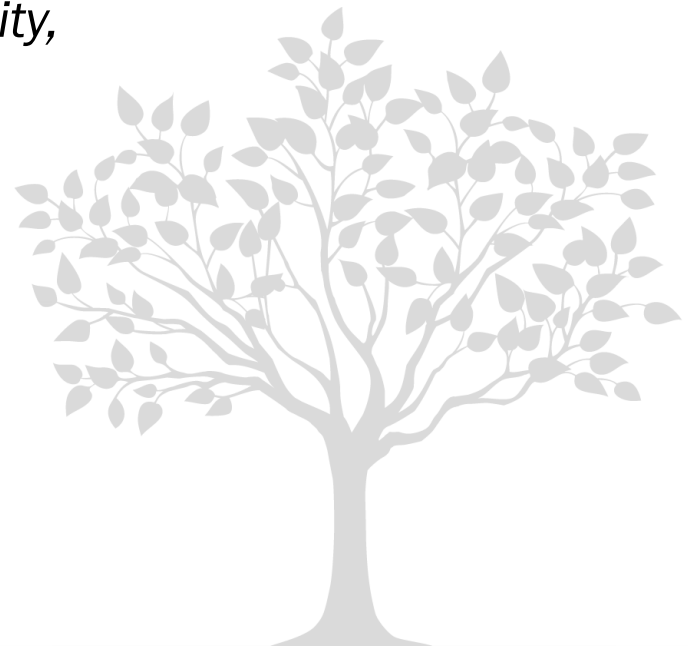


Database Virtualization

January 2011

Delphix virtualizes database infrastructure to provide complete, fully functional databases that operate in 1/10th the space, with improved agility, manageability, and performance



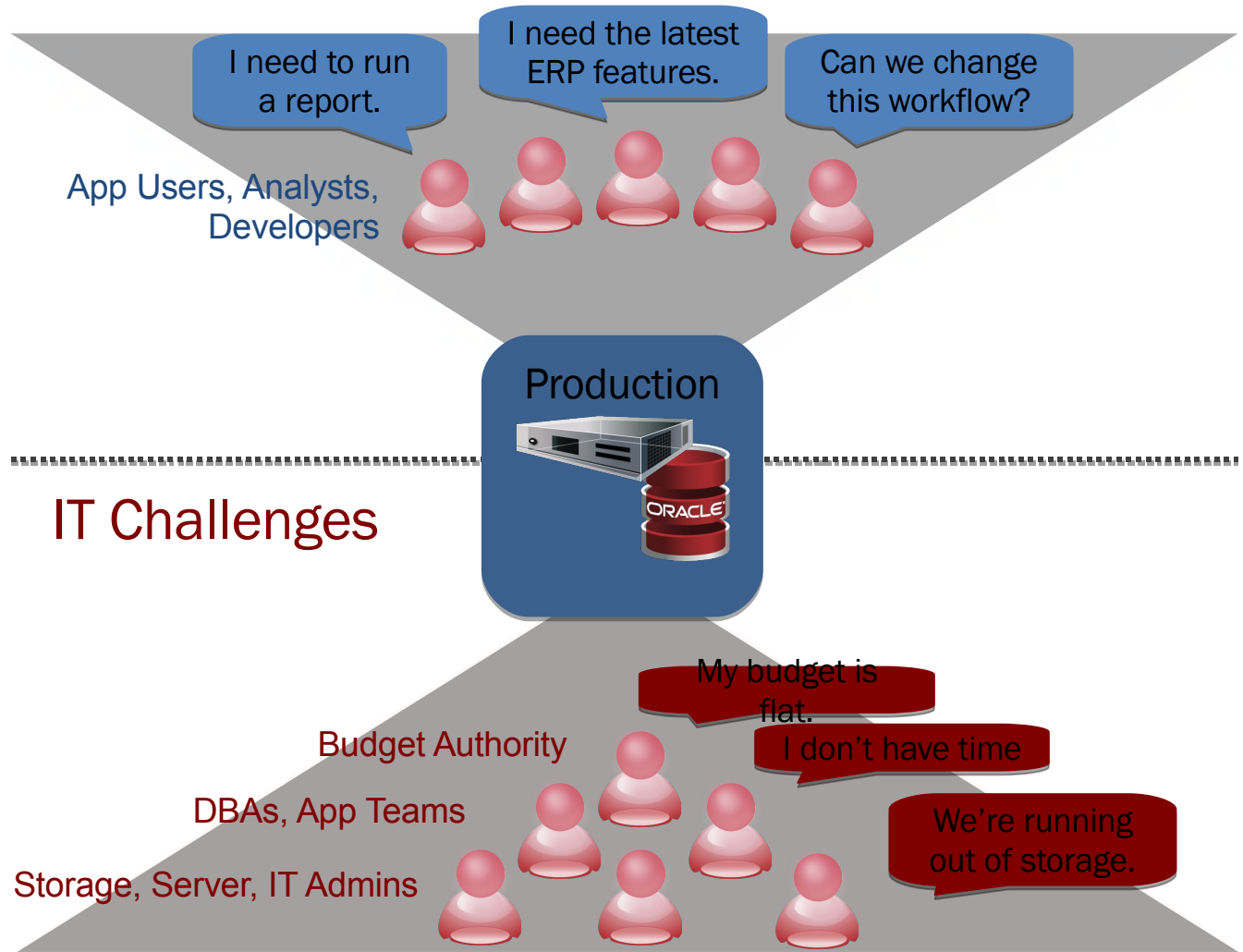
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-
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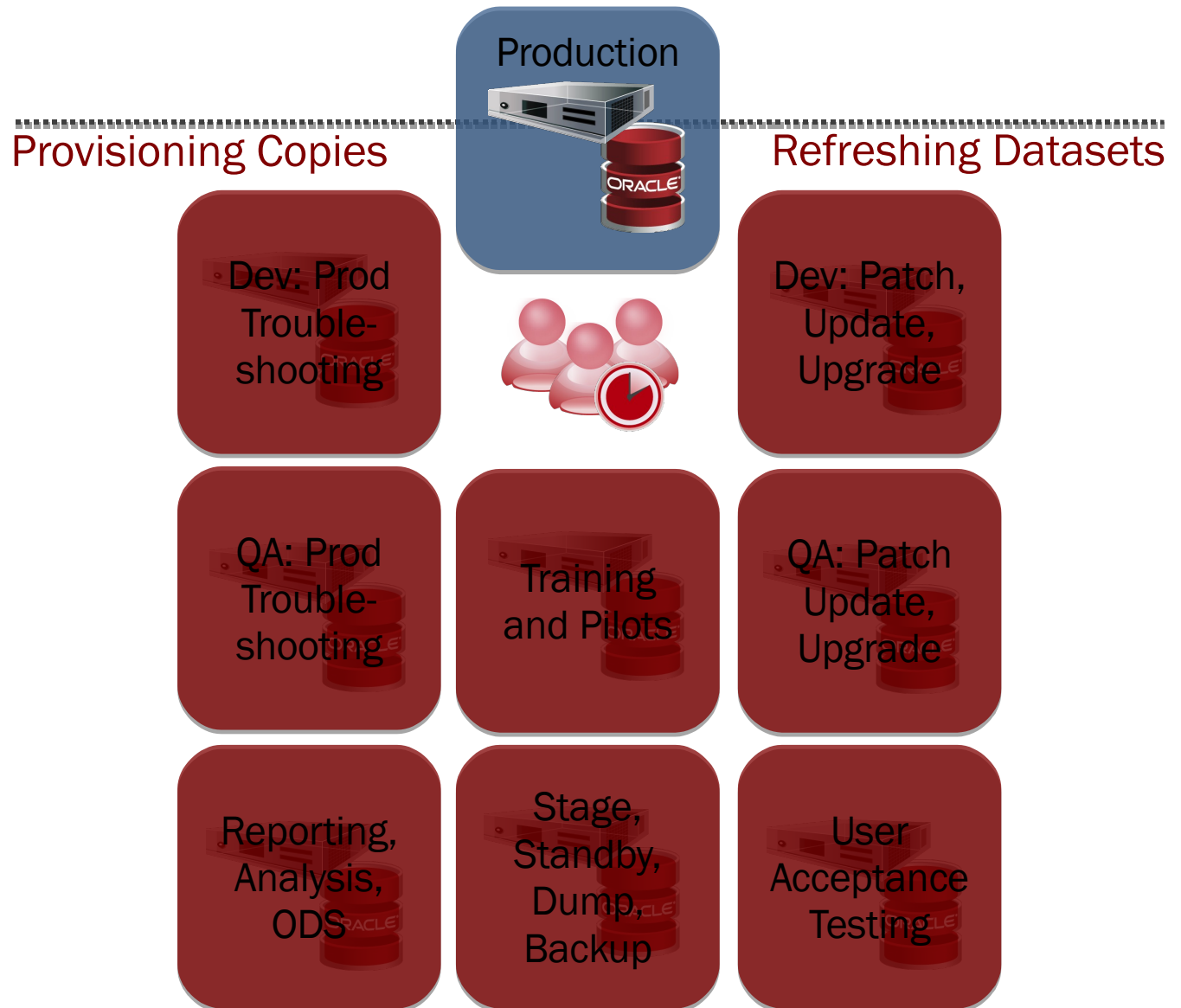
Business Needs

The Agility Dilemma



Applications Change with Business Needs

Beneath the
Surface:
Infrastructure
Drag



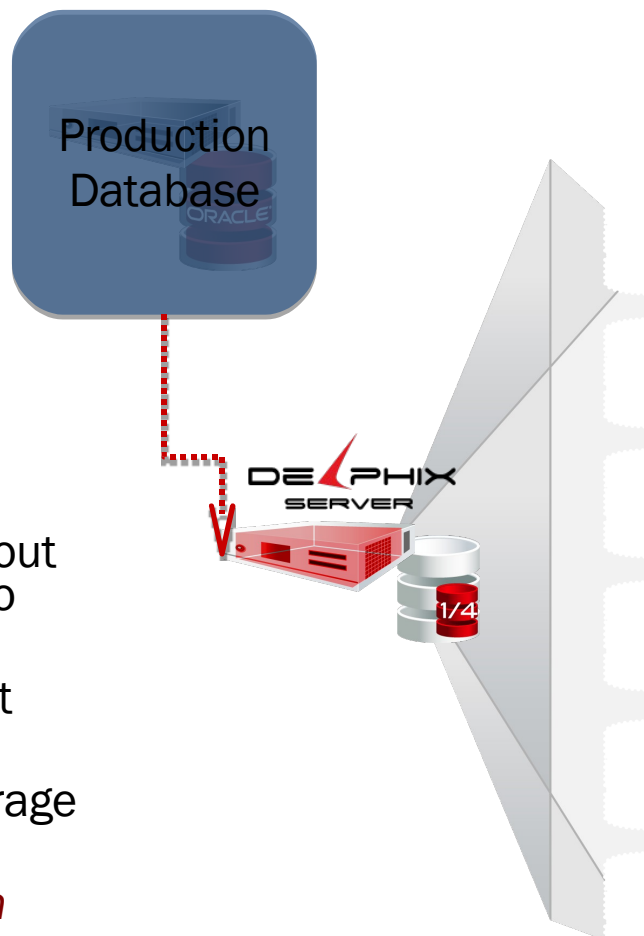
Database Virtualization:

Why make and move all these copies?



Single, Virtual Authority

- Accelerate: de-risk rollout of applications by up to 50%
- Simplify: save time, cut OpEx by up to 90%
- Consolidate: slash storage CapEx by up to 90%
- *ROI: fast payback from existing budget*



Accelerate. Simplify. Consolidate.

Application Support Today



SOURCE DBs

APP SERVER

Oracle E-Business Suite

NONPRODUCTION: EBS UPGRADE SUPPORT

Dev: R12 Data Mapping	QA: R12 Data Mapping	Dev: Customization Testing	QA: Customization Testing

DB SERVER

ORACLE 1 TB

ORACLE 1 TB	ORACLE 1 TB	ORACLE 1 TB	ORACLE 1 TB

STORAGE

1 TB

Dump to Disk, Backup

1 TB

1 TB	1 TB	1 TB	1 TB
01 Jan 2011 02:00:00	01 Feb 2011 02:00:00	01 Mar 2011 02:00:00	01 Apr 2011 02:00:00

Monthly/Quarterly Refresh: 10 Hours to 10 Days

Prod Support: 5 TB

90%+ Common, Repeated Data

SOURCE DBs	
APP SERVER	Oracle E-Business Suite

NONPRODUCTION: EBS UPGRADE SUPPORT			
Dev: R12 Data Mapping	QA: R12 Data Mapping	Dev: Customization Testing	QA: Customization Testing



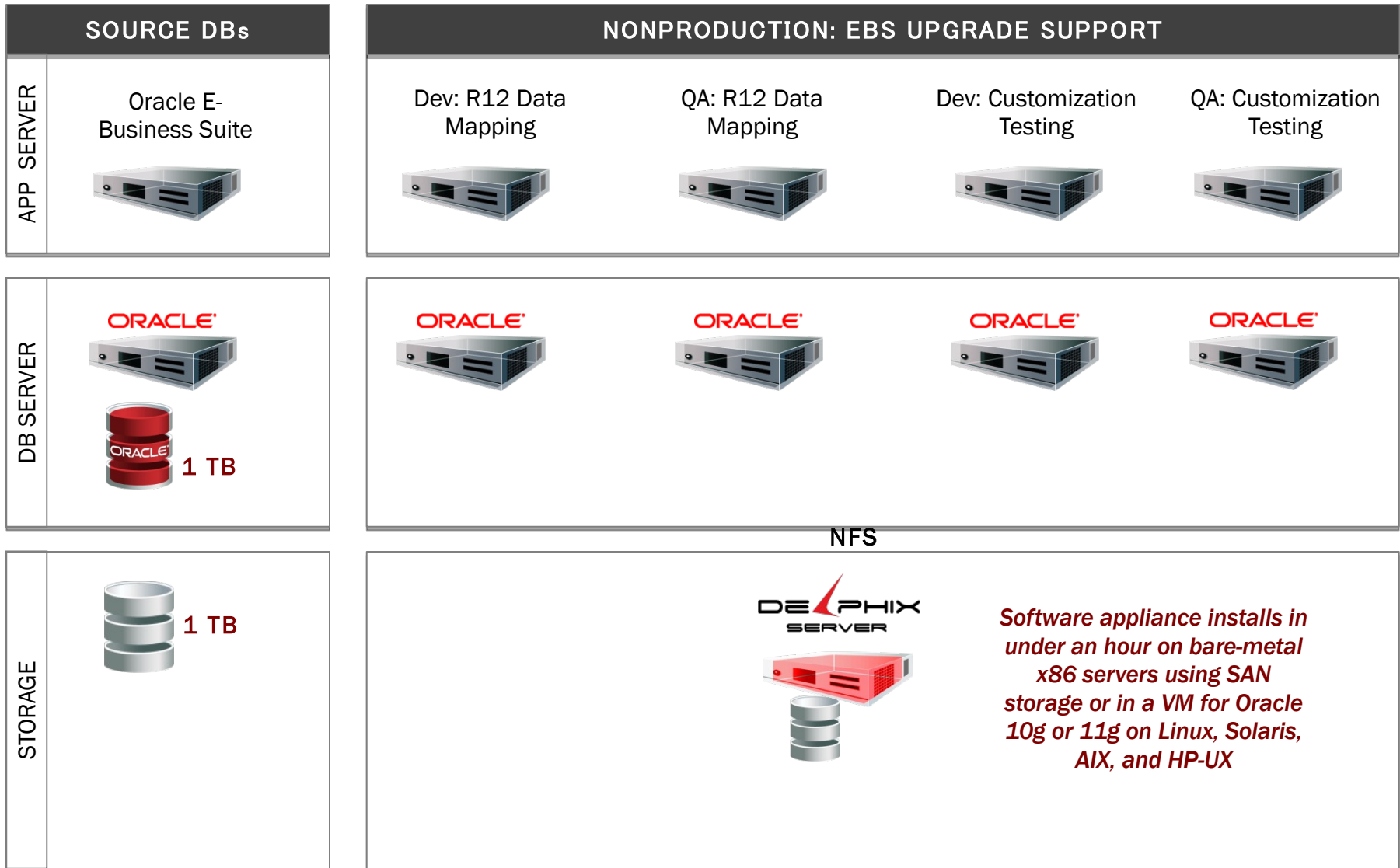
**95% of data blocks are repeated.
 What if you could share all the repeated blocks, eliminate unnecessary blocks, and compress along block boundaries?**



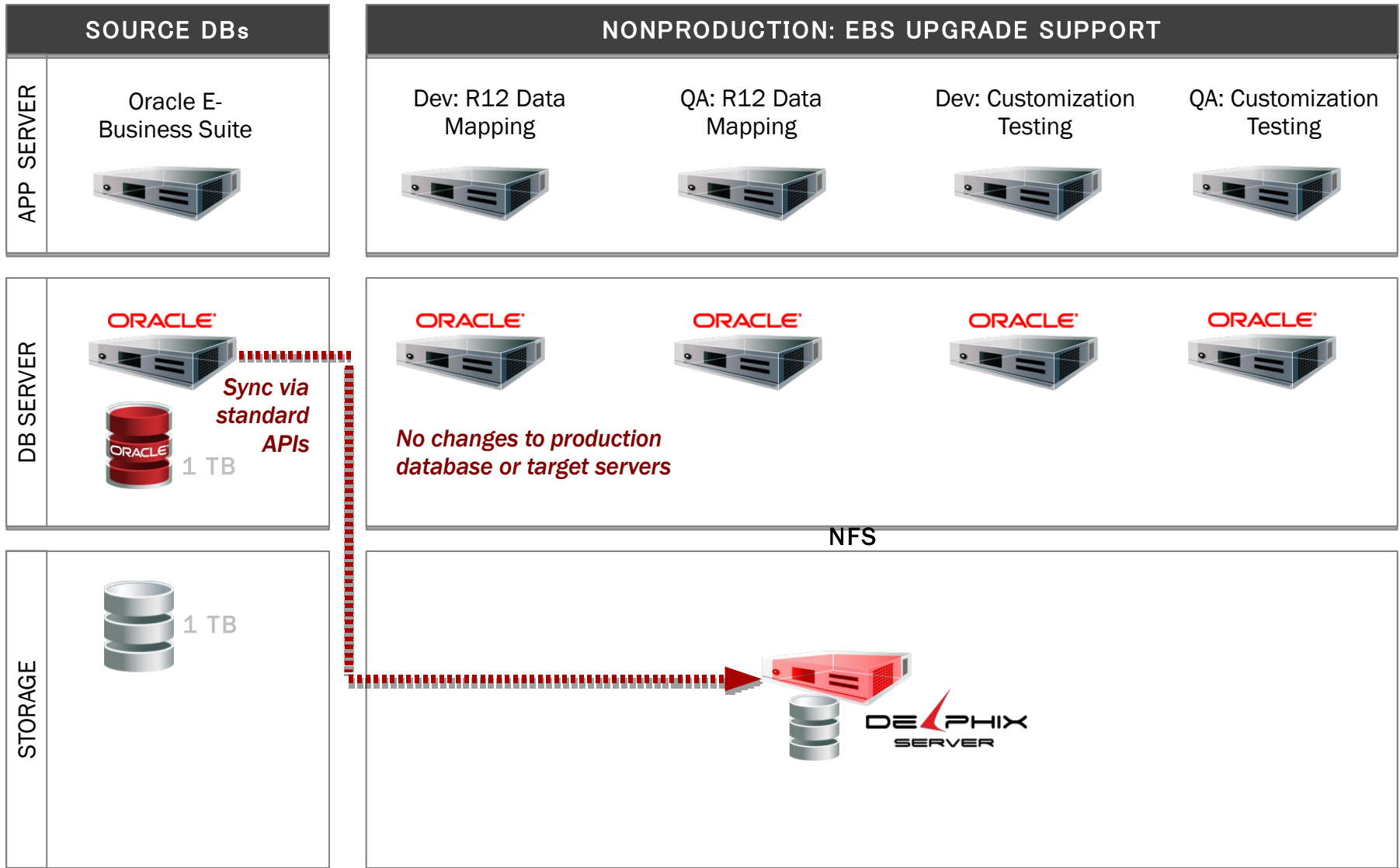
Key

- Data block
- Empty or temporary block
- Changed data block
- Changed data block

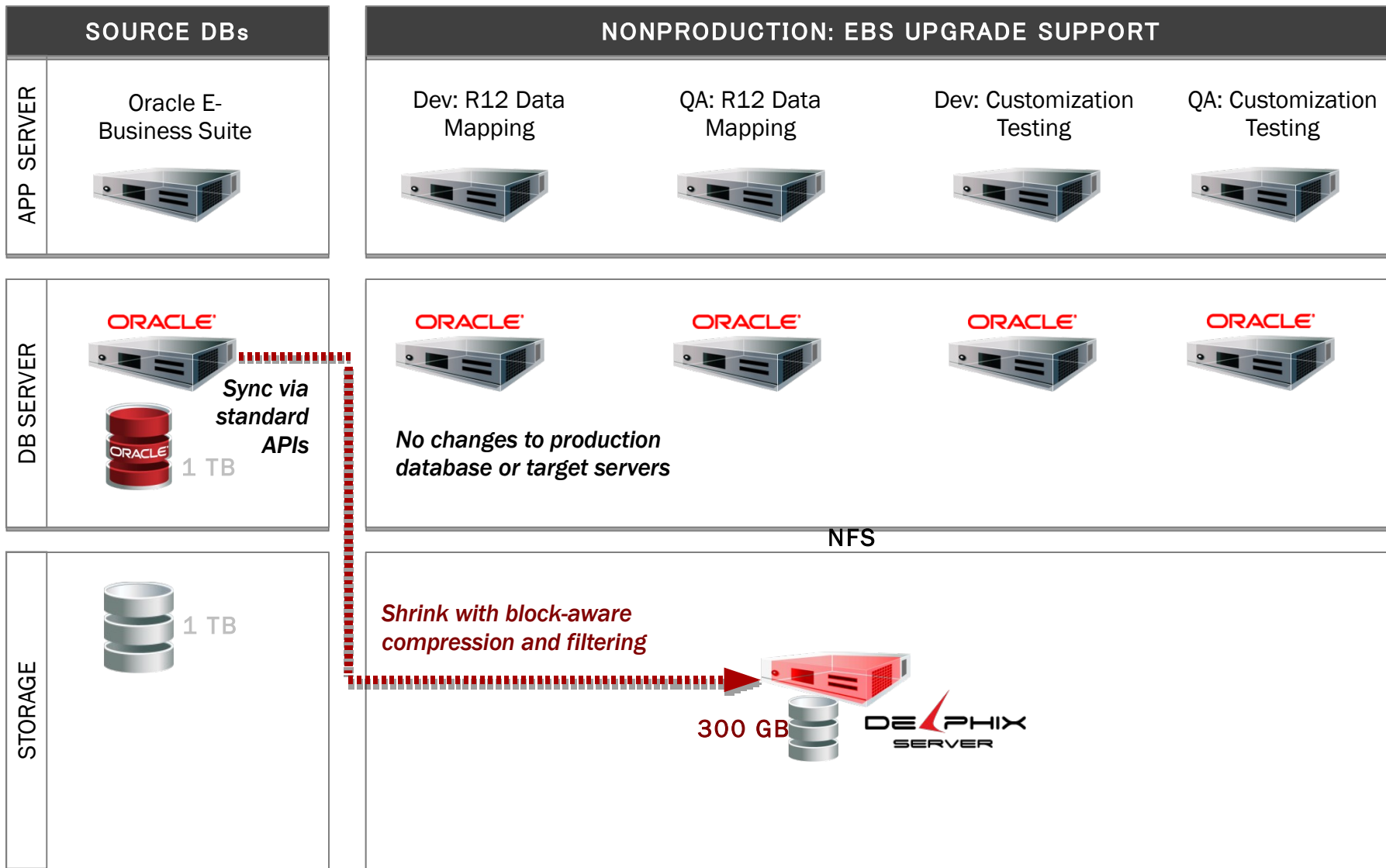
Fast, Non-disruptive Deployment



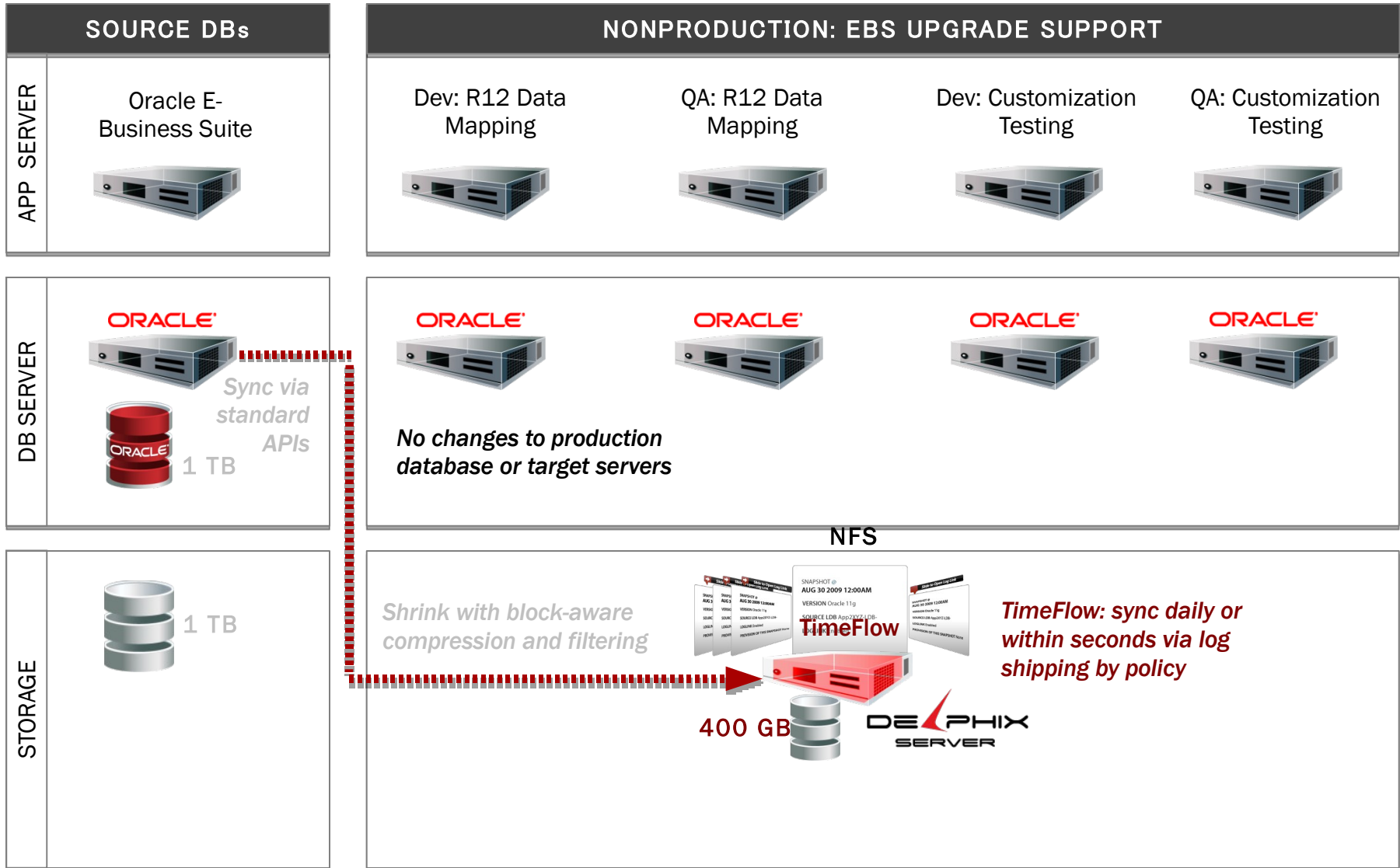
Gold-Certified ISV Partner with Oracle



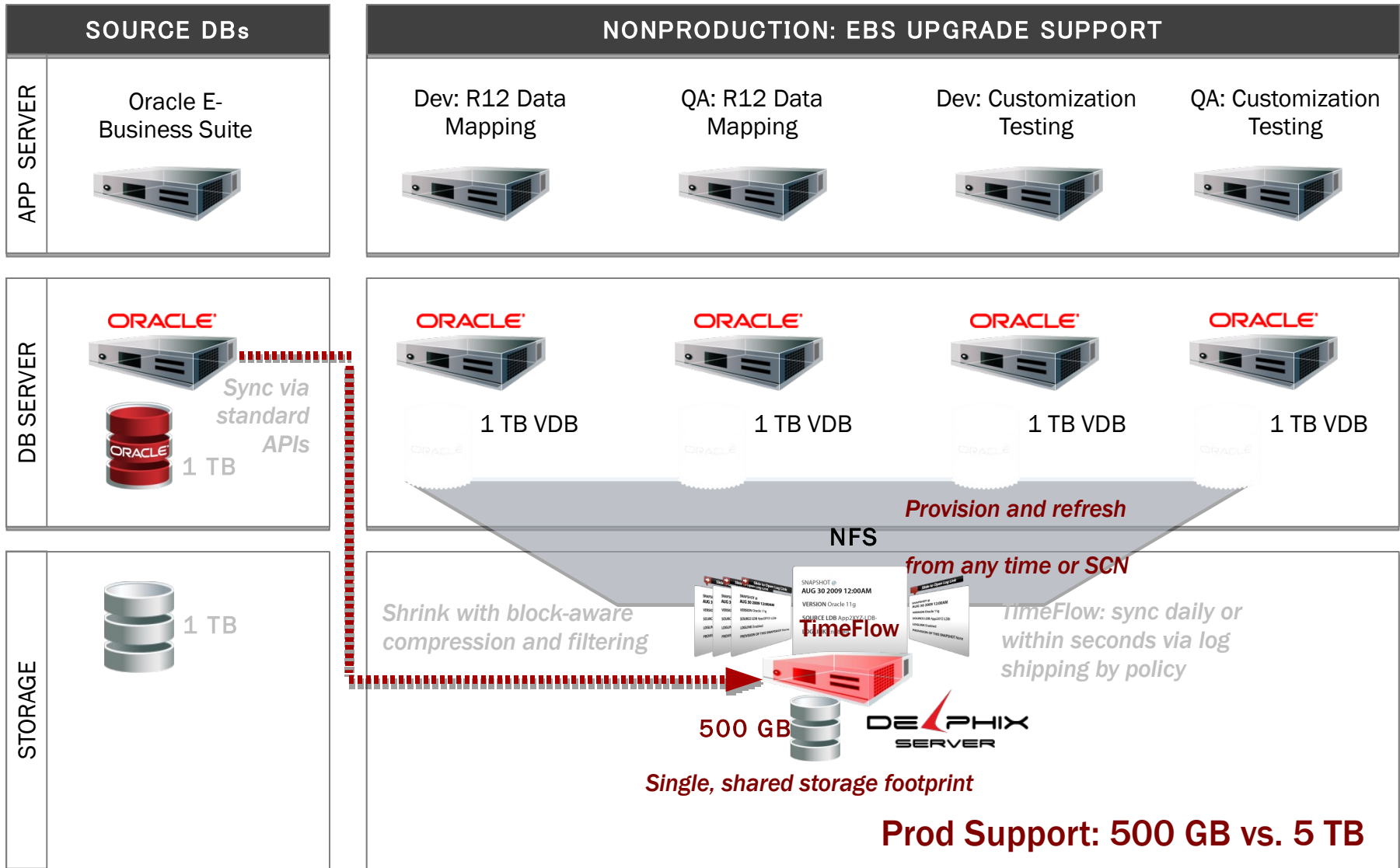
Shrink and Load: 2-4x Reduction



TimeFlow: Sync Changes Only and Refresh



Instantly Provision VDBs



From 10 Hours to 3 Clicks

The screenshot shows the TimeFlow Manager web application interface. The browser address bar displays `http://172.16.100.227/Server.html#/Time%20Flow%20Manager`. The application header includes the DEPHIX logo, navigation tabs (Databases, Manage, Resources, System, Help), a Dashboard indicator, and user information (Active Jobs (0), delphix_admin, Log Out).

On the left, a sidebar lists databases under CRM, ERP, and HRMS categories. The main content area displays a list of SnapSync jobs for the 'erp' database. A modal window titled 'Snapshot' is open, showing details for a snapshot taken on Sep 09 2010 at 5:53:10 PM EDT. The snapshot details include: Source Database: erp, Database Version: ORACLE 10.2.0.4.0, Compatibility: 10.2.0.3.0, and Host OS: Linux Red Hat Enterprise Linux OS Server release 5.3 (Tikanga).

On the right, a 'Host Servers' panel shows details for 'LinuxTarget2', including Host Address (172.16.100.247), OS (Linux Red Hat Enterprise Linux), CPU/RAM (x86_64 / 3,950.0 MB), Time Zone (EDT), and compliance status. A 'Provision' button is visible at the bottom of this panel.

At the bottom, a control bar includes an 'Input Accurate Time' field set to Sep 09 2010 5:53 PM, a 'Slide to Provision by SCN' slider, and buttons for 'Provision', 'V2P', and 'Delegate'. A 'No LogSync Delay' indicator is also present.

Three red callout boxes highlight key features:

- TimeFlow: file and log changes retained by policy** (pointing to the SnapSync job list)
- Sync with Source DBs through standard APIs** (pointing to the SnapSync job details)
- Set up host DB servers for automated provisioning** (pointing to the Host Servers panel)

Time Machine: Integrated Log Shipping

The screenshot shows the Time Flow Manager web interface. The browser address bar displays `http://172.16.100.227/Server.html#/Time%20Flow%20Manager`. The interface includes a navigation menu with 'Databases', 'Manage', 'Resources', 'System', and 'Help'. A 'Dashboard' indicator is visible in the top right. The main content area features a central 'Snapshot' window and a timeline of events.

Snapshot Details:

- Slide Back to Snapshots
- Snapshot: Sep 09 2010 6:54:59 PM EDT
- Source Database: erp
- Database Version: ORACLE 10.2.0.4.0
- Compatibility: 10.2.0.3.0
- Estimated Provision Time: 1 min

Timeline of Events:

- Sep 09 5:53:10 PM
- 6:29:12 PM
- 6:54:15 PM
- 6:54:59 PM (dSource)
- 7:32:17 PM
- 7:59:20 PM
- 8:26:22 PM
- 9:02:25 PM
- Sep 09 9:52:42 PM

A red arrow points to the '6:54:59 PM' event, which is labeled 'dSource'. Below this event is a button labeled 'SCN' with a right-pointing arrow.

Host Servers Panel:

- LinuxSource
- LinuxTarget
- LinuxTarget2
 - Host Address: 172.16.100.247
 - OS: Linux Red Hat Enterprise Linux Server release 5.3 (Tikanga)
 - CPU/RAM: x86_64 / 3,950.0 MB
 - Time Zone: EDT
 - Link Compliance: [Progress Bar]
 - Provision Compliance: [Progress Bar]
 - Buttons: Provision, Refresh, Delete, Edit

Provision, refresh down to the second or SCN for root-cause analysis, etc.

Green IT Architecture Award



Delphix Server: 2 Source DBs and 10+ Supporting Copies

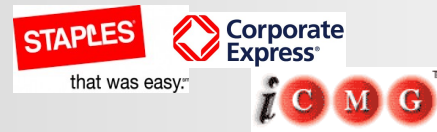
	PHYSICAL		VIRTUAL		SAVINGS
Consolidate: Supporting					12+:1

With 12:1 consolidation, Staples justified the purchase with immediate savings from an existing storage budget



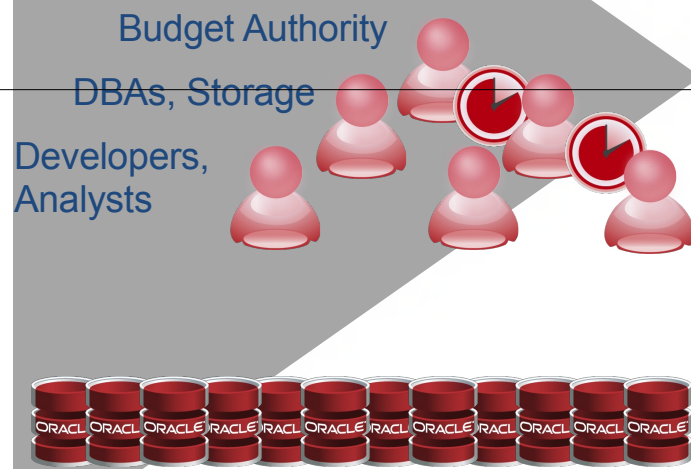
*~3 TB in production databases and SAN storage cost of \$11/GB, plus maintenance over 3 years

Green IT Architecture Award



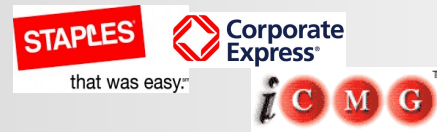
Delphix Server: 2 Source DBs and 10+ Supporting Copies

	PHYSICAL	VIRTUAL	SAVINGS
	<p><i>With our intuitive interface, they enabled developer and analyst self service, which allowed data refreshes on demand, reducing risk during application rollouts</i></p>		
Simplify: Approval Levels			Operational Efficiency
Consolidate: Supporting			12+:1

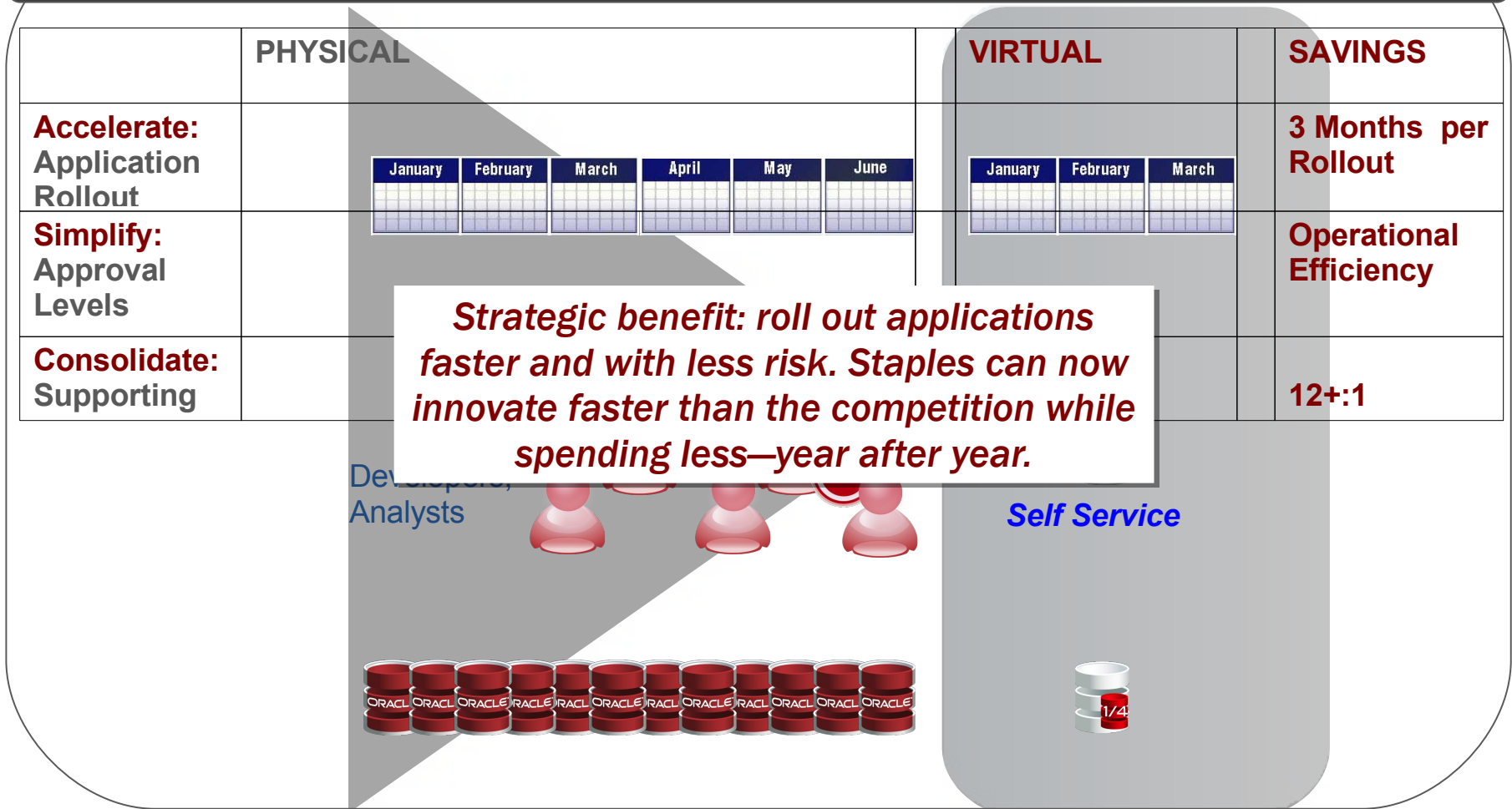


*~3 TB in production databases and SAN storage cost of \$11/GB, plus maintenance over 3 years

Green IT Architecture Award



Delphix Server: 2 Source DBs and 10+ Supporting Copies



*~3 TB in production databases and SAN storage cost of \$11/GB, plus maintenance over 3 years

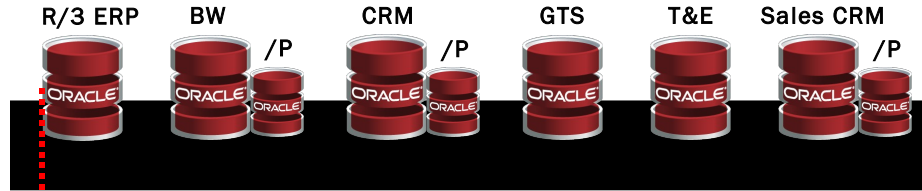
Combine Prod Support and DR

STAPLES

that was easy.™

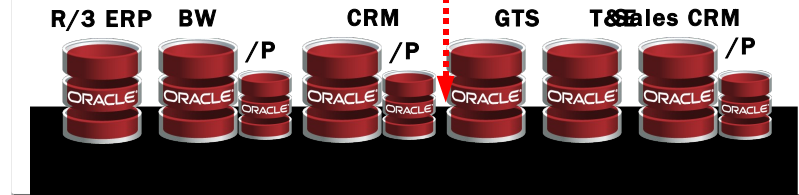
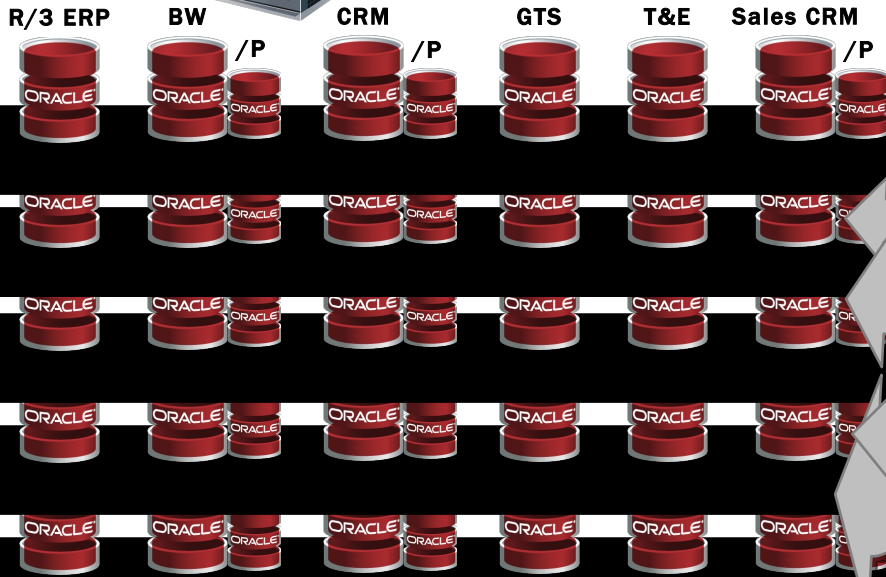


ORACLE



PRIMARY DATACENTER

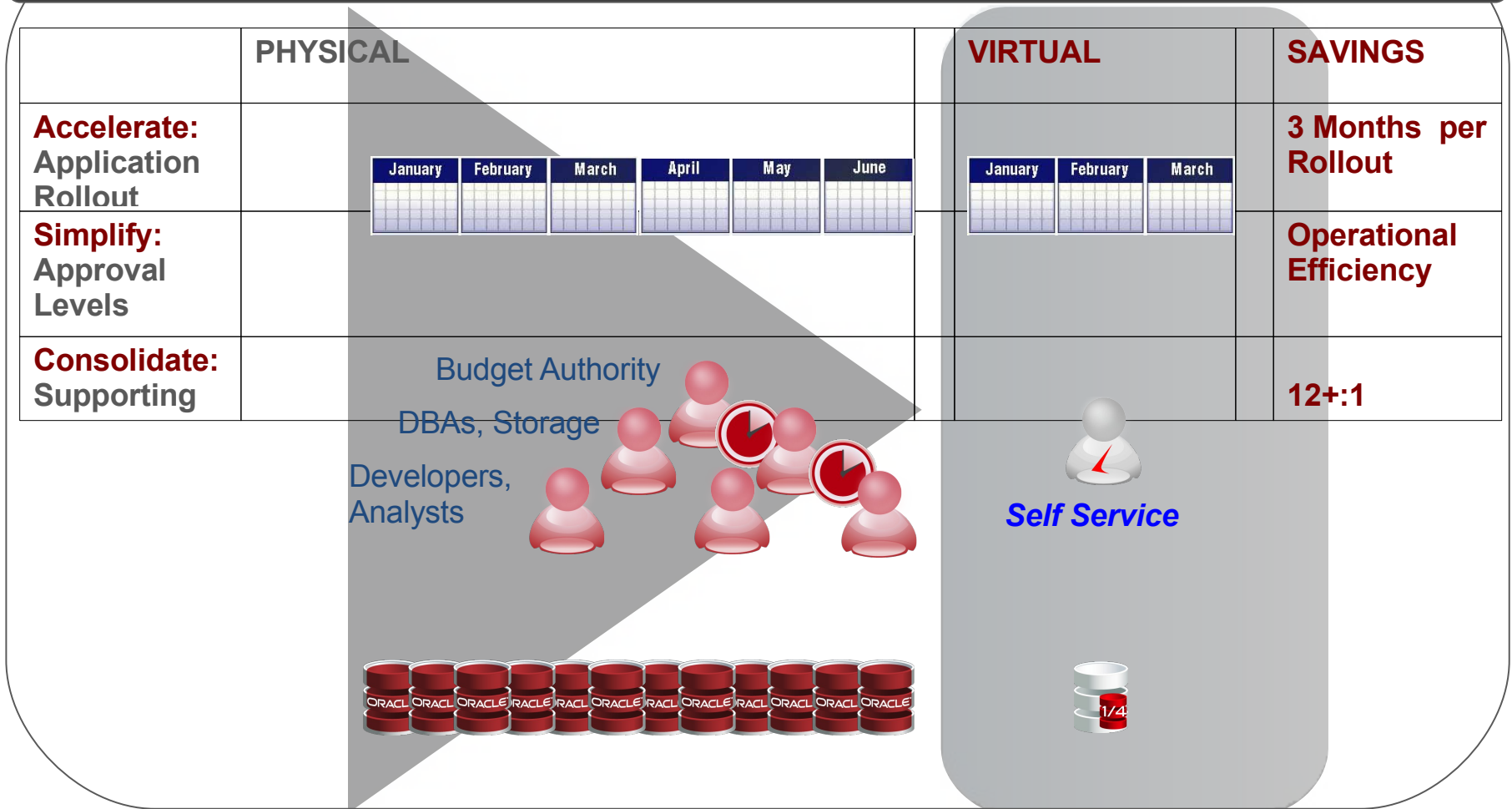
DR DATACENTER



Green IT Architecture Award



Delphix Server: 2 Source DBs and 10+ Supporting Copies



*~3 TB in production databases and SAN storage cost of \$11/GB, plus maintenance over 3 years

Quantitative Customer Value

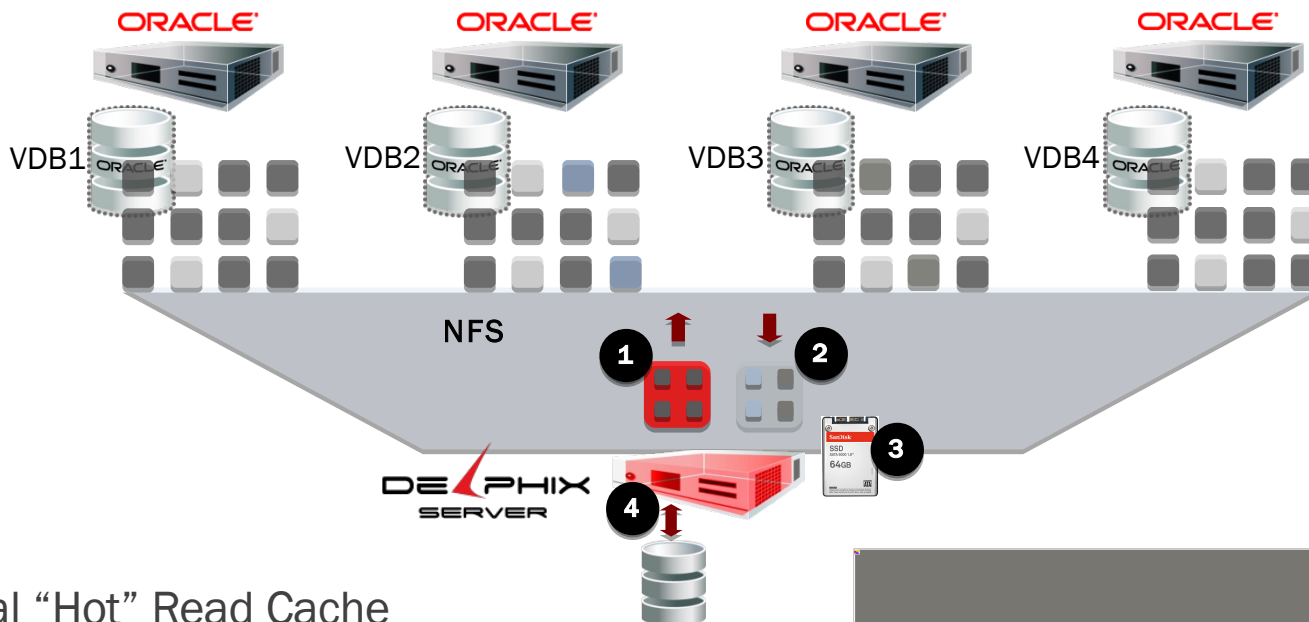
Name	Ceiling	Floor	Used	Unvirtualized	Savings Ratio	Keep Until
Group-Default			0	0	1,481,337.8 : 1	
SAPKBQ			516,069	20,220,146	1,489,537.8 : 1	
KBQ			512,730	1,126,230	2.1 : 1	Forever
KBX	0	0	3,114	1,126,230	361.6 : 1	Forever
SAPKRQ			710,520	35,609,507	1,481,337.8 : 1	
KRQ			649,477	1,481,337	2.2 : 1	Forever
KRX	0	0	48,835	1,481,337	30.3 : 1	Forever
VKRZ	0	0	1,923	1,481,337	770.3 : 1	Forever

<p>SuccessFactors Business Execution Software</p>	48 : 1	<p>clearwire</p>	29 : 1	<p>STAPLES</p>	49 : 1
<p>KLA Tencor Accelerating Yield</p>	46 : 1	<p>TiVo</p>	20 : 1		

“Delphix saves us money by eliminating redundant hardware. But my favorite part is that it frees up our key resources to focus on more important tasks.”

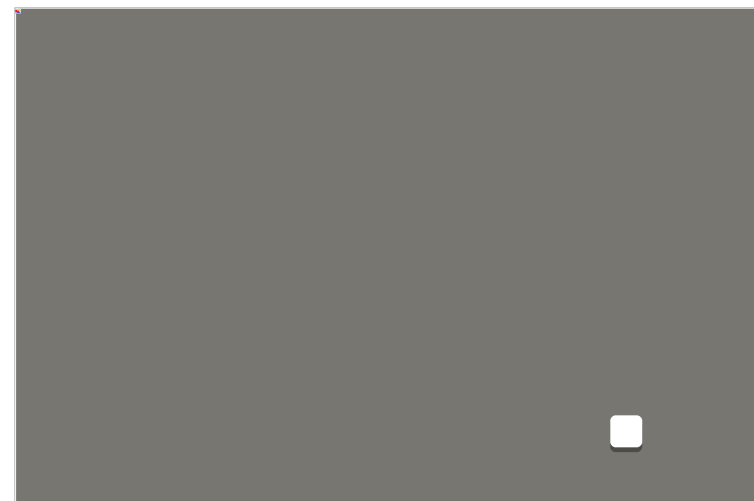
—Richard Rothschild, Senior Director of IT

Built for VDB Performance



- 1 Global "Hot" Read Cache
- 2 Global Write Log
- 3 SD Flash Cache
- 4 In-the-Fly Compression, De-compression

Combined technologies maximize performance per disk spindle assigned to a Delphix Server. Physical disk spindle movement often the slowest link in database performance.



Quality of Service for Performance

Resource Performance M... x

http://172.16.100.227/Server.html#/Resource%20Performance%20Monitor

DEPHIX Databases Manage Resources System Help Dashboard Active Jobs (0) delphix_admin Log Out

Databases Performance Management (Unit: Mbps) Zoom -> Max Date Range: Sep 09 11:25 AM - Sep 10 9:24 AM

99% Available at Current Peak Usage (Max 953 Mbps)

P2 Consumer Guarantee 953

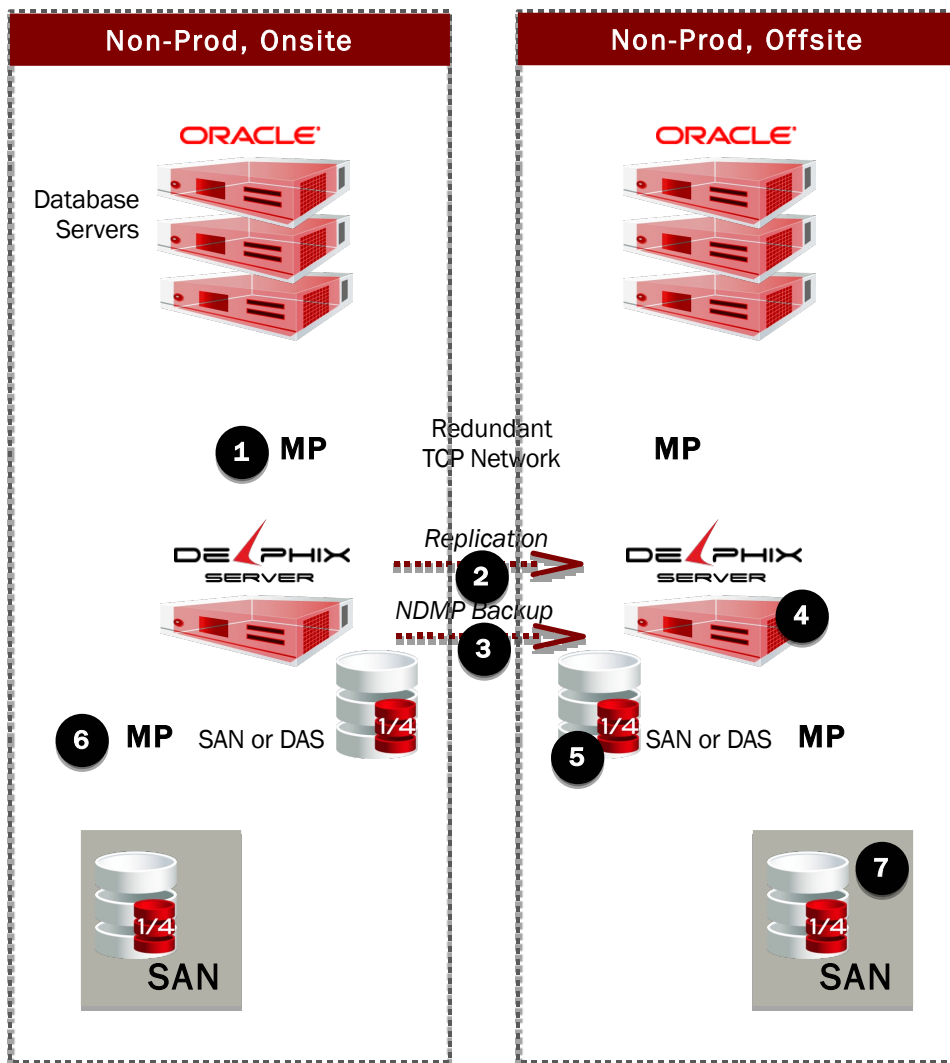
Set or reset priority classes on the fly

See which VDBs consume resources

Set ceilings, floors per VDB as needed

Advanced

Database	Activity	Group	Highlighted Usage	Time	Priority	Max Allocation
hms	LGS	HRMS	0	Sep 10, 10 7:24 AM	P2	954
hms	SNS	HRMS	0.0186	Sep 10, 10 7:24 AM	P2	954
			0	Sep 10, 10 7:24 AM	P2	954
			0	Sep 10, 10 7:24 AM	P1	954
Verp-QA	VDB	ERP	0	Sep 10, 10 7:24 AM	P1	954
Verp-test	VDB	ERP	0	Sep 10, 10 7:24 AM	P1	954



Flexible, Resilient Architecture

- 1 Network multipath Support (NICs)
- 2 Zoning: replicate within, across sites
- 3 Backup via NDMP to 3rd party
- 4 Application availability
 - Internal bus for online patch, upgrade, updates for modules
 - Fast system upgrades: quick reboot, integrated rollback
- 5 Software mirroring, RAID support
 - End-to-end integrity checking
- 6 SAN multipath support
- 7 SAN mirroring, RAID, replication

Security: Data Masking, Obfuscation















“Test data should be protected as if it were production data.”

—Noel Yuhama, Forrester analyst

- Consolidate all copies into a single source
 - Full audit logging
 - Single point of control and security
- Automate masking data to meet compliance, other requirements
 - Tested with IBM Optim
 - Automatic trigger of existing scripts



Key Benefits by Company, Industry

Customer	Industry	Use Case	Key Benefit
  that was easy.™	Retail, Office Supplies	Streamline SAP Rollout	SAP Self-Service Provisioning
 	Online Shopping	Improved Development	From Bi-monthly to Daily Refreshes
	Communications Equipment	Improved Development	Self-Service Development Sandboxes
	Consumer Goods	Streamline SAP Rollout	SAP Refreshes from Weeks to Minutes
 wireless broadband	Telecommunications	Flexible Reporting	Off Prod Operational Reporting
	Finance	Flexible Reporting	Off Prod Operational Reporting
 The Data Integration Company™	Business Software	Improved Development	Self-Service DBA Provisioning, Refresh
	Travel, Cruise Lines	Cost effective DR	14:1 Storage Consolidation
	Medical Instruments	EBS Upgrade	Faster, Lower Risk EBS Upgrade
 Because health matters.	Pharmaceuticals	Improved Development	20:1 Storage Consolidation
	Personal Peripherals	EBS Storage Reduction	EBS Refresh from Hours to Minutes
	Cable Television Systems	Improved Development	Self-Service Development Sandboxes

Accelerate

Reduce Project Risk, Timelines by up to 50%

- Roll out new applications, improvements faster than competitors
- Reduce barriers to experimentation, parallel development
- De-risk projects with faster root-cause analysis, flexible testing

Simplify

Enable Self-Service, Reduce OpEx by up to 90%

- Eliminate cross-team coordination for provisioning, refresh
- Designed for DBAs, developers to manage
- Powerful, intuitive interface with flexible roles, policies

Consolidate

Reduce Storage, Costs by up to 90%

- Shared footprint for supporting copies: development, testing, QA, pilots, training, UAT, reporting, etc.
- High RPO, RTO at low cost: integrated log shipping, data protection
- Use any storage or install in a VM

>> Pilot the Product: Identify the Initial Application and Databa

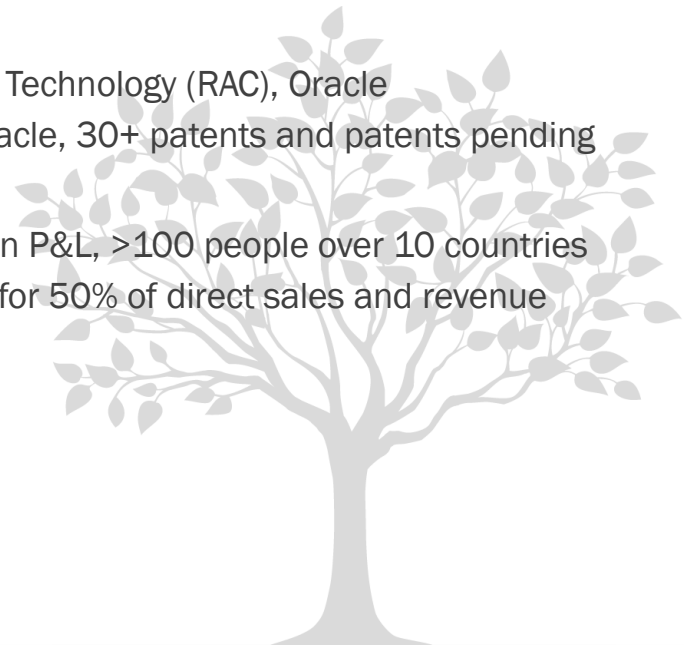
Thank You

For more information, please contact us at sales@delphix.com.



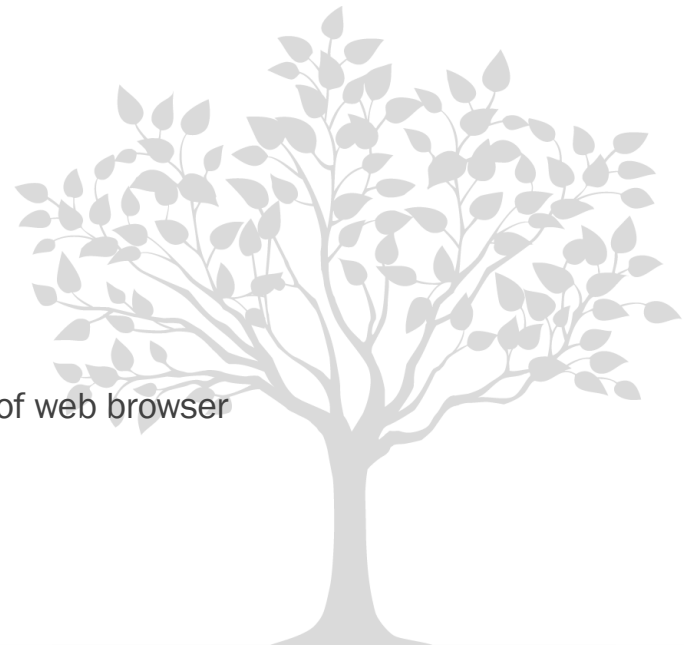
Management Team

- **Jedidiah Yueh, President and CEO**
 - Founded Avamar in 1999, sold to EMC in 2006, VP Product Management at EMC
 - Pioneered de-duplication industry (>\$1 billion '09, Avamar >\$1 billion lifetime '11)
- **Karthik Rau, VP Products and Marketing**
 - VP Worldwide Marketing, VMware, reporting to Diane Greene and Paul Maritz, 2007-2009
 - VP Product Management, VMware; exec staff, led server product roadmap from 2002 -2007
- **Bertrand Yansouni, VP WW Field Operations**
 - EVP Worldwide Field Operations, Coverity
 - VP Channel Sales, Riverbed; Director Channel Sales, VMware
- **Alok Srivastava, VP Engineering**
 - Director of Engineering, Clusters and Parallel Storage Technology (RAC), Oracle
 - Products responsible for ~\$2 billion in revenue for Oracle, 30+ patents and patents pending
- **Kaycee Lai, Director Strategic Accounts**
 - Head of BURA business unit for EMC with \$120 million P&L, >100 people over 10 countries
 - Top performing sales director at Avamar, responsible for 50% of direct sales and revenue
- **Kirk Bowman, Executive Director**
 - EVP Field Operations, VMware
 - EVP Field Operations, EqualLogic



Board and Investors

- **Arnold Silverman: Independent Board Member**
 - Founding Board Member, Oracle; Co-founder, Business Objects
 - Other investments: Informatica, Kiva, TimesTen
- **Chris Schaepe, Lightspeed Managing Director**
 - Founder of Lightspeed; Board Member, Riverbed
 - Goldman Sachs (Finance), IBM (Software Engineering)
- **Asheem Chandna, Greylock Partner**
 - VP PM & BD, Check Point Software
 - Board Member, Sourcefire, Palo Alto Networks, Imperva
- **Kirk Bowman, Board Member**
 - EVP Field Operations, VMware
 - EVP Field Operations, EqualLogic
- **Jit Saxena, Investor**
 - Founder, Netezza
 - Former Chairman and CEO, Netezza
- **Andreessen Horowitz**
 - Marc Andreessen, Co-founder, Netscape, co-inventor of web browser
 - Ben Horowitz, Founder and CEO Opsware



Engineering Team

- **Matt Ahrens, Architect**
 - Co-founder and largest contributor in lines of code for ZFS at Sun/Oracle
 - ZFS: arguably most advanced FS in the market with over \$100 million in revenue
- **Vinay Srihari, Architect**
 - Director Software Development, High Availability at Oracle
 - Responsible for products including Data Guard, Active Data Guard, RAC, and Exadata
- **Adam Leventhal, Architect**
 - Co-inventor of Dtrace: self-healing systems analytics software won WSJ Innovation Award
 - Inventor of the Hybrid Storage Pool, responsible for Flash strategy and roadmap at Sun
- **George Wilson, Architect**
 - Key architect for ZFS, owning all major modules outside of Matt Ahrens
 - Principle engineer at Oracle/Sun
- **Kyle Hailey, Performance Architect**
 - Industry-recognized performance expert for Oracle, co-author of *Oracle Insights*
 - Designed performance monitoring/analysis for Oracle Enterprise manager
- **Eric Schrock, PMTS**
 - Senior Principal Software Engineer at Oracle, Architect for Sun Storage 7000
 - Technical lead for Oracle distributed data management strategy

