



i n v e n t

**A Powerful Combination**



# Agenda

- HP and VERITAS relationship in brief
- HP and VERITAS market position
- VERITAS Storage Management
- Cases Scenarios
- Questions

# HP and VERITAS

## A Powerful Combination



- Committed to our great relationship with each other as key technology providers delivering the best solutions for your business
  - **HP's leadership in servers and storage**
  - **VERITAS' leadership in Storage Management/Virtualization**

# HP & VERITAS –

## Strengthening the Relationship



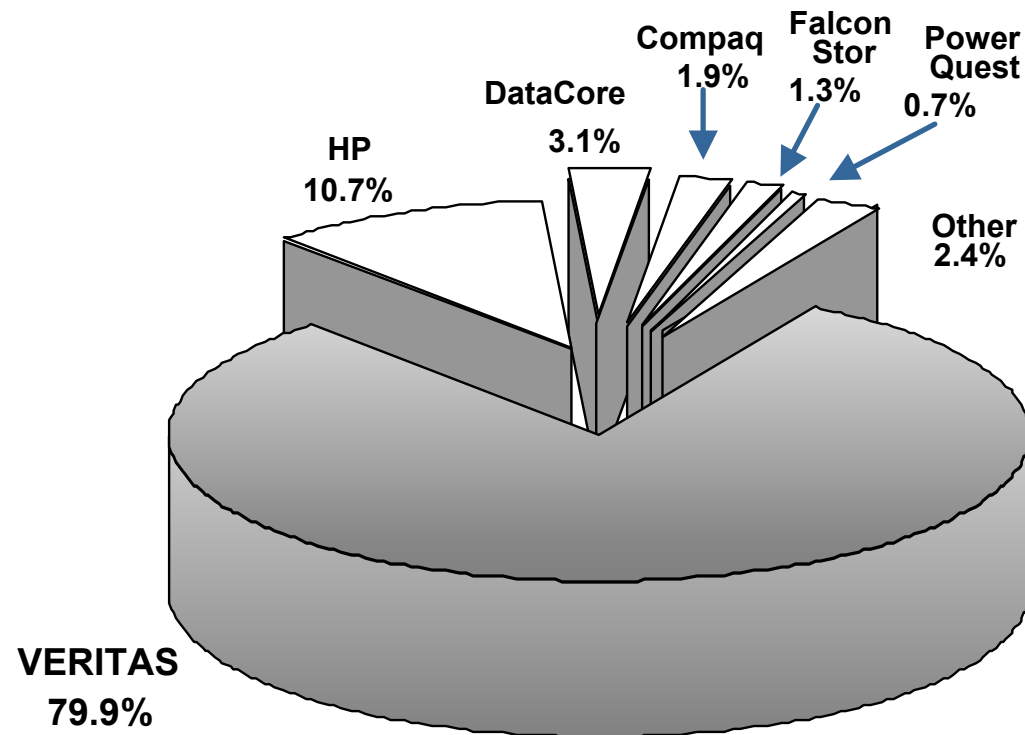
- **1989:** HP resells the entire, multi-platform VERITAS product line
- **1993:** HP OEMs VERITAS File System as Online JFS
- **2000:**
  - Lite versions of VERITAS File System (JFS) and VERITAS Volume Manager included with HP-UX
  - Full version of VERITAS Volume Manager available
  - Full version of VERITAS File System included in HP's packaged software bundles
- **2001:** HP OEMs VERITAS Cluster Volume Manager
- **2002:**
  - Integrated Support and Services Agreement for VERITAS products
  - Refreshed OEM agreement covering future releases of HP-UX and VERITAS products
- **2003:** HP & VERITAS collaborate to provide VERITAS Database Edition Advanced Cluster for Oracle9i Real Application Clusters

- Powers more than 100 stock and commodity exchanges including 14 of the world's largest
- Support 95% of the world's securities transactions
- Help process 2 out of every 3 credit card transactions worldwide and 3 out of every 4 electronic funds transfers
- Handle 80% of the mobile billing and customer call traffic in Europe and Asia
- Help control 65% of the world's energy infrastructure



node 1

# VERITAS – A Leader in Storage Management/Virtualization



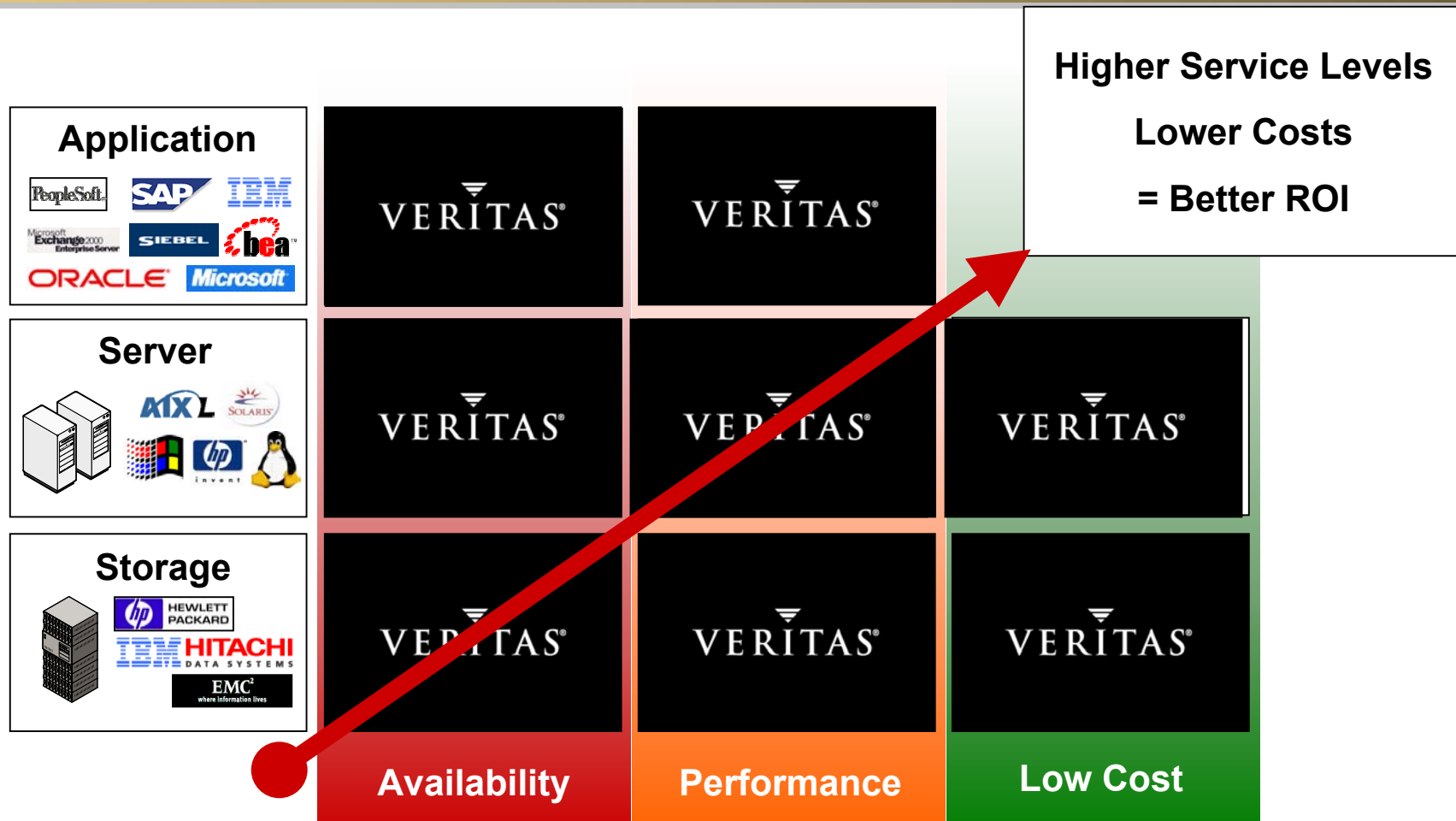
*All OS systems, including suites, based on new license revenue*

Source: Gartner Dataquest "2001 Storage Management Software Market Share" (March 27, 2002)

**Foundation Suite technology is used by >80% of the Global 2000 Corporations to ensure high availability of their data**

# VERITAS

## Maximizing Return On Applications Investment



# HP Landing Page on VERITAS.com



## **VERITAS Solutions for HP-UX Platform**

**VERITAS Foundation Suite**  
**VERITAS SANPoint Foundation Suite**  
**VERITAS Database Editions for Oracle**  
**VERITAS Database Editions/Advanced Clusters**  
**VERITAS Global Cluster Manager**  
**VERITAS Volume Replicator**  
**VERITAS Cluster Server**  
**VERITAS Netback Vault**  
**VERITAS SANPoint Control**  
**VERITAS FlashSnap**  
**VERITAS I<sup>3</sup>**

Note: Many of these solutions are also available on Windows and Linux



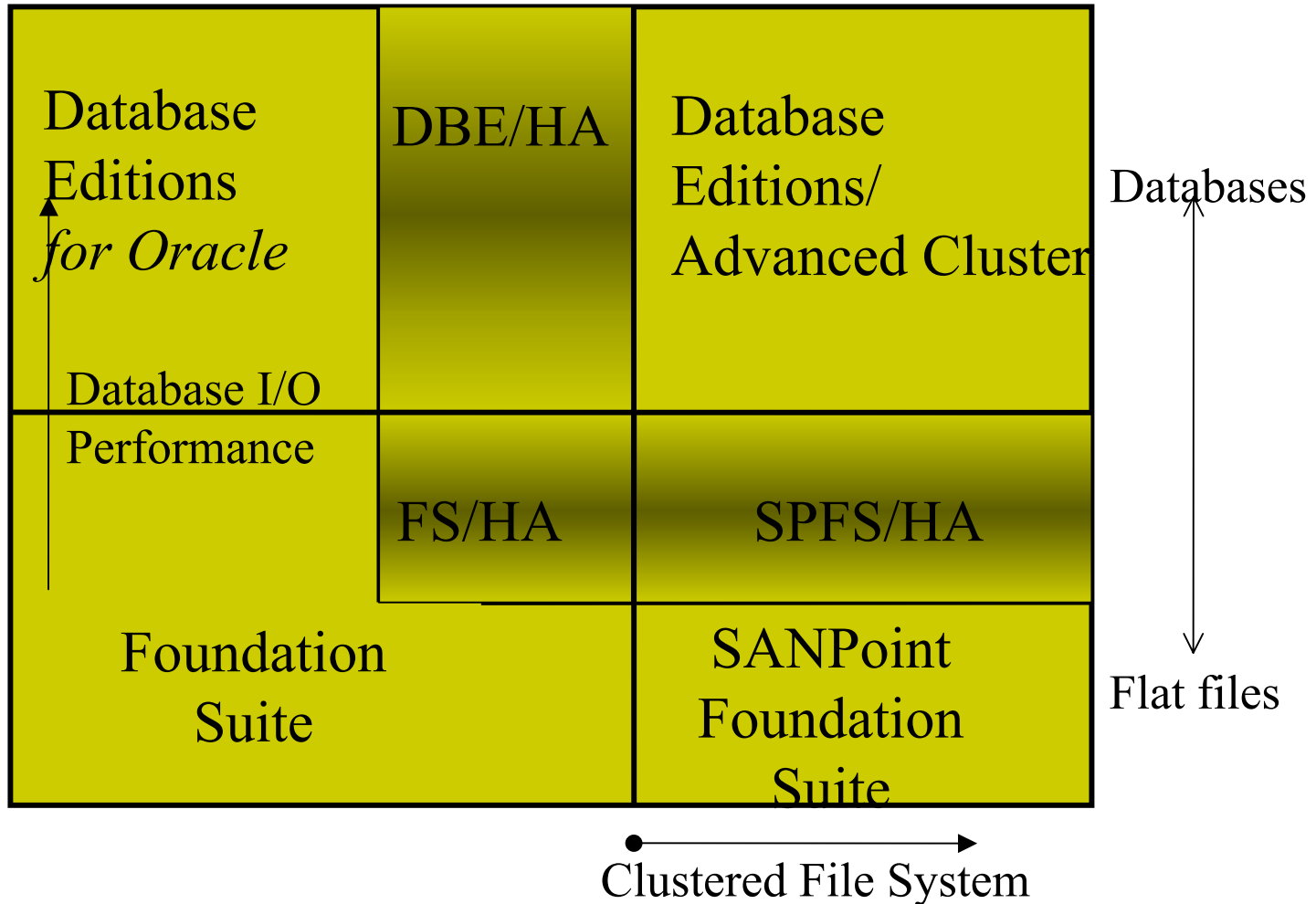
# VERITAS

## Storage Foundation Solutions



Single Instance

Parallel Environment



# VERITAS Volume Manager

- Virtualization of physical disk to applications
- System manageability
  - On-line shrink and grow volumes
  - Dynamically relayout and reallocated data
- Rootability
  - Improved performance via tunable parameters in the root volume
  - Increase system reliability via boot mirroring
  - Support for HP Ignite UX
- Enhanced manageability
  - Mountable Checkpoints lets end users restore their own files
- Enhanced availability
  - Improved recovery time via forced unmount and parallel fsck
- Increased file system reliability
  - New I/O error handling policy for SANs

# HP Online Journal File System



- Full version of VERITAS File System included in HP's packaged software bundles as HP OJFS
- Logs file system changes before they are made
- Reduces recovery times after a crash from hours to just a few minutes, critical for HA environments
- Enables resizing while on-line
- Provides storage checkpoints for instant recovery
- Increased file system reliability
- Maintains data integrity

# VERITAS Foundation Suite

- Foundation Suite contains:
  - VxVM
  - VxFS (HP OJFS)
  - VERITAS Quick log
- HP and VERITAS Joint Development
  - Integrate and Supported on HP-UX 11i
  - HP licenses “Lite” versions of VxVM and VxFS
  - Full versions are available from HP or VERITAS

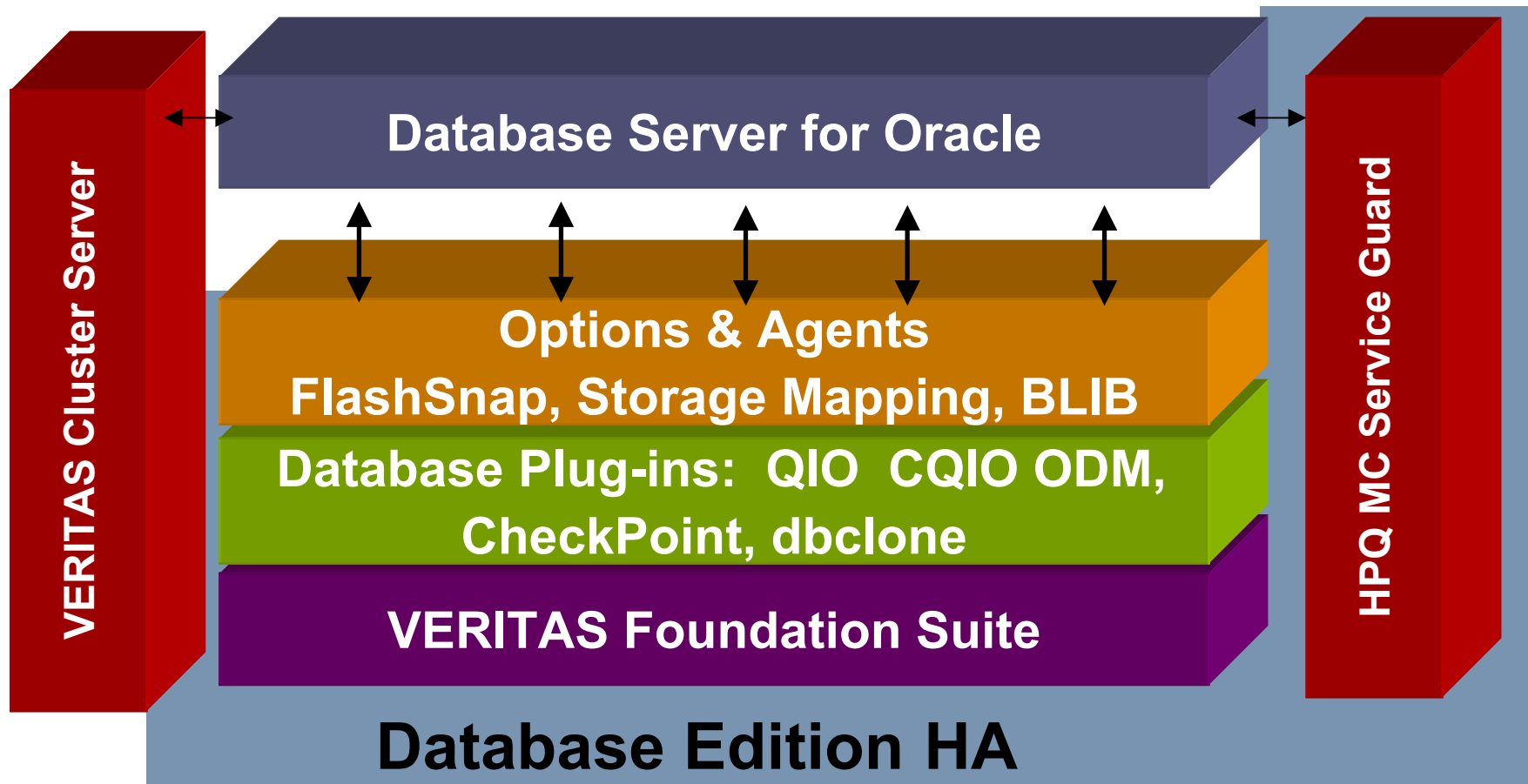
# VERITAS Foundation Suite

- Manage more systems and more storage...  
in less time with less resources
- Manage multiple tiers of storage more effectively ...  
while maintaining current SLA's
- Reduce the aggregate storage requirement ...  
and increase storage utilization
- Shrink the maintenance windows
- Repurpose your older storage

# SANPoint Foundation Suite

- All cluster nodes can access the same data
- Applications include:
  - Web serving
  - Parallel NFS/ftp servers
  - Media serving
  - High performance technical computing
  - Data ingest/data capture
- Atomic updates: changes on one node are seen instantly on all nodes
- Data accessed via SAN

# Database Edition *for Oracle* Architecture



# VERITAS Database Editions *for Oracle*



- File System Manageability with Optimum Performance
- Suite of Availability & Recoverability Options
- Maximize productivity by moving non-essential process off-host and shrinking backup windows
- Database Editions *for Oracle* is the only product on the market that enables DBAs to scale by increasing database performance, reducing time to complete database operations and reducing instances of database down-time.



# Database Editions *for Oracle*

## **Top Benefits**

- Dynamic Database Management while maintaining raw Oracle tpc. benchmark performance.
- Multiple availability and recoverability solutions to meet different DBA's Service Level Agreements.
- Efficient and accurate database cloning features allowing synchronization between production and off-host systems.
- A suite of integrated database management, performance and backup tools designed specifically for Oracle databases.

## **Top Features**

- DBED QIO integration with Oracle ODM
- Storage Mapping enables mapping from datafiles down to disk
- FlashSnap enables fast replication of database for off host processing
- BLIB provides zero downtime, non-disruptive snapshot backups
- High Availability via clustering

# Database Editions *for Oracle* Checkpoints



- Point-in-time image of the database
- Storage Rollback is the “restore” from the on-disk image
- Fast Restores without going to tapes
- Mountable - Do your own recovery
- Undo button - Take a checkpoint before configuration changes or applying patches
- Copy-on-write - Keeps just changed blocks

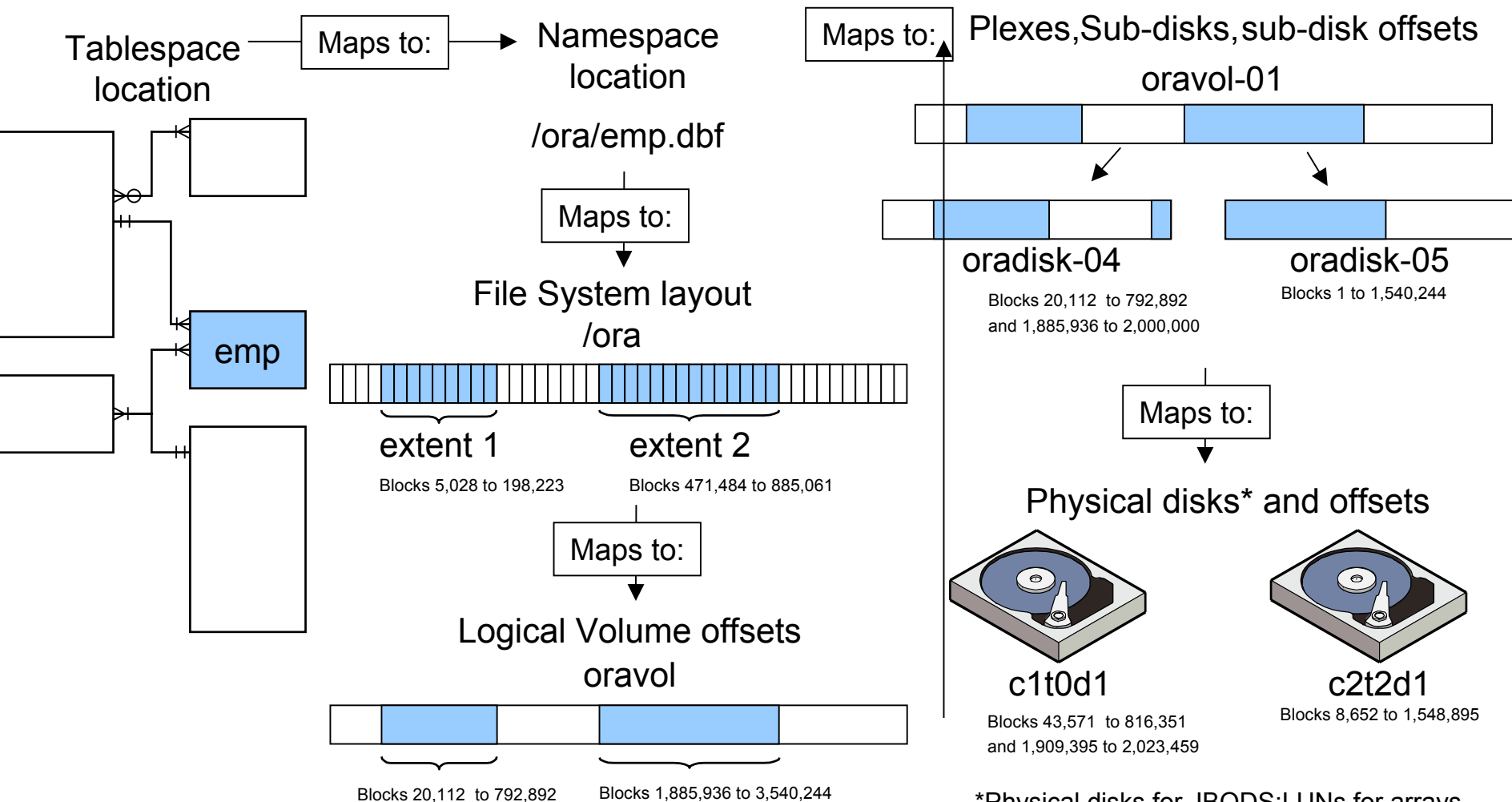
# **DBED for Oracle Storage Mapping option**



- Increase DBA's span of control!
  - View data placement in the storage stack
  - Knowledge of how volumes are set up or configured is not required
  - Identify I/O performance hot spots on supported arrays
    - lib=VERITAS:/opt/VRTSdbed/lib/libvxoramap.so
    - Query Oracle V\$ tables to get mapping information
    - V\$views displays dynamic performance views of all layers of logical volumes and physical devices.

# DBED for Oracle

## Storage Mapping option



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\*Physical disks for JBODS; LUNs for arrays.  
LUN to physical mapping is scheduled for 4.0

# Database Edition/Advanced Cluster for HP-UX

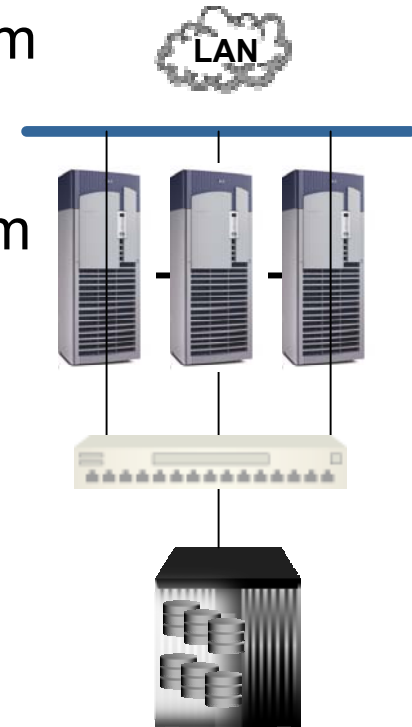


- DBE/AC for Oracle9i Real Application Clusters (RAC):
  - Provides the administrative ease of file based storage
  - Retains the performance of raw volume based storage
  - Across a clustered Oracle9i RAC environment
- Easy to order, easy to manage bundle certified with Oracle9i RAC
  - Cluster Volume Manager
  - Cluster File System
  - Cluster Server
- Available on HP-UX 11i in July, 2003
  - Expected on Linux near end of 2003

# DBED for Oracle/HA

## HP Serviceguard

- Protection mission-critical applications from hardware and software failures
- Monitors health of each node in the system
- Automatically fails over an application on detection of a failure
- Serviceguard Certified:
  - VERITAS Foundation Suite
  - VERITAS Volume Replicator
  - VERITAS Database Edition for Oracle
- Custom Serviceguard Scripts:
  - NetBackup and other VERITAS products



# HP Openview Integration Matrix

<b>VERITAS Products</b>	<b>HP Openview Integration</b>
VxFS, VxVM, VVR, NBU and VCS	OpenView Operations
VxFS and VxVM	OpenView Performance
VCS	OpenView Data Protector
VxFS	OpenView SAM
	<b>HP Openview Co-existence</b>
VxVM, VCS, VVR and NBU	OpenView SAM

# HP Storage Arrays

- Qualified with VERITAS
  - VxVM and VERITAS DMP
  - HP Cluster Volume Manager and VERITAS DMP
  - NetBackup supports the XP Array integration
- HP and VERITAS ensure interoperability
  - Joint labs,
  - Dedicated test engineering teams,
  - Shared test processes
  - Shared roadmaps
- Joint Storage solutions
  - Zero Downtime Backup
  - HP Direct Backup
  - Mezzanine Backup



# HP VERITAS

## Customer Support



One calls does it all

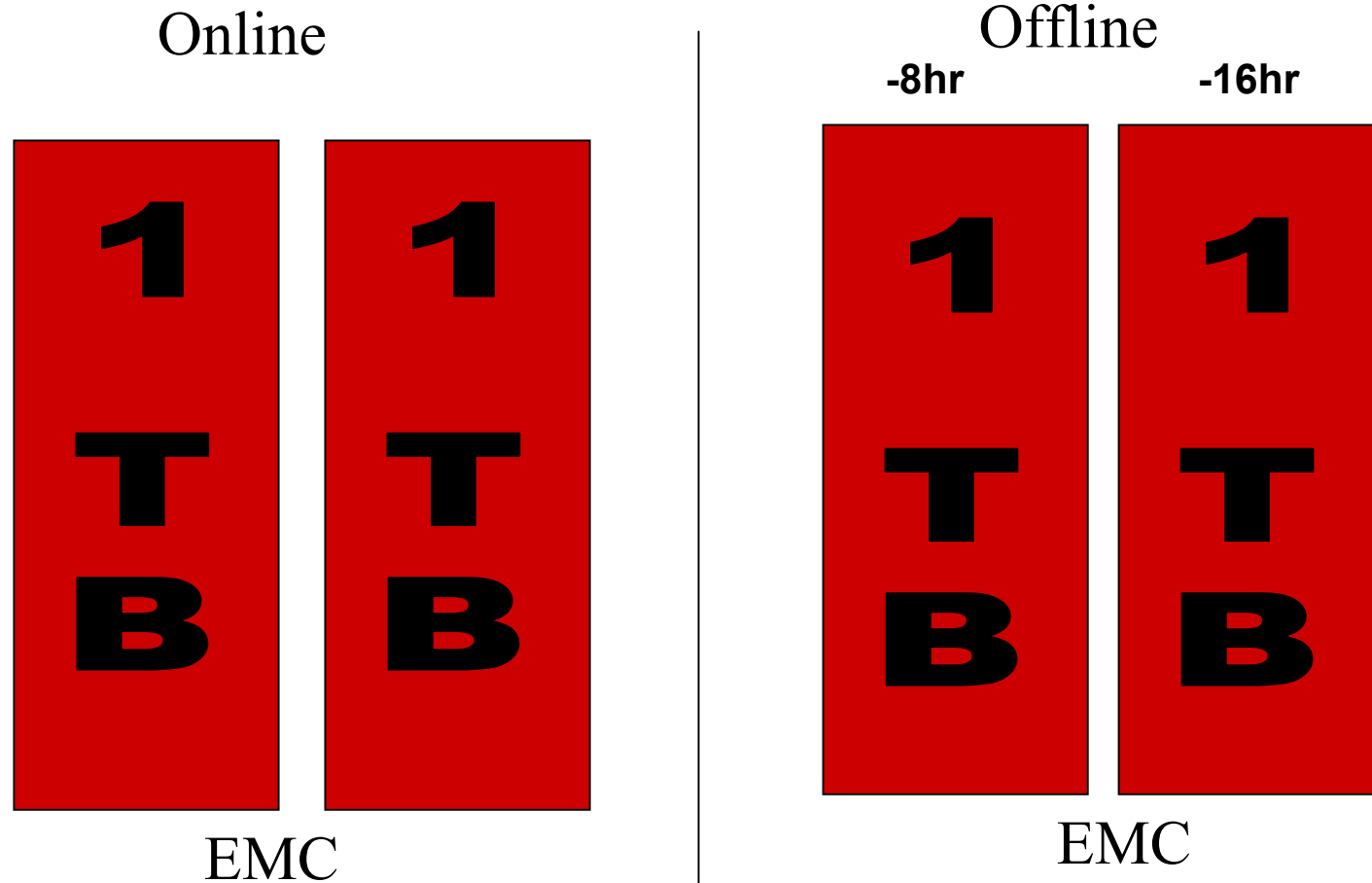
- Integrated Services and Support Agreement:
  - HP's support offerings on all HP/VERITAS products
  - Customers can manage HP and VERITAS products under one support contract
- Cooperative Support Agreement:
  - Customers running joint solutions can be assured HP and VERITAS will work together to resolve issues

# Foundation Suite Product Releases



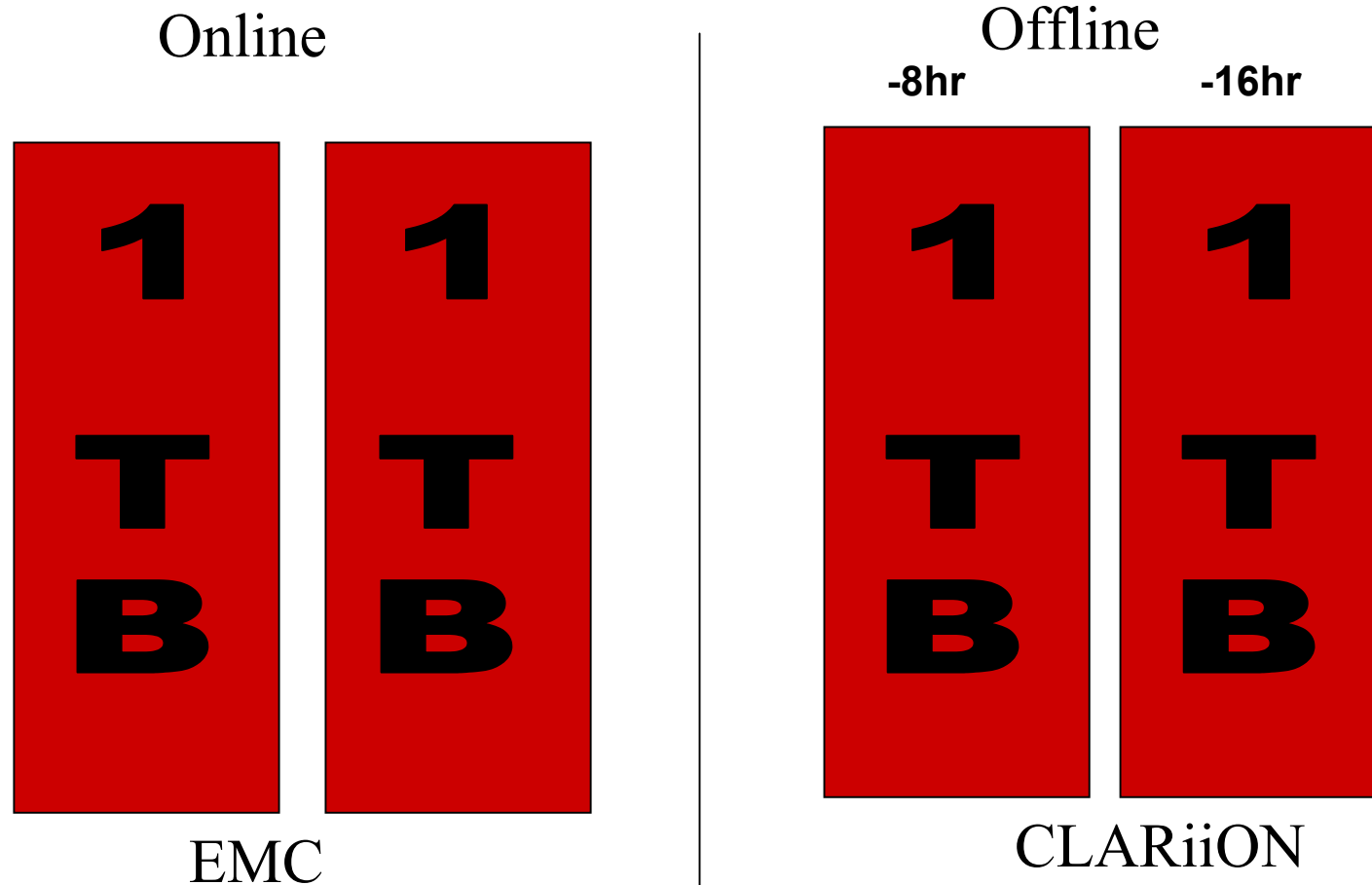
- Current Support
  - VxVM 3.5 - HPUX 11.i
  - VxFS 3.5 - HPUX 11.i
  - VxVM 3.2 - HPUX 11.i
  - VxFS 3.3.3 - HPUX 11.i
- Upcoming Release
  - VxVM & VxFS 4.0
  - Planned Release '04
- Please consult [www.veritas.com](http://www.veritas.com) for other product release levels

# Case Study: 1 TB application



# Good Solution

## Mirror to less expensive disks

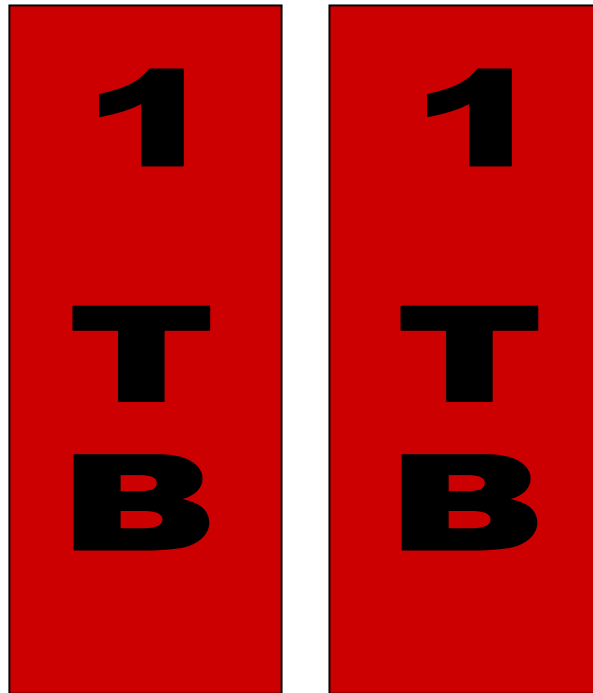


# Better Solution

## VERITAS Checkpoints



Online



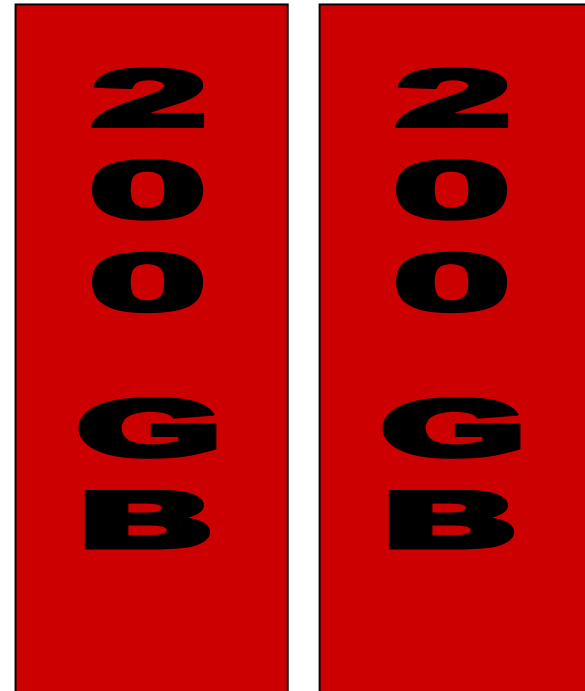
HP Storageworks

Assumes 20% Change rate of data

Offline

-8hr

-16hr



HP Storageworks

# The Cost Savings\*

- No need for PowerPath ~ 100k
  - No need for TimeFinder ~ 100k
  - Less Maintenance paid to EMC ~100k
  - Savings on Disk ~500k –1m
  - Total = 800k-1.3m for one system for one Database
- \*These saving are based on list price

# Major Telecom: Multiple HP and VERITAS Joint Wins



- The Opportunity:
  - Consolidate IT server and storage environment
  - Deploy an Utility Computing model
- The Challenge:
  - Utility computing model required high availability
  - HP LVM did not meet the flexibility requirement
  - LVM required multiple maintenance windows to reconfigure
- The Solution:
  - VERITAS Foundation Suite
  - NBU and Database Edition
  - MC Serviceguard Cluster (16 node)
  - MC Serviceguard Cluster test (5 node)

### The Challenge

- Customer care on-line activities via multiple channels
- Large subscribers account structures
- Requirement for access to numerous databases.
- Database tables and indexes sufficient to handle millions of subscribers.
- Disk storage availability to accommodate all data needs
- Backup, failover and disaster recovery components to ensure continuous operation



### The Opportunity

- Implement a customized billing solution to support all billing information for customers
- Integrated all services onto one unified billing platform
- Improve the Oracle database disk I/O Performances
- Meet Standard Operating Environment (SOE) acceptance requirements

### The Situation

- Slow online response times
- High volumes of data
- Small maintenance windows
- High degree of complexity in the dynamic communications industry
- High degree of end-user concurrency
- High customer frustration

### The Solution

HP 9000 Superdome

HP On-line JFS

VERITAS Database Edition for Oracle

HP Services Guard

Amdocs Enabler™

- Core areas where VERITAS solutions enhance the environment
  - Database performance and optimization
  - High availability
  - Robust backup and disaster recovery
  - Storage Management
  - File system and volume management
- Amdocs selected the VERITAS products for their CCB system for
  - Excellent dynamic load balancing
  - Shared disk
  - Performance
- VERITAS Database Editions supports
  - Very large database support
  - High online transaction processing (OLTP) traffic,
  - Tight system maintenance windows and
  - Heavy batch transaction levels

- Manage more systems and more storage...  
in less time with less resources
- Manage multiple tiers of storage more effectively ...  
while maintaining current SLA's
- Reduce the aggregate storage requirement ...  
and increase storage utilization
- Shrink the maintenance windows
- Repurpose your older storage

# A Powerful Combination



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# Questions



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