Open

Storage

Maximizing the Value and Protection of
Vital Information Assets

for Open

Systems

Managing Growth and Change
for Open Systems

Managing Growth and Change for Open Systems

Open
Support multiple heterogeneous UNIX servers from a single storage array and allocate storage among systems as needed.

Reusable
Add or change servers without sacrificing investments in data storage.

Simple
Centrally manage hundreds of gigabytes of data across multiple servers, reducing cost and complexity of storage management.

Scalable
Eliminate capacity and performance barriers with scalable capacity, host connectivity, cache, and availability to keep pace with fast-changing open systems applications.

Protected
Ensure maximum uptime with multiple levels of RAID, hardware redundancy, non-disruptive component replacement, and intelligent maintenance features.

The Impending Data Storage Crisis

The lifeblood of any organization today is information. Whether it is used to develop and manufacture a product, to provide customer service, or to support critical business decisions — information is clearly one of your most valuable assets. It is no wonder then, that enterprises are deploying business systems and applications faster than ever before in the history of computing — to use information in pursuit of a competitive advantage by lowering operating costs, decreasing time-to-market, improving the quality of customer service, or attempting all three.

Most of these business applications are being deployed on open systems, with a veritable explosion occurring in the use of PCs and UNIX® servers — often from a multitude of vendors, and all drawing on large amounts of data. As fast as these systems are installed, changing business requirements and advancing technology are creating a constant flux as servers and their operating systems are added, replaced, moved, or upgraded. That means storage and storage management grow in complexity. And data protection and availability become larger issues.

From the information management perspective, this scenario is a storage crisis in the making. Storage represents a large part of any system investment — as much as 50 to 70 percent — to support large relational databases and other client/server applications. If your storage is tied directly to a particular server and operating system, what happens to that investment when the server is changed or upgraded? Moreover, supporting a growing number and variety of systems means added complexity and cost for storage management. And with requirements changing so rapidly, how can you keep up with the capacity and performance demands of all the diverse applications in your enterprise?

The solution to this storage crisis is open storage for open systems — only from EMC.

Support multiple heterogeneous UNIX servers from a single storage array and allocate storage among systems as needed.

Operating System-Independent Data Storage

Storage that is truly open — you'll find it only from EMC. Our family of large capacity, high-performance open storage systems meet the requirements of your most demanding client/server applications, completely independent of the servers and operating systems deployed in your enterprise. In fact, only EMC can provide concurrent storage support for multiple servers — including Sun® Solaris®, IBM® AIX®, HP–UX®, and others — allowing you to easily reallocate disk space from one server to another on an application-by-application basis.

No specialized software drivers are required to support our open storage systems. That means, you can change server vendors or upgrade operating systems and simply plug your new systems into existing EMC storage — with virtually no operational impact! And when crucial business applications are at stake, minimizing downtime is of critical importance.

You won't find another open solution like EMC's anywhere on the market. While some storage vendors claim to offer "open" solutions, only EMC gives you complete freedom to allocate capacity among a variety of servers — all from the same storage array. For example, if one department adds a new application and runs into a capacity crunch, you can reallocate storage from a less demanding application to the new one — even if they are supported by different operating systems. Now that's open.

Reusable

Add or change servers without sacrificing investments in data storage.

Freedom to Change Platforms and Preserve Your Storage Investment

When plans and priorities change, it shouldn't mean walking away from your storage investments. And with EMC, you don't have to. That's because EMC has developed an industry-leading open architecture that gives you the flexibility to reuse existing storage whenever you add, move, or upgrade servers. So applications can move from one server platform to another as your performance or organizational requirements demand with no new storage
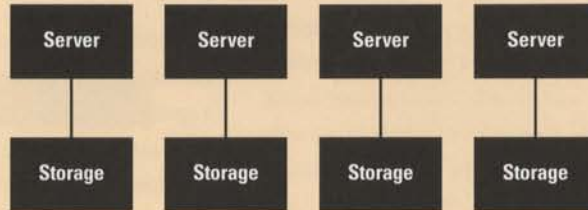
investment. You can make the platform changes and just plug in your existing EMC storage.

Reusability has a number of important benefits. First, it gives you the freedom to select a system vendor based on performance, service, and application support, exclusive of the storage provided. Reusability gives you greater agility to change platforms as your needs change. You can respond to new requirements more quickly since the largest part of your hardware investment is moving with you. Finally, because of its open design, EMC storage is easily upgradeable, regardless of the system vendor. So you can take advantage of new storage capabilities as they become available without investing in totally new technology every year.

The net result is freedom of choice. You can change your servers and operating systems virtually any time and any way you want — with your storage investment remaining intact. And that extends the value of your storage investment indefinitely.
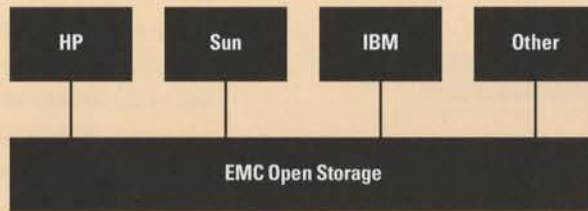
Before

- Proprietary
- Disposable
- Complex
- Limited
- Unprotected

Server	Server	Server	Server
Storage	Storage	Storage	Storage

After

- Open
- Reusable
- Simple
- Scalable
- Protected

HP	Sun	IBM	Other
EMC Open Storage			

Manage Storage for All Your Servers from a Single Viewpoint

Multiple servers from multiple UNIX vendors — they each have unique methods for configuring and managing storage. Multiple storage systems spread across your organization also mean problems could arise anywhere — making it difficult to troubleshoot and even harder to protect important data. Add to the picture network operating systems, such as NetWare® and Windows NT®, and the complexity builds even further.

To handle the number and variety of systems in your enterprise requires a considerable pool of expertise. That means training — and retraining — every time you bring in a new platform or upgrade an operating system. And suppose one of those systems starts to run out of capacity or experiences a problem. With different error message formats and handling procedures, how long will it take you to isolate a problem and resolve it?

EMC has a simple solution. With our open storage approach, you can manage a disk array with hundreds of gigabytes of capacity — spread across multiple heterogeneous servers — all as a single image. There's only one method to learn, regardless of vendor.

And EMC makes storage management fast, efficient, and cost-effective using a single, centrally located management console.

What's more, if a problem does arise, you can isolate and resolve it quickly. All storage issues are logged in one place, using a consistent format, regardless of how many databases and operating systems are involved. And EMC open storage systems also include intelligent maintenance processors, so problems can not only be detected quickly, but also resolved fast to keep your storage system running without interruption. With our on-line technical support service, EMC technicians can gain a window into your system to diagnose trouble on the spot — 24 hours a day. It's simple — EMC saves you time and money.

Scalable

Eliminate capacity and performance barriers with scalable capacity, host connectivity, cache, and availability to keep pace with fast-changing open systems applications.

Storage Capacity and Performance that Grows with Your Applications

In recent years, UNIX systems have grown to such a degree that now hundreds of gigabytes of storage are required to support large database applications — such as decision support systems, data warehouses, and on-line transaction processing. Yet with changes in applications and usage occurring so rapidly, do you have adequate storage capacity and performance to sustain these demanding applications? Can you really predict your requirements next year — or even next week? Without knowing your true storage capacity and performance requirements, you could "hit the wall" at any moment — and most likely the bottleneck will be in storage.

EMC eliminates capacity barriers by providing intelligent storage arrays that scale from tens of gigabytes to hundreds of gigabytes. Now your storage can grow smoothly and cost-effectively as you add users, applications, and new servers. And you don't have to worry about I/O bottlenecks either. That's because EMC storage solutions break the performance barrier with our exclusive high-performance Integrated Cached Disk Array (ICDA®) technology — buffering both reads and writes by using a large pool of non-volatile cache. As a result, access to data is at electronic speed rather than at mechanical, magnetic disk rates.

Whatever your storage capacity and performance requirements — today or tomorrow — EMC has the solution. The scalability of our systems allows you to start with the storage capacity, device channels, cache size, and host connectivity you need today, and easily add more as your applications change or grow. So you can always balance capacity and performance precisely to your application needs.

Protected

Ensure maximum uptime with multiple levels of RAID, hardware redundancy, non-disruptive component replacement, and intelligent maintenance features.

Flexible Data Protection to Meet Various Application Requirements

With information playing such a critical role in your enterprise today, it is an asset that requires adequate protection to ensure its availability and usefulness to ongoing business development. Even a single database, however, may have different requirements. Protecting data for multiple applications in a multihost environment could be nearly impossible to do cost-effectively.

With EMC, you can choose the level of protection you need for each application and balance that protection to ensure optimized availability and performance. We provide a wide range of system features and services to give you that flexibility, including implementations of multiple RAID levels, hardware redundancy, hot-swappable components — even customer service that's available 24 hours a day, seven days a week.

It's a comprehensive, yet flexible approach to data protection, enabling you to mix and match the exact levels of availability and protection demanded by each of your applications.

For More Information

EMC storage solutions look at the entire production environment and focus on minimizing recovery time, as well as maintaining data integrity. So you can maximize uptime, avoid paying for protection you don't need, and modify your protection strategy as your requirements change.

For more information on how EMC open storage solutions can help you enhance the value of your open systems data, contact your EMC sales representative or authorized distributor today. Or call EMC directly at 1-800-424-EMC2.

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