DBAs: Take Control of the Storage Needs for Your Oracle Environments
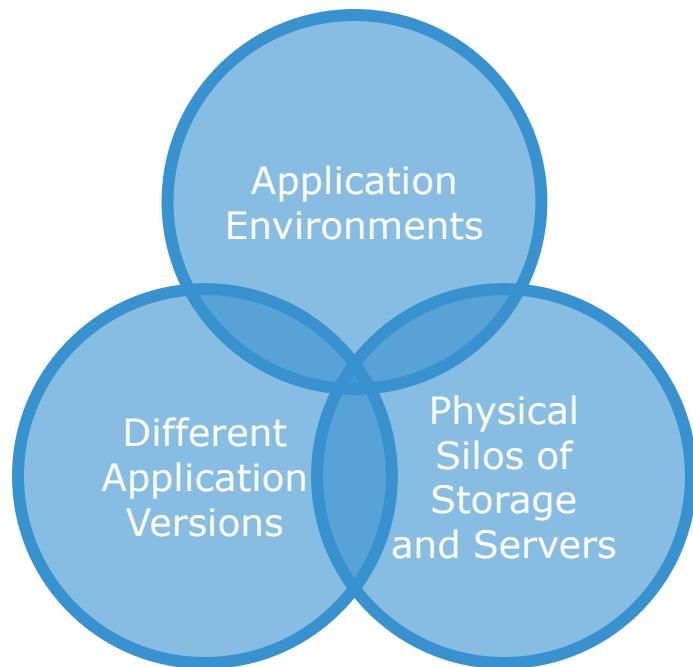
Sam Lucido

EMC Global Lead for Oracle

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Oracle Environments Today

Physical Infrastructure Limits Value Of Investment

Application Environments

Different Application Versions

Physical Silos of Storage and Servers
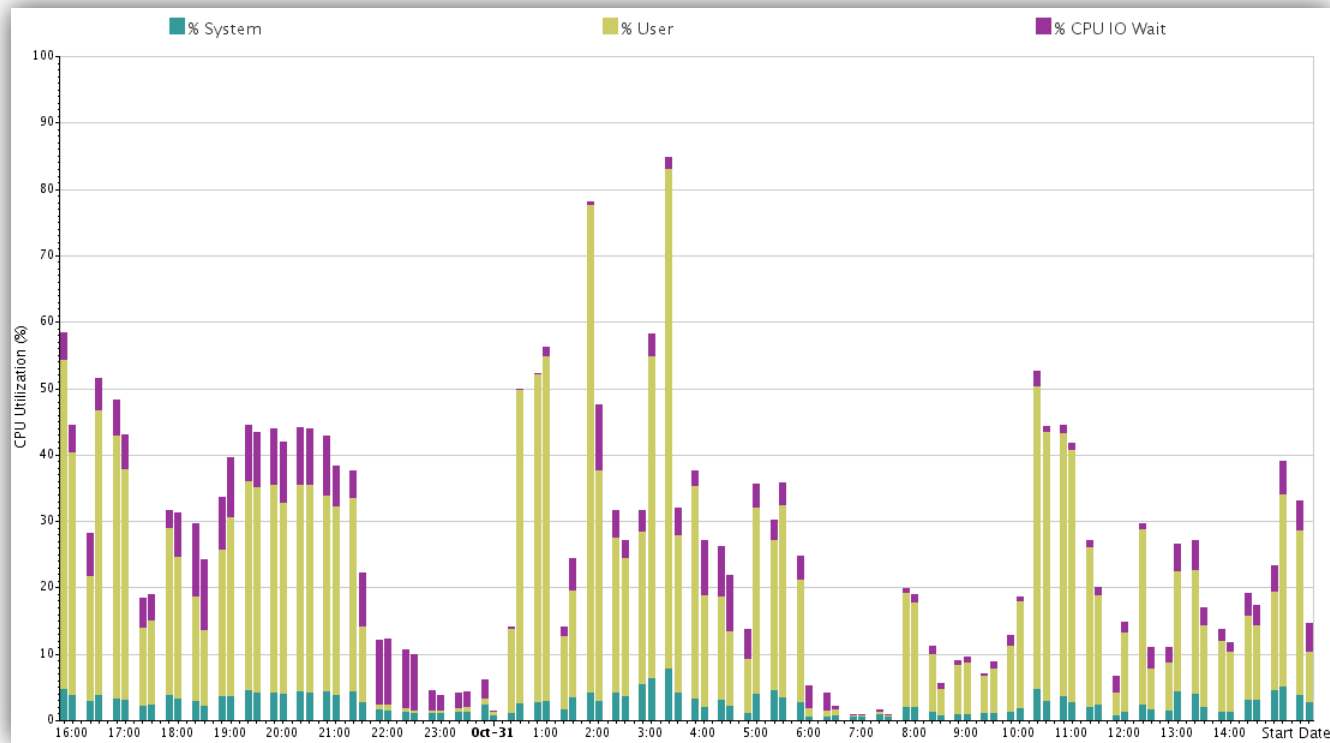
Challenges

Limits on Performance

Underutilized Hardware

Reactive vs. Proactive IT

Inefficient Recovery

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Where in the database stack can your business gain the greatest *performance*?

Processor?

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# Where in the database stack can your business gain the greatest *performance*?

Memory?
Buffer Pool Advisory

P	Size for Est (M)	Size Factor	Buffers for Estimate	Est Phys Read Factor	Estimated Physical Reads
D	5,824	0.40	365,820	1.83	15,014,209
D	7,280	0.50	457,275	1.82	14,903,034
D	8,736	0.60	548,730	1.78	14,616,416
D	10,192	0.70	640,185	1.69	13,889,346
D	11,648	0.80	731,640	1.30	10,629,731
D	13,104	0.90	823,095	1.08	8,882,310
D	14,560	1.00	914,550	1.00	8,200,910
D	16,016	1.10	1,006,005	0.98	8,073,081
D	17,472	1.20	1,097,460	0.97	7,989,555
D	18,928	1.30	1,188,915	0.96	7,898,151
D	20,384	1.40	1,280,370	0.95	7,793,979
D	21,840	1.50	1,371,825	0.93	7,637,048
D	23,296	1.60	1,463,280	0.91	7,472,174
D	24,752	1.70	1,554,735	0.88	7,232,038
D	26,208	1.80	1,646,190	0.85	6,931,222
D	27,664	1.90	1,737,645	0.78	6,385,465
D	29,120	2.00	1,829,100	0.68	5,561,012

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Where in the database stack can your business gain the greatest *performance*?

Disk?

RAID-5 IOPS   RAID-10 IOPS
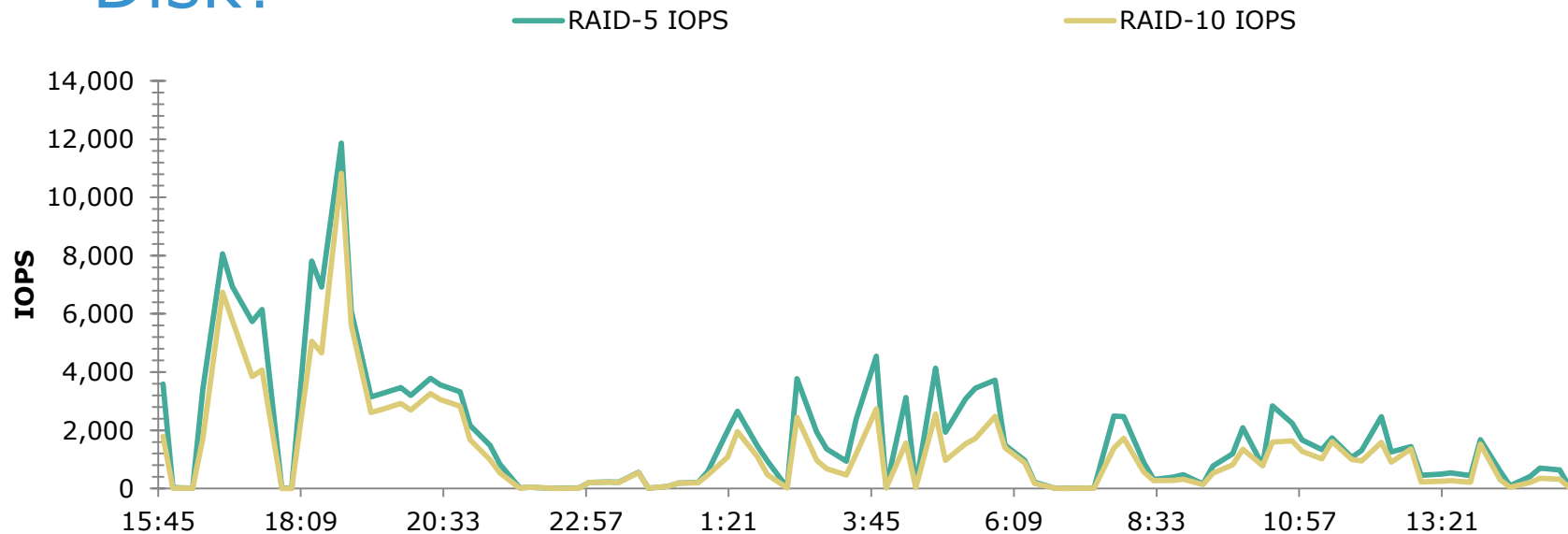
The New Storage Audience: Oracle DBA

Oracle DBAs

Storage Admin

Performance

Availability

Management

Being Asked To Do More...

Being Given More Tools...

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Your Challenge

APPLICATIONS

HIGH PERFORMANCE

- HPC / Specialty Applications
- Performance Critical Applications
- Mission Critical OLTP
- Mainstream Business Applications
- Decision Support / Collaboration
- IT Infrastructure / App Dev
- Long Term Archive

HIGH CAPACITY

CONVENTIONAL STORAGE

- FLASH
- 15K RPM FC/SAS
- 10K RPM FC/SAS
- 7K RPM SATA

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Our Vision

APPLICATIONS

HIGH PERFORMANCE

HIGH CAPACITY

- HPC / Specialty Applications
- Performance Critical Applications
- Mission Critical OLTP
- Mainstream Business Applications
- Decision Support / Collaboration
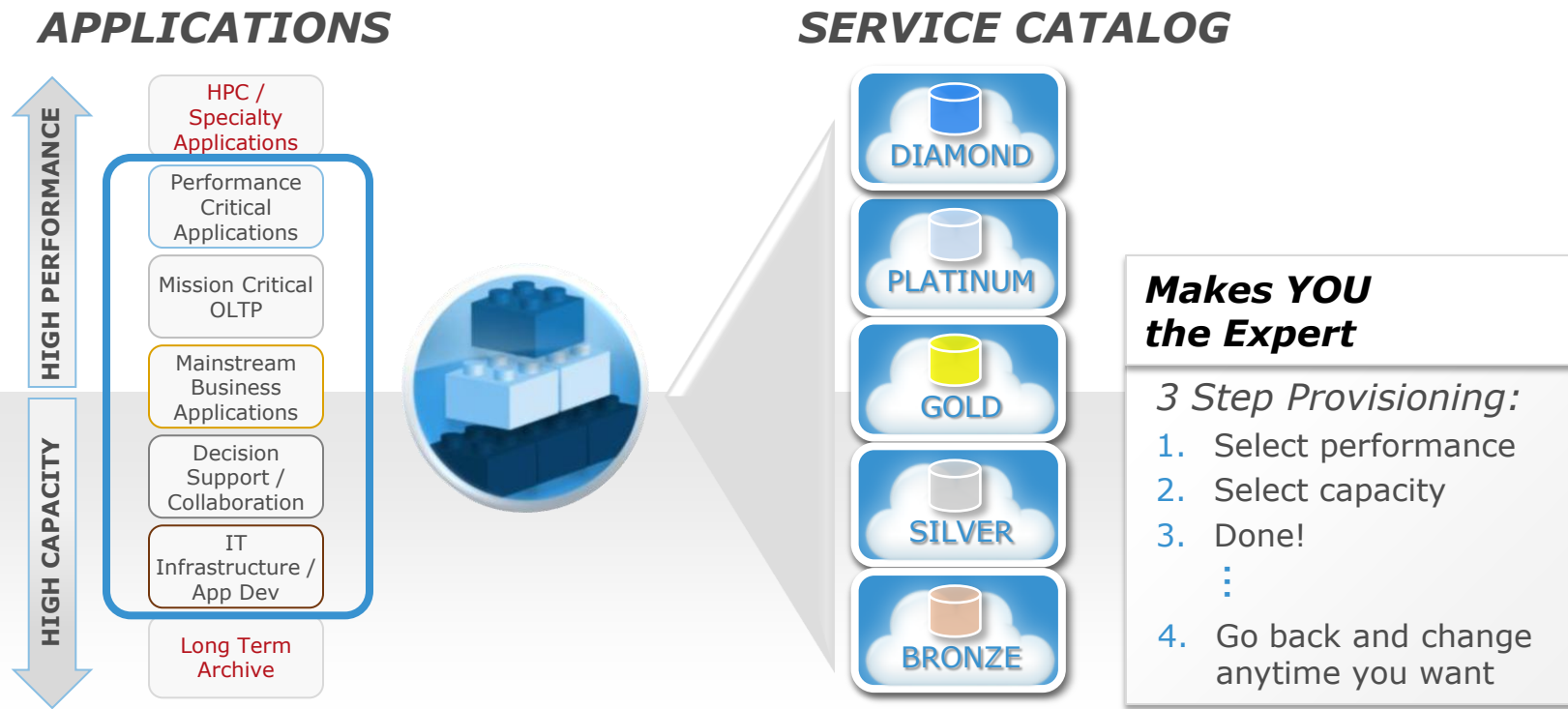- IT Infrastructure / App Dev
- Long Term Archive

What if…

You had the control?

- Self-service access
- Broad range of service level choice
- Enterprise-class service levels

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Fundamental Change

APPLICATIONS

SERVICE CATALOG

HIGH PERFORMANCE

HIGH CAPACITY

HPC / Specialty Applications

Performance Critical Applications

Mission Critical OLTP

Mainstream Business Applications

Decision Support / Collaboration

IT Infrastructure / App Dev

Long Term Archive

DIAMOND

PLATINUM

GOLD

SILVER

BRONZE

Makes YOU the Expert

3 Step Provisioning:

1. Select performance
2. Select capacity
3. Done!
   ⋮
4. Go back and change anytime you want

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Workload Assessment for Oracle

IOPS
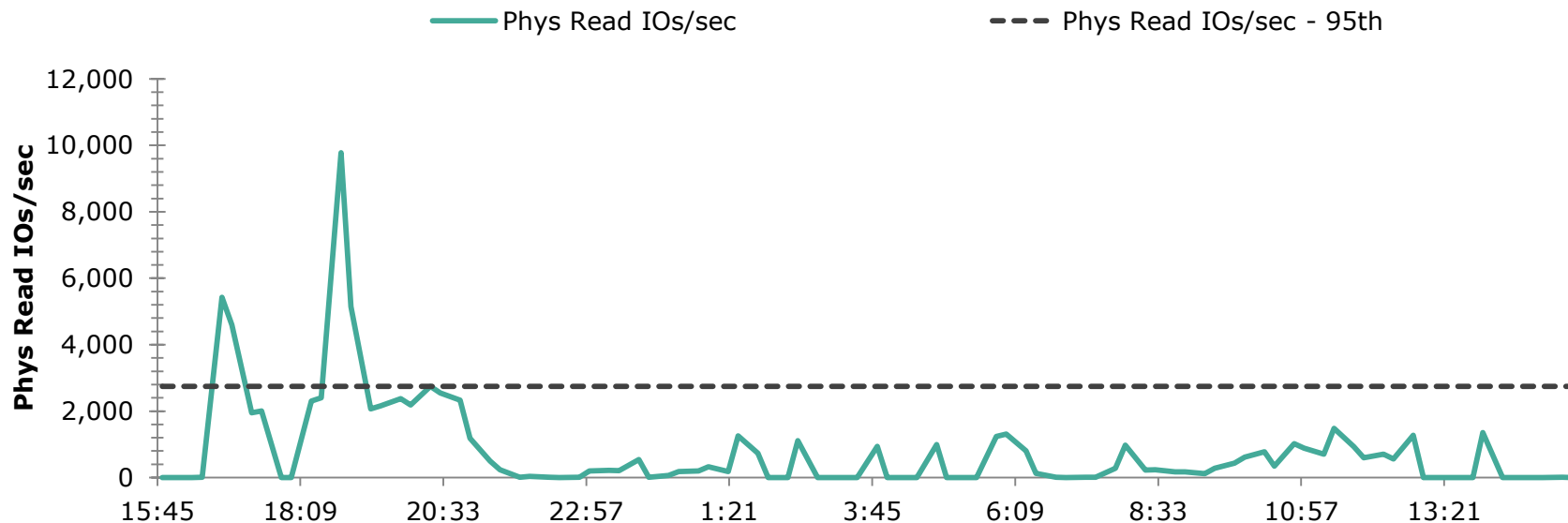
Handing the Keys to You

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Introducing VMAX Service Provider

Self-service, enterprise-class cloud storage delivery platform that accelerates time-to-value for Enterprise and Service Providers

ENTERPRISE CLOUD FASTER

- Easy self-service client portal
- Pre-configured service level catalog
- Pre-packaged usage, performance and chargeback reporting

- Engineered on EMC VMAX
- Automated provisioning
- Customizable reports
- REST APIs

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Advantages

Speed Access to Service

Reduce Cost

Faster Time-to-Value

Expanded Choice of Service

Self-Service Control

Automated Service Delivery

Pre-configured and Purpose Built

Every Tier is Enterprise-class

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Speed Access to Service

Self-Service Control

- Choose performance & capacity

- Change performance level anytime

- Reports on performance, usage and trends

- Improve accuracy of service levels

Diamond

Bronze

1-4 ms
Response time

10-40 ms
Response time

1.5/GB +
IOPS

Up to 0.05/GB
IOPS

Add Storage

Add Storage

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Reduce Cost

Automated Service Delivery

- Low touch management

- Purchase the way you consumed

- Reduce management cost up to 30%

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Faster Time-to-Value

Pre-configured and Purpose Built

- Up and running as soon as you provision

- Immediate service delivery

- Integrate with your orchestration
  - Multi-tenant reports built in
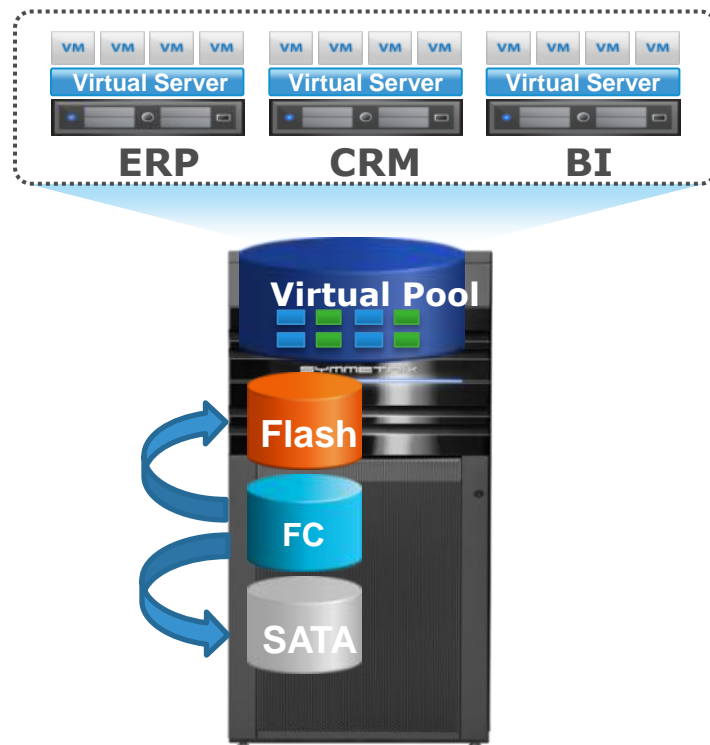 - REST APIs

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Expanded Choice of Service

Every Tier is Enterprise-class Storage

- The world's most trusted Tier 1 storage

- Most scalable

- Highest performance

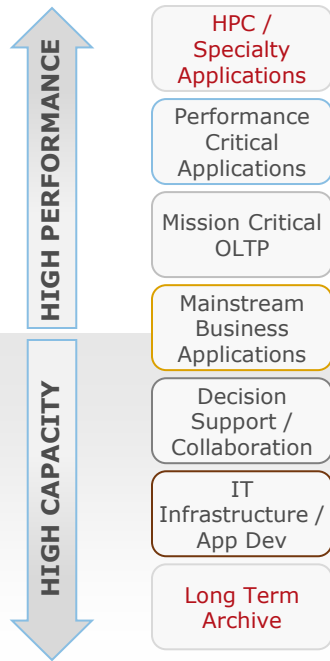- Mission critical availability

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Enterprise-class Storage For Oracle

- Auto-tier Oracle workloads across storage resources
  - 50-80% more TPM (OLTP)
  - 2-3x faster response time (BI/DW)
  - 80% faster tuning with no downtime

- Present more capacity in less time
  - Faster creation of storage pools
  - Reclaim over 55% un-used capacity with Oracle ASM integration

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18

What Do Your Applications Need?

APPLICATIONS

HIGH PERFORMANCE

HIGH CAPACITY

- HPC / Specialty Applications
- Performance Critical Applications
- Mission Critical OLTP
- Mainstream Business Applications
- Decision Support / Collaboration
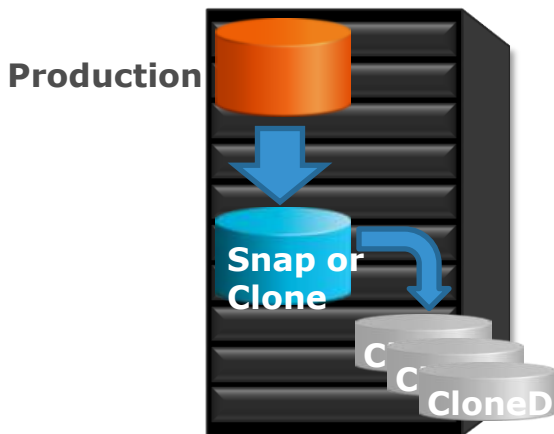- IT Infrastructure / App Dev
- Long Term Archive

EMC Symmetrix VMAX

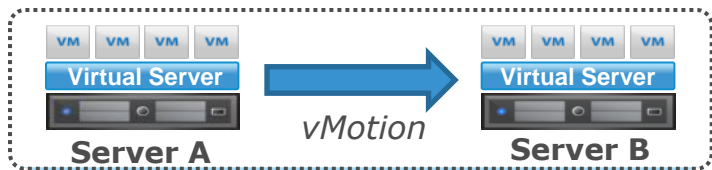## At every tier...

Reliability, Availability and Scale

- More than five 9s availability
- Performance and scale
- Encryption and Security

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Improve Oracle Replication Efficiency

- **Replicate Oracle in minutes**
  - Clones for full, consistent recovery
  - Snaps for space efficiency
    - Oracle CloneDB from snaps in seconds
  - GUI interface enables DBA control
- **Virtualization Effect:**
  - Move Oracle workload within or across virtual servers transparently
  - Provision production or test/dev servers in minutes vs. hours
  - Faster maintenance on servers without Oracle downtime

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Accelerate Oracle Recovery
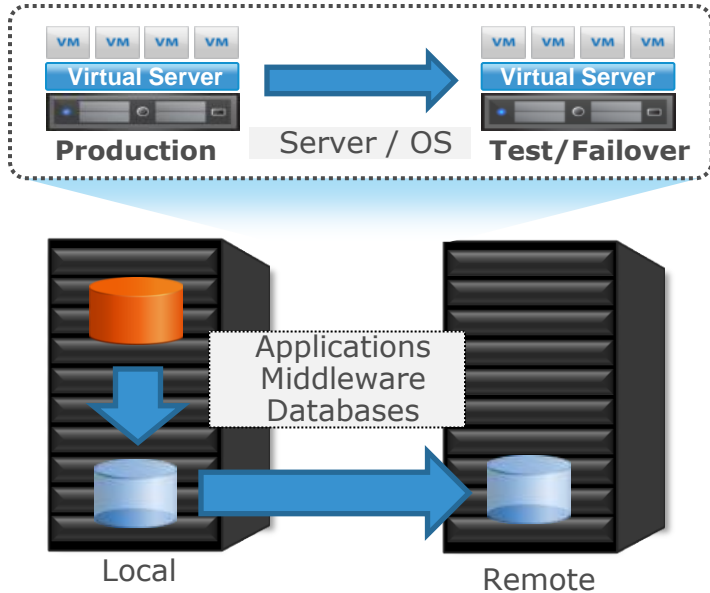
- **Concurrent local and remote replication for Oracle Applications *and* Databases**
  - DVR-like recovery to any point-in-time
  - Compress and de-dupe for 9x savings in bandwidth costs
  - Supports Oracle DataGuard
- **Virtualization Effect**
  - Failover Oracle virtual machines in minutes non-disruptively
  - Non-disruptive testing of recovery plans with less infrastructure

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Resources For Your IT Staff

EMC Proven Solutions

Optimize your existing Oracle software, people and process with EMC Proven Solutions
www.emc.com/virtualizingoracle

EMC Global IT Lessons Learned

Learn from EMC's own journey to the cloud for Oracle

Collaborate with EMC's Everything Oracle Community

@emcoracle

Everything Oracle at EMC Community for best practices, proven EMC and Oracle solutions, and real-time connections to your industry peers and subject matter experts: http://www.emc.com/everythingoracle

Technology Centers and live demos

EMC and Oracle Technology Centers (Atlanta, GA; Reston, VA; Menlo Park, CA, Santa Clara, CA; Hopkinton, MA; Cork, Ireland)

YOUR OPPORTUNITY:
Database Platform of Choice

GET THERE FASTER WITH:
VMAX Service Provider

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