

EMC and EFFICIENT IT

Francois Roulot – Unified Storage Manager

Achieving Efficient and Sustainable IT

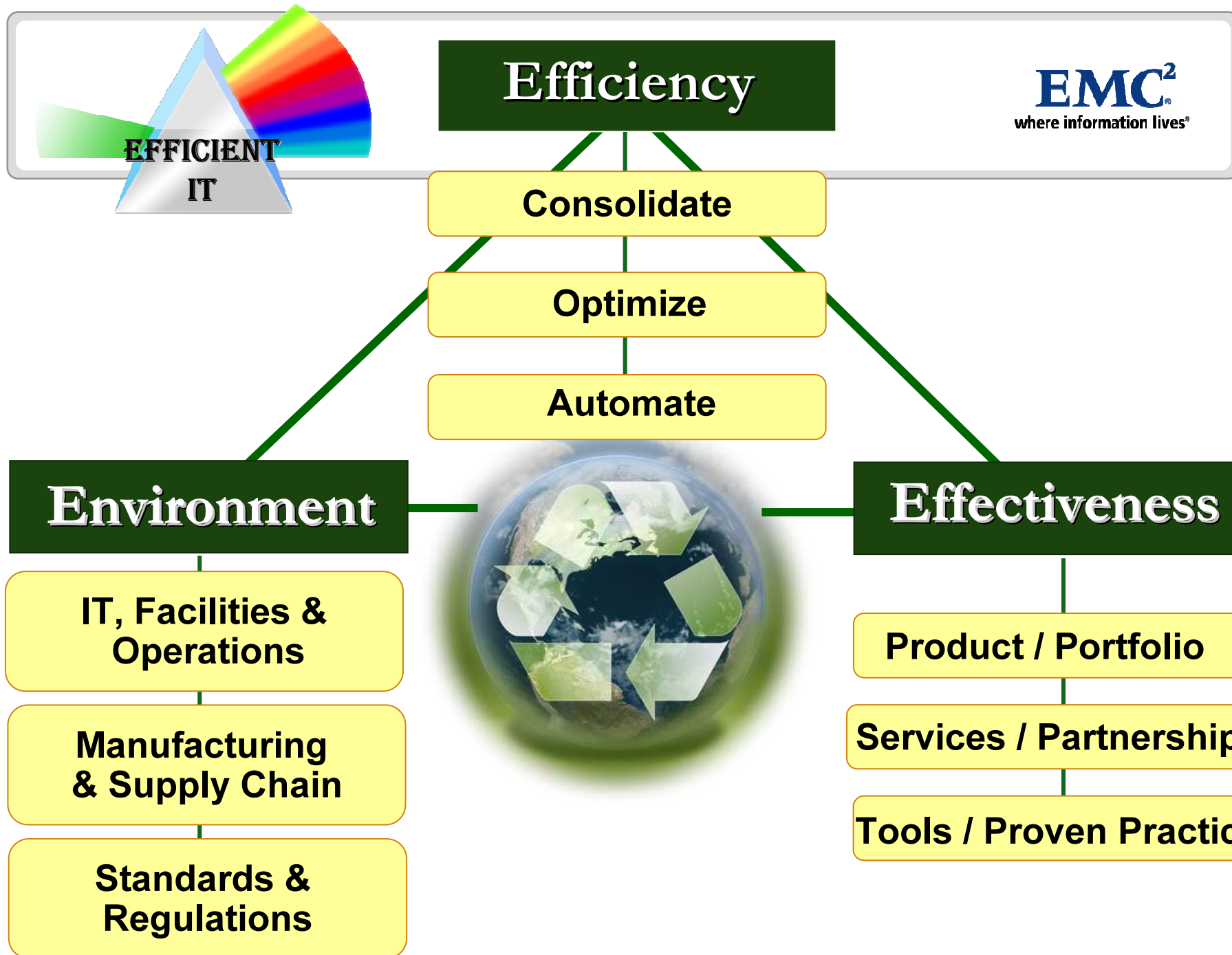
EMC²
Sustaining lives[®]

Efficient IT is Green+



**EFFICIENT
IT**

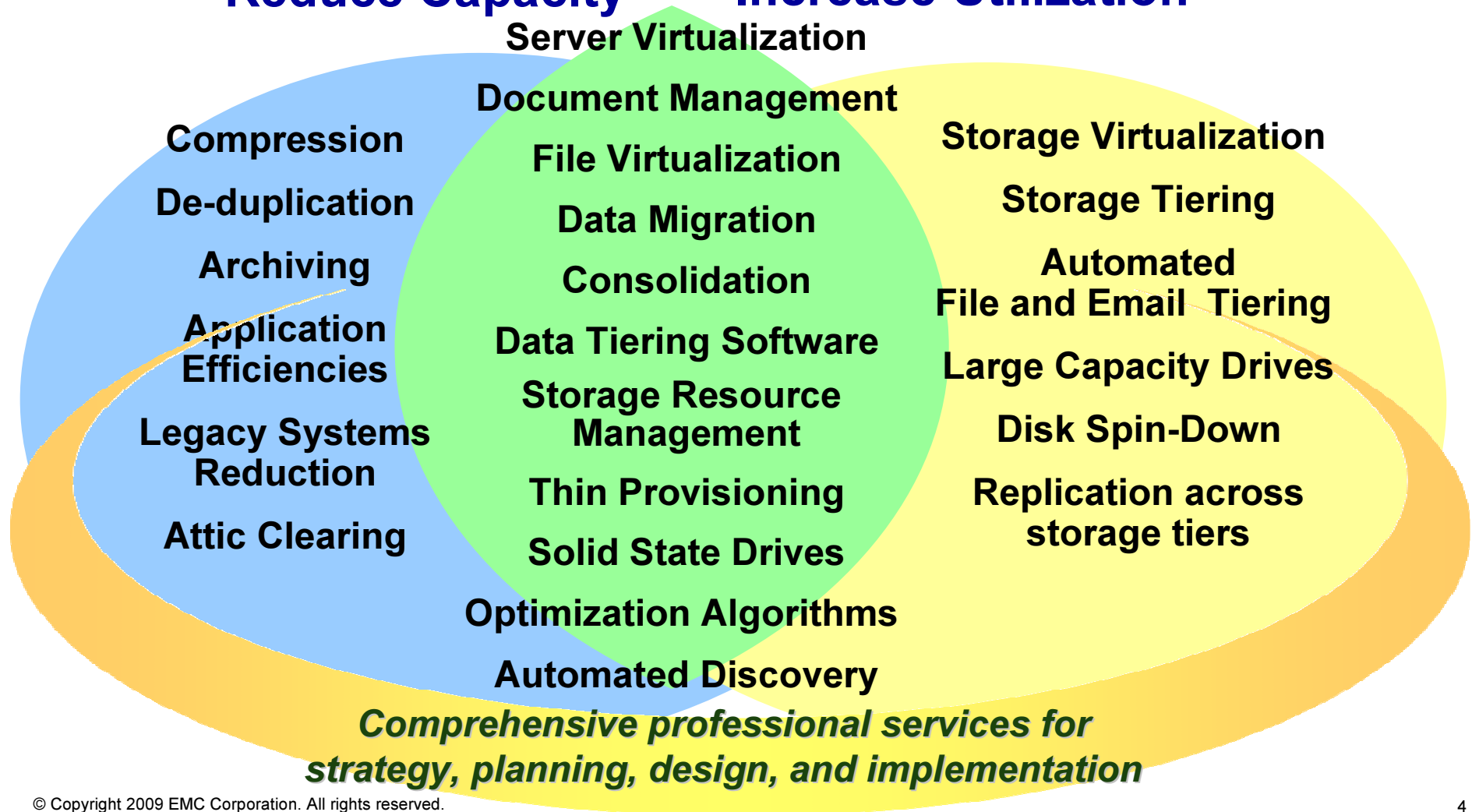
- ***Collaboration of IT and data center infrastructure suppliers and customers***
- ***Proven practices used in design, deployment and operation of computing environments***
- ***Achieving efficiency, cost savings and business objectives by employing current technology***
- ***And minimizing harmful environmental impacts***



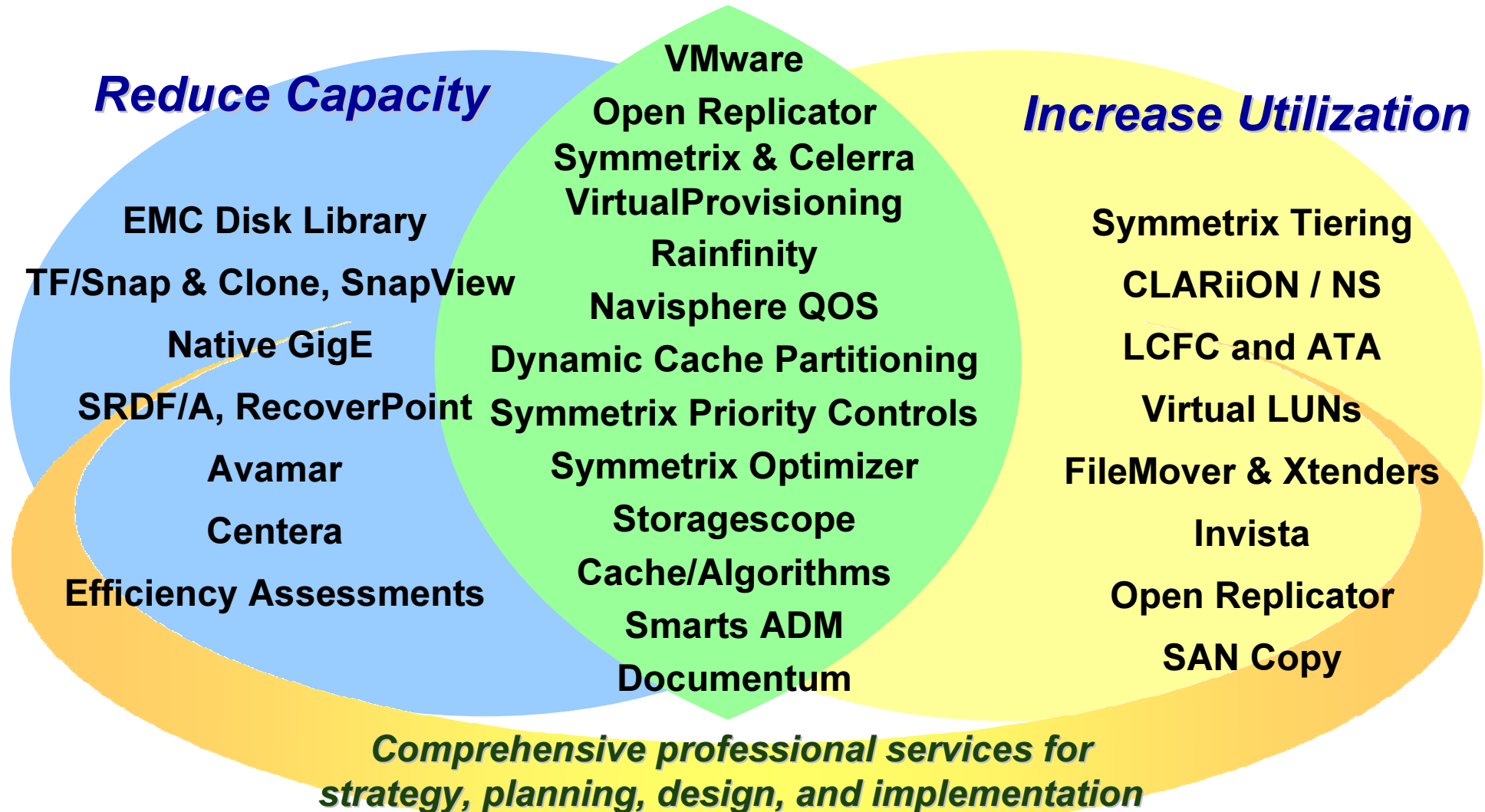
Improve Efficiency - Reduce Energy Consumption

Reduce Capacity

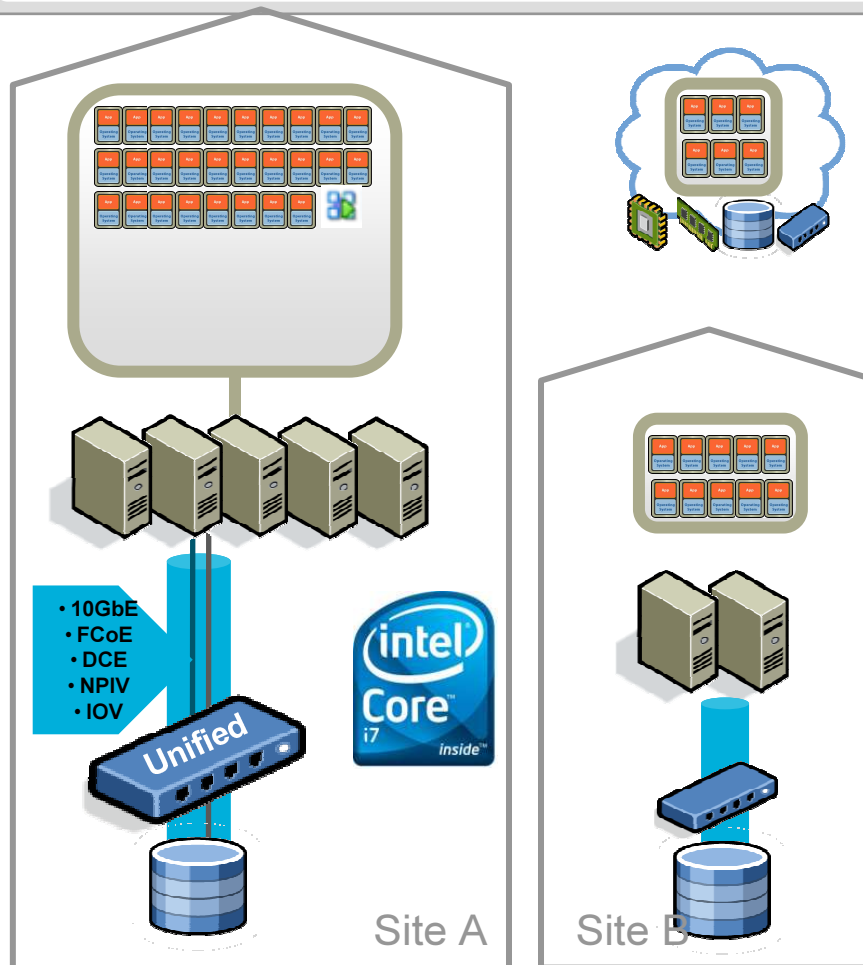
Increase Utilization



Improve Efficiency - Reduce Energy Consumption



Virtualized Consolidated Environment



•Q: Why are customers looking to build next-gen, Virtual Datacenters?

•A: Virtualization = Flexible IT

•A: Consolidation = Efficient IT

•A: Both = Environmental IT

•A: Flexible, Efficient, Environmental IT makes IT a business asset, not an expense

Next-Generation Celerra Innovations: Driving Down Costs



Deduplication

File system deduplication
with compression

Simplified Provisioning

New Celerra Provisioning Wizard

Advanced Connectivity

Cost effective NAS and iSCSI
High-performance MPFS and Fibre
Channel

Increased Capacity

Two-times the previous
generation (960 drives)

Compliance

Compliant file-level
retention for archiving

Flash Drives

Tier 0 storage with 30
times more IOPS



New

Next-Generation Celerra

Up to 22 percent lower TCO than

competitive offerings

Deduplication reduces
capacity requirements by up
to 40 percent

Deduplication, Virtual Provisioning, Snaps,
and Automated Volume Manager included
at no additional cost

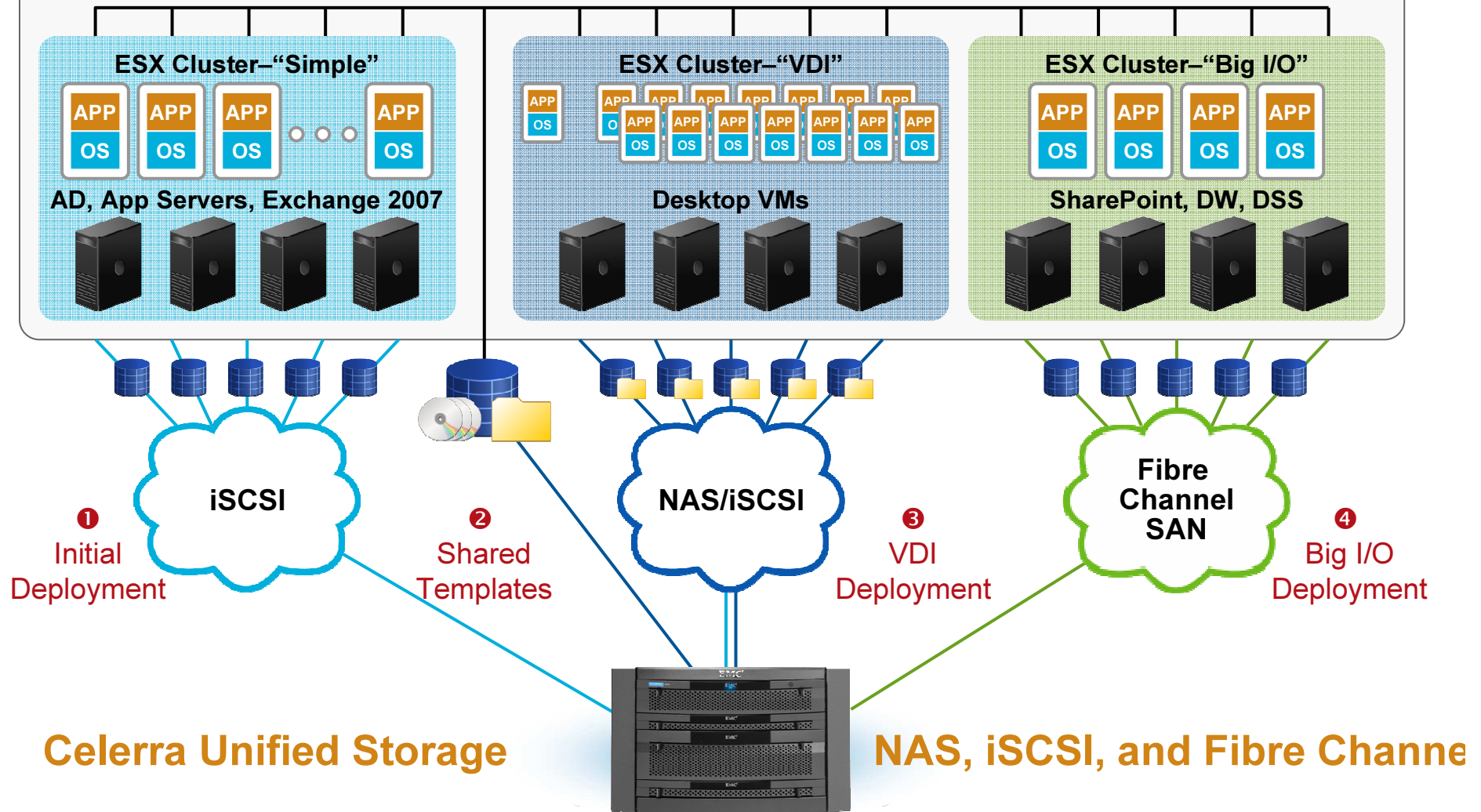
Low-power SATA drives
consume 32 percent
less energy



Multi-Protocol Storage—Critical for VMware



VMware Infrastructure Data Center



Celerra Family



The Industry-Leading IP Storage Platform



Unified Storage

Dedicated storage
Easy to deploy
Simple to manage



NX4



NS-120



NS-480



NS-960

Gateway

Shared storage
Add NAS, iSCSI to Fibre
Channel SAN
Highest storage usage
Single management



NS40G



NS-G8

	Unified Storage				Gateway	
	NX4	NS-120	NS-480	NS-960	NS40G	NS-G8
Availability	Failover	Failover	Advanced clustering	Advanced clustering	Failover	Advanced clustering
Number of X-Blades	1 or 2	1 or 2	2 or 4	2–8	1 or 2	2–8
Connectivity	NAS, iSCSI, Fibre Channel	NAS, MPFS, iSCSI, Fibre Channel	NAS, MPFS, iSCSI, Fibre Channel	NAS, MPFS, iSCSI, Fibre Channel	NAS, MPFS, iSCSI, Fibre Channel	NAS, MPFS, iSCSI, Fibre Channel
Storage	CLARiiON	CLARiiON	CLARiiON	CLARiiON	CLARiiON, Symmetrix	CLARiiON, Symmetrix
Maximum usable IP storage capacity (X-Blade/system)	16 TB/ 32 TB	32 TB/ 64 TB	64 TB/ 192 TB	128 TB/ 760 TB	64 TB/ 128 TB	128 TB/ 896 TB

Celerra Ease-of-Use Capabilities

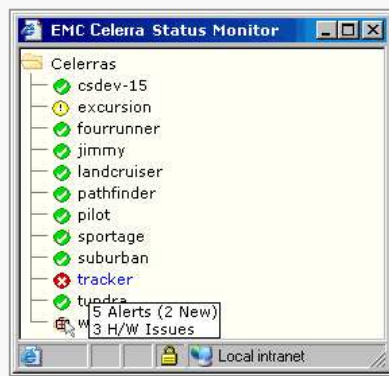


CELERRA STARTUP ASSISTANT



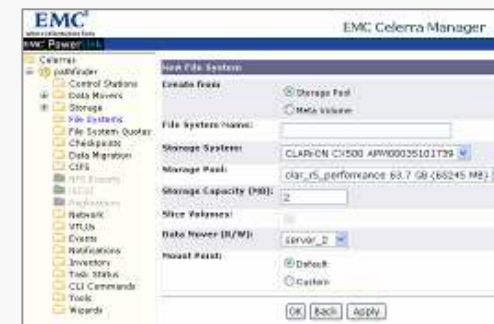
Installation
15 minutes power-up to production

CELERRA MANAGER



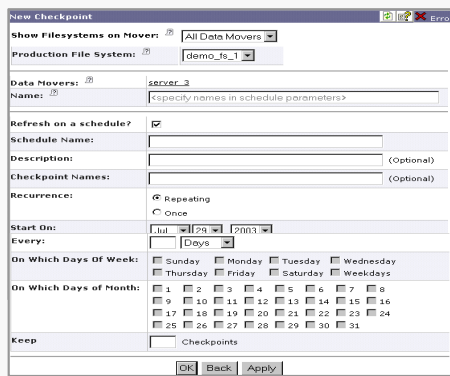
Intuitive Web-based management

AUTOMATED VOLUME MANAGEMENT



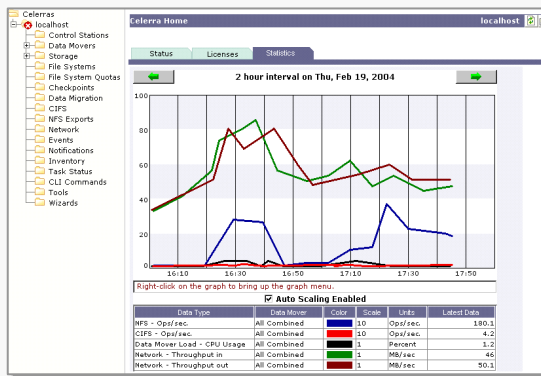
Provision file systems in four clicks

CELERRA SNAPSURE



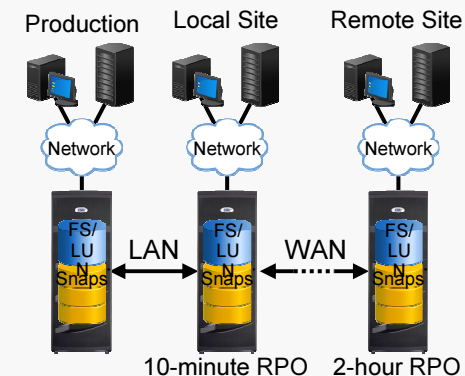
Simple snaps

CELERRA MONITORING



At-a-glance system status

CELERRA REPLICATOR

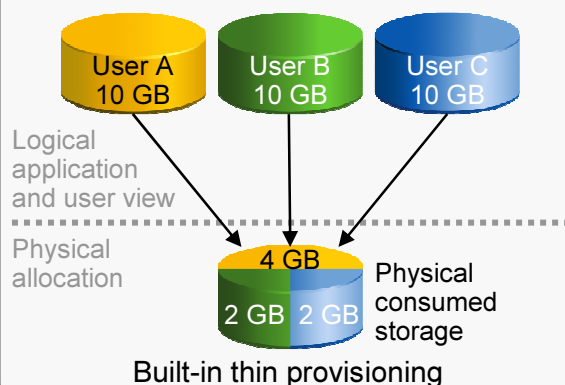


Simple Business Rule RPO

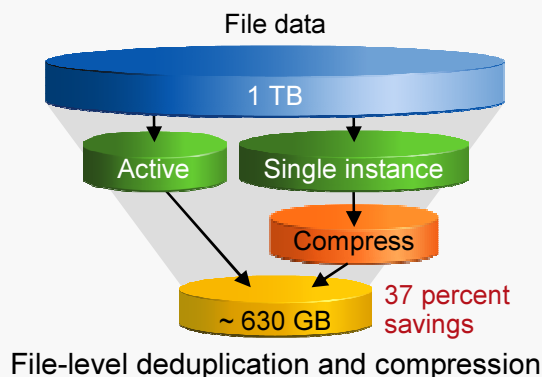
Celerra DART: Built-in Advanced Functionality



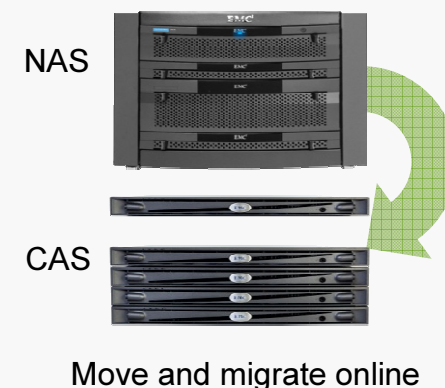
CELERRA VIRTUAL PROVISIONING



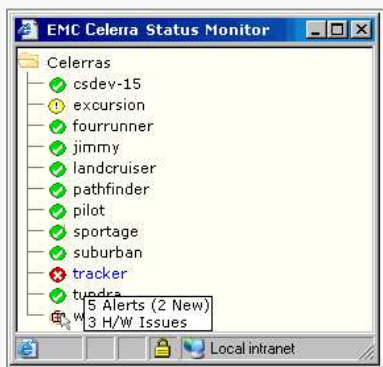
CELERRA DATA DEDUPLICATION



CELERRA FILEMOVER

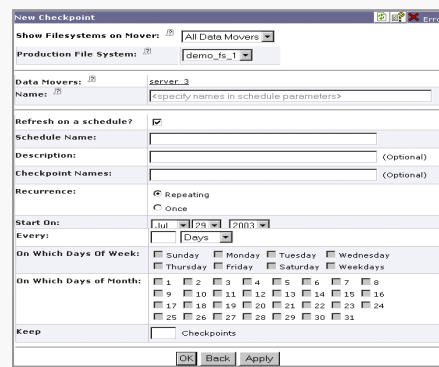


CELERRA MANAGER



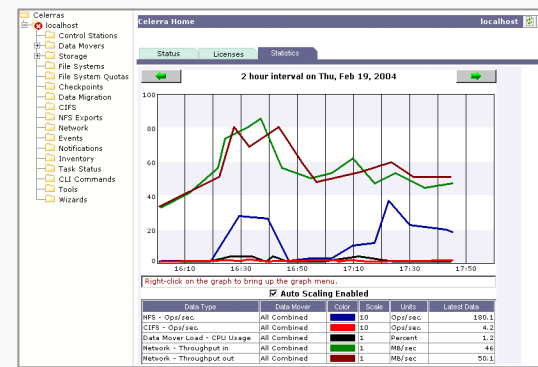
Intuitive Web-based management

CELERRA SNAPSURE



Simple snaps

CELERRA MONITORING

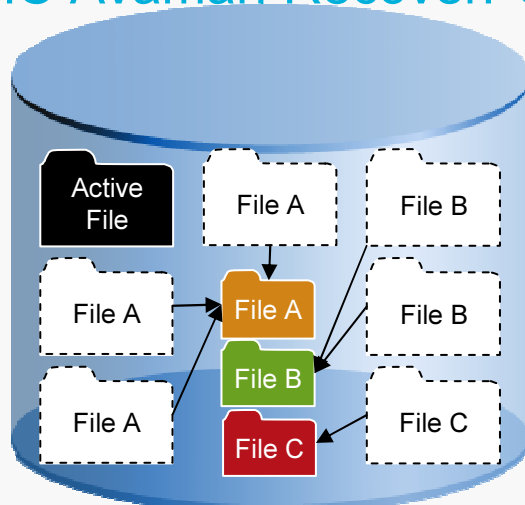


At-a-glance system status

Celerra Data Deduplication **New**



BASED ON INTEGRATION OF
KEY EMC TECHNOLOGIES
EMC Avamar, RecoverPoint



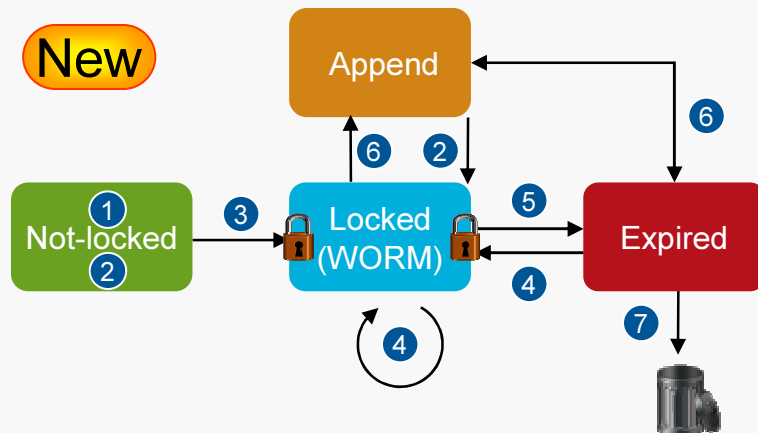
30–40 percent storage savings for typical
unstructured file share datasets

- Increased primary storage efficiency
 - 30-40 percent savings
 - Built in compression
 - Single instance files to remove duplicates
- Intelligent data selection
 - Targets inactive data
- Unobtrusive processing
 - Background processing with throttling
- Supports full Celerra functionality
 - Celerra Manager
 - Celerra SnapSure
 - Celerra Replicator
 - Celerra NDMP Backup
 - Celerra FileMover
- Easy to install and manage
 - One-click GUI enablement
 - Hands-off policy-driven

Celerra File-Level Retention



FILE-LEVEL RETENTION WORKFLOW



- 1 Non-File-Level Retention-enabled files
- 2 Set retention periods—enable File-Level Retention
- 3 Committed to "WORM" state
- 4 Retention period extended
- 5 Retention period expires
- 6 Empty or expired files
- 7 File deleted

Providing Disk-Based WORM Functionality

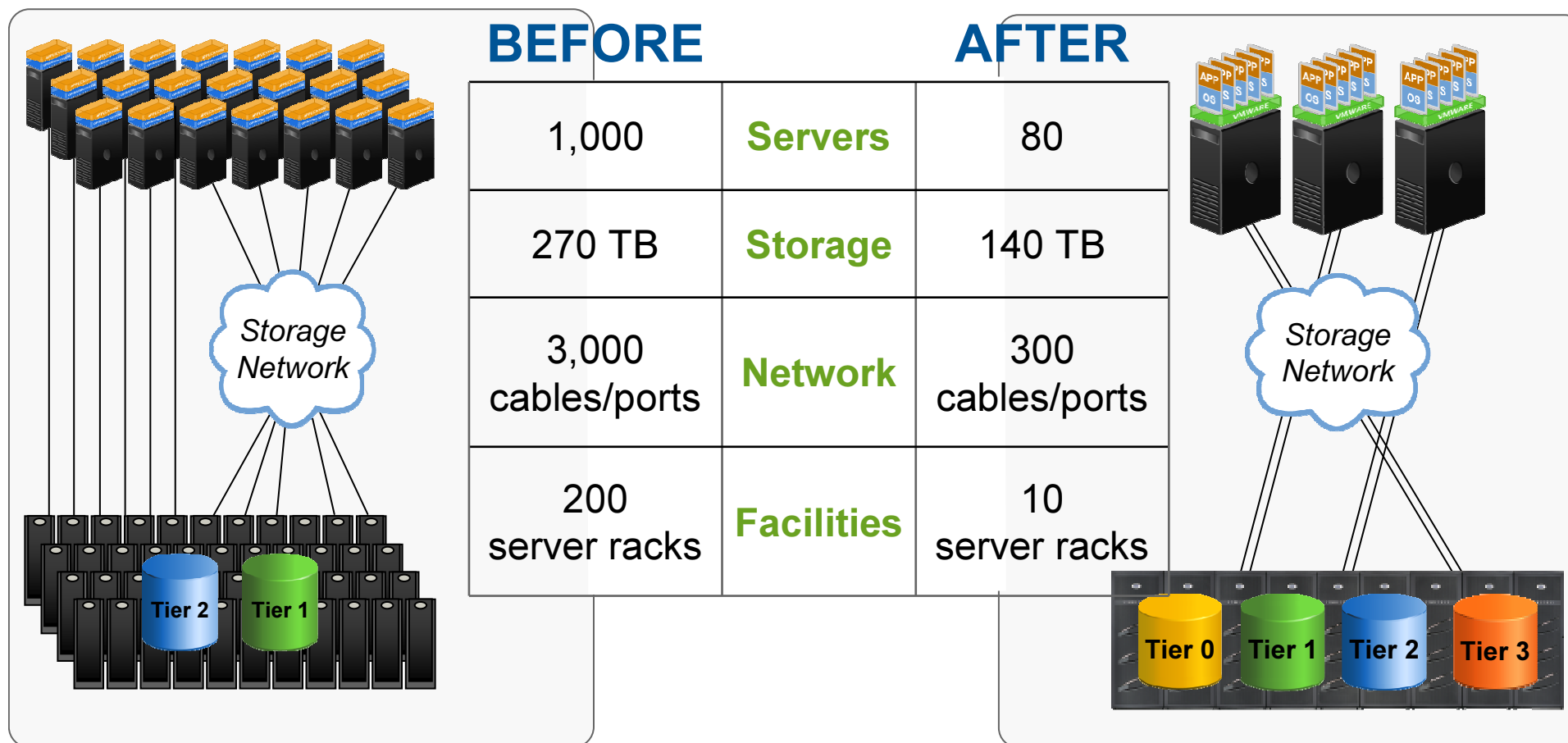
- Celerra File-Level Retention Enterprise (FLR-E) option
 - Enables adherence to good organizational best practices
 - Provides for retention periods per file
 - Authorized file system deletion
- Celerra File-Level Retention Compliance (FLR-C) option
 - Meets compliance requirement "SEC Rule 17a-4(f)"
 - Prevents file systems deletions
 - "Hard" default retention periods
 - Write verification
 - Retention periods cannot be modified
 - File systems cannot be deleted

Server, Storage and Storage Network Consolidation Maximizes Energy Efficiency

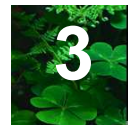


Leading North American Utility

Saving +70% in reduced data center space, power, and cooling



Three Practical Strategies for Efficiency



Optimize

EMC²[®]

where information lives[®]