
Unattended
Automated

SCHEDULED



Prevention Of Sprawl

EXPIRE



Increase Efficiencies

Reduce Complexit

Increase Agility

Centralized Management

Customizable For Databases

Alert Notification System

Recover Storage Capacity

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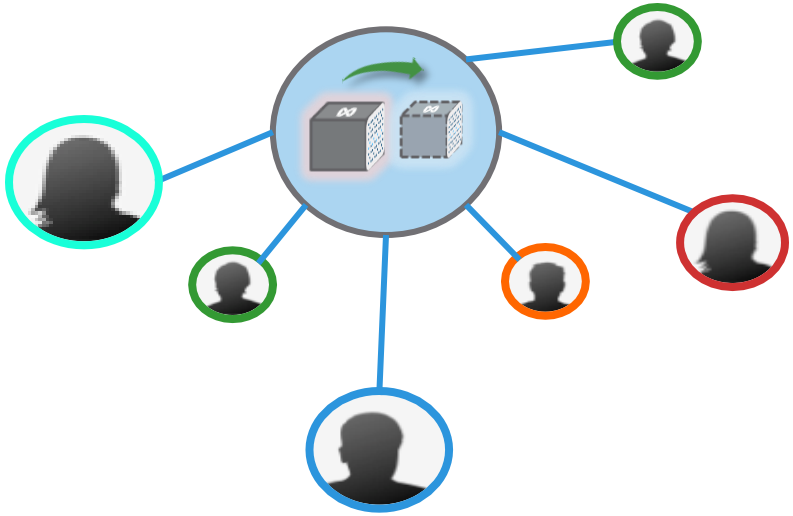
APP SELF-SERVICE

EMPOWER APPLICATION, DATABASE, AND DEV OWNERS

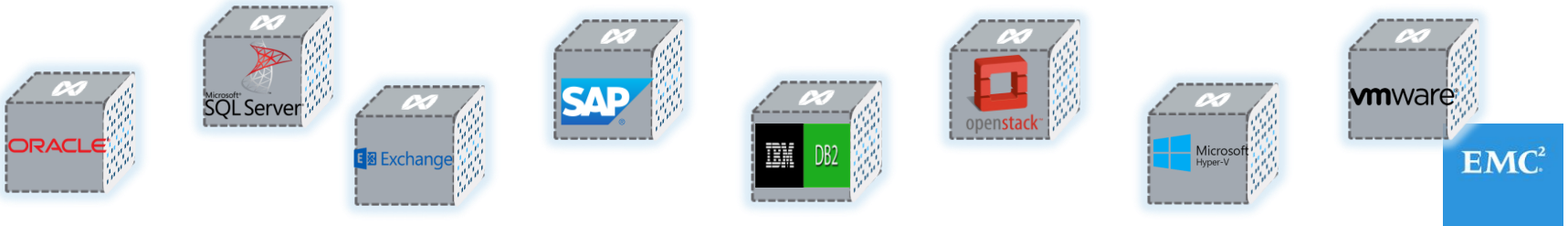


Automation & Scripting

- REST API
- SMI-S
- Perl, Python, etc...

Management Consoles

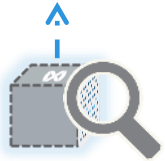
- AppSync
- Hypervisor Plug-ins
- App Plug-ins
- Web Portals



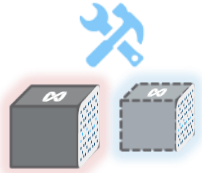
ICDM WILL TRANSFORM YOUR IT

HIGH IMPACT IN 4 KEY AREAS

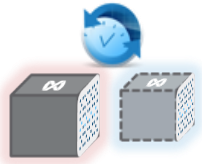
Accelerate Development



Unlock Data Analytics



Improve Operations



Data Recovery

Consolidate Mixed tier-1 Non-Prod Workloads

Reduce

- Complexity
- Cost
- Overhead

Increase

- Agility
- Efficiency
- Productivity

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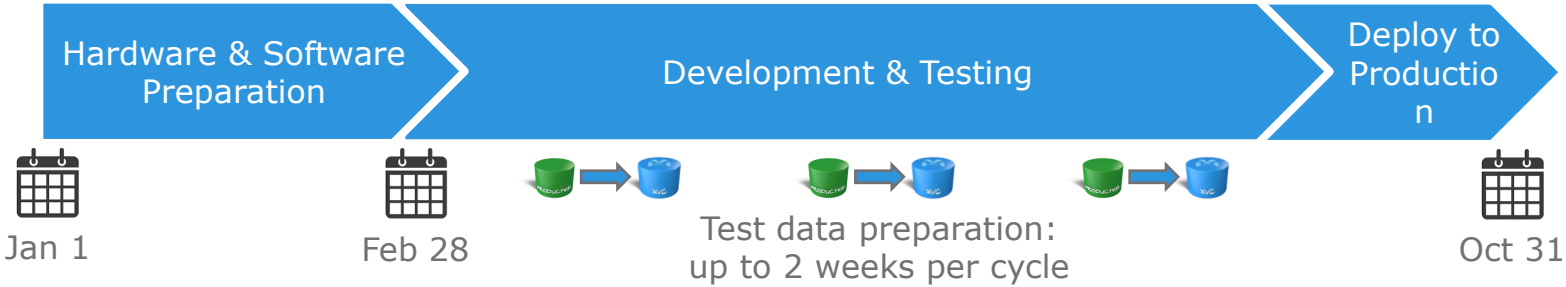
ACCELERATE DEVELOPMENT & QA

BETTER QUALITY APPLICATIONS, FASTER AND CHEAPER

Old Software Development Timeline



New Software Development Timeline with XVC

Typical time savings of **40%** or more

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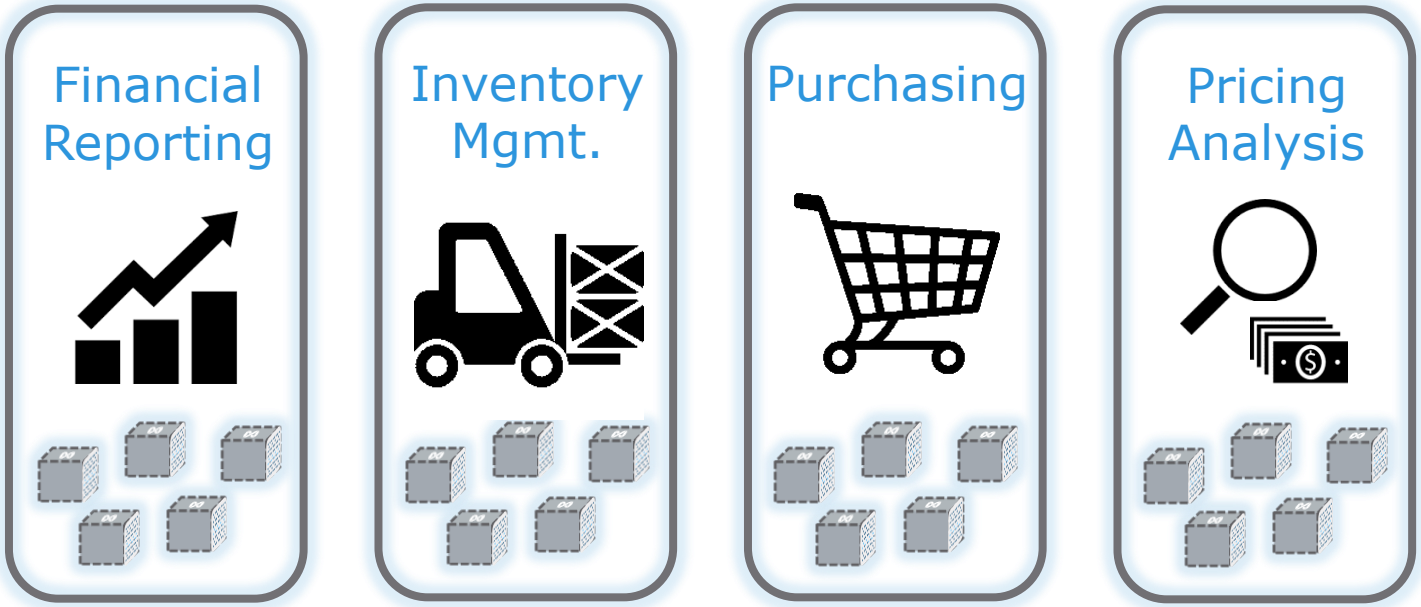
UNLOCK DATA ANALYTICS

REAL-TIME DECISIONS TRANSFORM EVERY BUSINESS PROCESS



No more stale data • No more siloed data • No more batch processing delays

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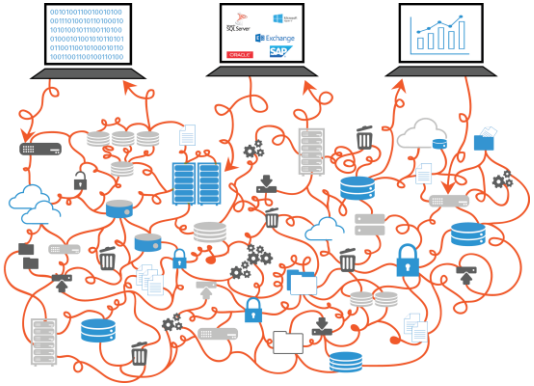
IMPROVE DATA CENTER OPERATIONS

TEST APPLICATION CHANGES BEFORE THEY ENTER PRODUCTION

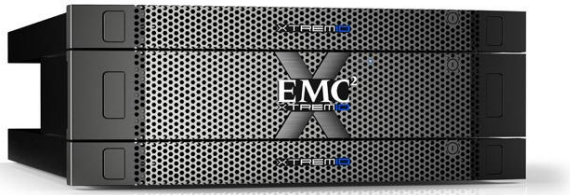
Production Realities

- Large number of application patches & configuration changes
- Limited testing resources
- Limited troubleshooting capability
- Short update windows



XtremIO Virtual Copies solution

- **Instantly available** test environments with fresh data
- **Resource-efficient** testing & troubleshooting



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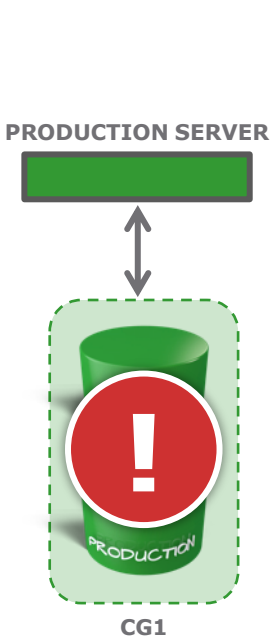
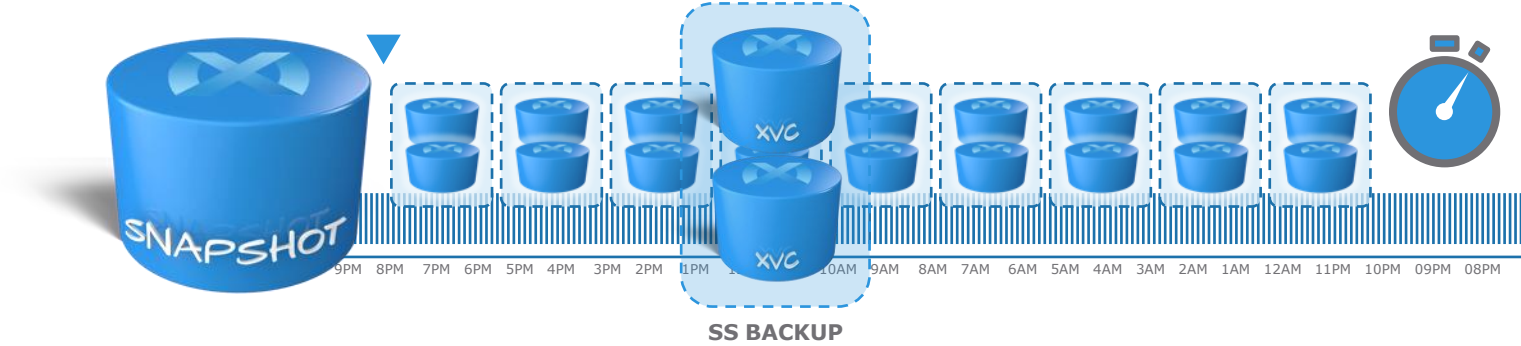
ENSURE DATA PROTECTION

PROTECT FROM LOGICAL DATA CORRUPTION BY CREATING SNAPSHOTS OVER SHORT INTERVALS





- Scheduling capabilities
- Space efficient
- Immediate creation and mapping of snapshots
- Fast restore from data corruption
- Fine Recover Point Objective (RPO)

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CUSTOMER BEST PRACTICES

SCALABLE, HIGH-PERFORMANCE STORAGE WITH XTREMIO

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Buy it for looks. Buy it for life.®

CHALLENGE

- Accelerate core business SAP applications
- Exceed corporate SLA goals
- Transform SAP Test and Dev processes with self service system copies and production-like performance
- Enable more reporting and analytical ability

Solution

EMC XtremIO All-Flash Array

VNX2 5600

VPLEX, Data Domain

Oracle SPARC

Applications

SAP ECC, BW, APO/SCM, CRM

Oracle Databases

VMware for SAP Portal

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CUSTOMER BEST PRACTICES

TRANSFORMATION OF IT WORKFLOW

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RESULTS

16x	Landscape space reduction via snapshot savings and Compression
100%	All non-Prod SAP Landscapes run on XtremIO Snapshots of SAP PROD (excluding Dev)
75%	Faster self-service and fully automatic copies of production (now 2 copies!)
75%	Reduced time in provisioning a landscape (Long hand, non-automated, monthly system copies – QA, SBX) ½ Day vs. 2 Days
100%	Confidence in backups leveraging snap on snap

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CUSTOMER BEST PRACTICES

CORE APPLICATION & JIT MANUFACTURING IMPACT

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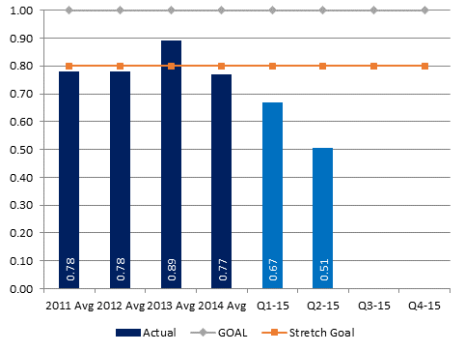
RESULTS



37% Improvement - SAP dialog average response times

up to **9X** Faster batch processing and ETL run times

3X Reduction in wait time for business reports

1,500+ SAP users get better experience across all SAP modules (ECC, BW, APO/SCM, CRM)

Delivering improvements in planning & efficiency

70% Saving on floor space at HQ, DR and co-location

Many! Hours returned to developers and business users

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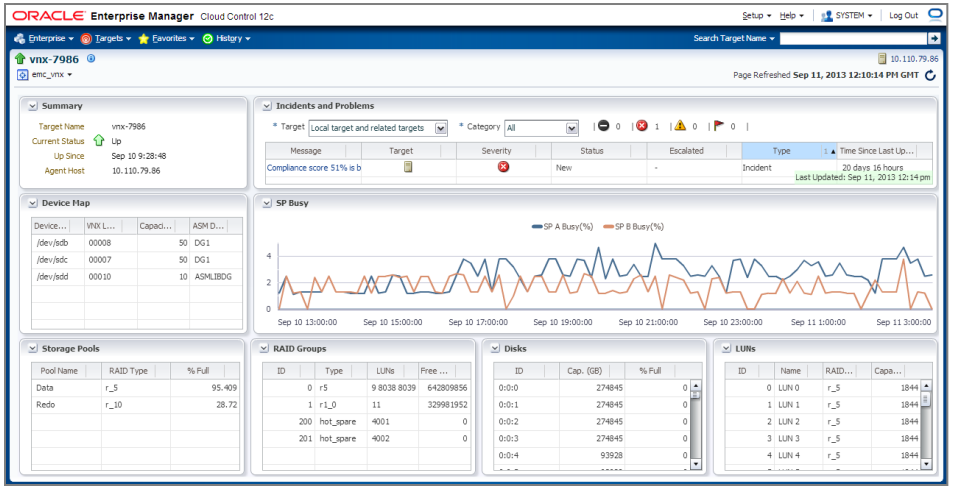
SELF-SERVICE WITH ORACLE ENTERPRISE MANAGER

FREE XTREMIO PLUG-IN



- Manage & monitor the Oracle environment, including storage
- Automate tasks and assist on database administration
- Monitor XtremIO utilization, configuration, and performance
  - Throughput and IOPS
  - Response Time
- Set thresholds and notifications for key XtremIO health indicators

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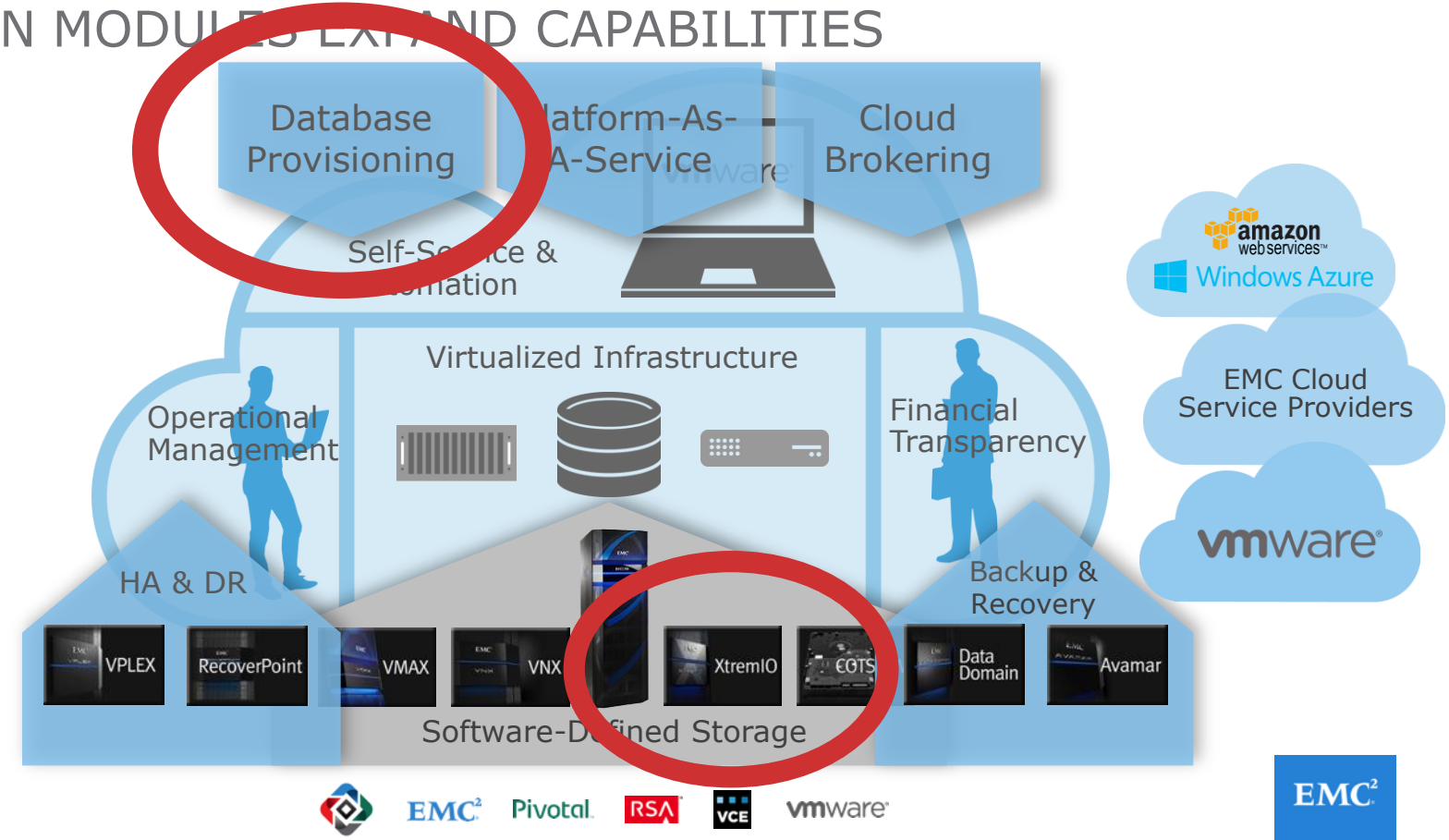
SELF-SERVICE DBAAS WITH EMC FEDERATION

ADD-ON MODULES EXPAND CAPABILITIES



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SLOB: THE STANDARD ORACLE TEST HARNESS

www.xtremio.com/slob

Don't just take our word for it! Use SLOB to

- Create workloads for repeatable Oracle DB platform testing
- Compare storage and server platforms

THE BENCHMARK OF CHOICE FOR ORACLE TESTING EXPERTS

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EMC: NUMBER #1 FOR ORACLE

Rank	Business Intelligence and Analytics	Home Directories	Microsoft Exchange	Microsoft SharePoint	Oracle	SAP	VDI
1	**EMC**	**EMC**	**EMC**	**EMC**	**EMC**	**EMC**	**EMC**
2	NetApp	NetApp	HP & NetApp (tied)	HP	**HP, IBM & NetApp (tied)**	Hitachi	NetApp
3	HP	HP		Dell & NetApp (tied)		IBM	HP & IBM (tied)

Source: IDC's Worldwide Quarterly Disk Storage Systems Tracker, March 2013, and SUDS Survey analysis, 2013

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EMC COMMUNITIES & MORE INFO

ENGAGE THE DBA & APPLICATIONS COMMUNITIES AT EMC

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Proven Solutions

Pod Casts

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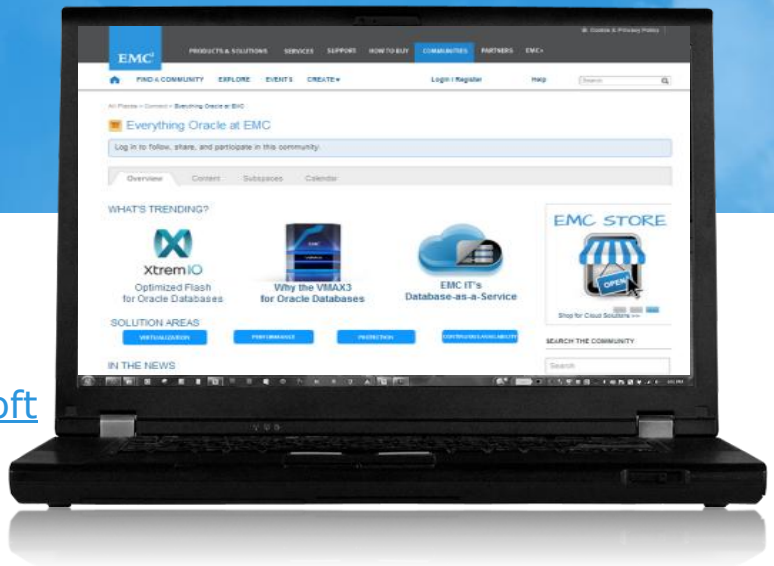
Webcasts & Videos

Upcoming Events



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