

Storage Area

Network Management



Tivoli

Are You Managing Your SAN or Is It Managing You?

Storage Area

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Your company thrives on data, and e-business is creating a storage crisis. The volume of data you need to make available to file and application servers is exploding. It's difficult to find space on your LAN. The answer: build a storage area network—but how can you manage the SAN and the data explosion with current resources?

Integrate the management of your data across a range of devices.

The SAN Management Challenge

Cost-effective, efficient management of your company's crucial data is becoming more and more difficult. Your operating systems must have disk storage available for their exclusive use. Yet the staggering amount of data generated by e-business and other data-intensive processing makes it necessary to physically connect the same storage resources to multiple computers at the same time with storage area networks (SANs).

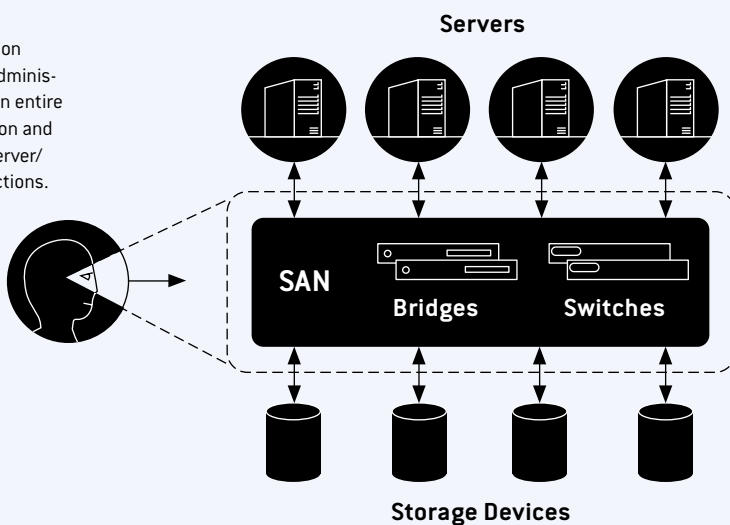
But the operating systems consider any storage they see to be exclusively theirs. As soon as more than one computer is connected to the SAN, the data stored across the SAN is quickly scrambled. Then it becomes a technology management issue. You need a way to allow multiple computers to coexist on the same SAN, connected to the same storage devices at the same time. And with the hundreds—if

not thousands—of different combinations of servers and storage, it's a technology management nightmare in the making.

A SAN might be the answer for your organization, but managing it is another matter. You have finite IT resources, multiple servers, and growth management challenges. To be effective, a SAN needs to:

- **Simplify and consolidate storage management** to make managing your technology easier and faster
- **Get a better look at your evolving SAN** with a consolidated means of looking at your entire enterprise and identifying your SAN configuration
- **Automate the process** so you can protect, back up, and restore data quickly and efficiently
- **Optimize your SAN and manage data better** by moving back-end IT data transfers from the communication network to the SAN
- **Control escalating storage management costs** by getting more from your valuable IT resources

The Tivoli solution enables an IT administrator to view an entire SAN configuration and arrange ideal server/storage connections.



How Tivoli Helps You Succeed

Enter Tivoli, the global leader in technology management software and an IBM company. The Tivoli solution gives you the tools and the flexibility you need to simplify and centralize your storage management.

Tivoli provides a comprehensive suite of interoperable, scalable solutions to help maximize your valuable IT resources, manage your increasingly complex server array, and manage your data growth. Compatible with hundreds of storage devices—as well as LANs, wide area networks, and emerging SAN infrastructures—the Tivoli solution lets you quickly and easily integrate new SAN and storage technologies into your existing infrastructure, across platforms. You can discover what SAN-attached devices you have, identify and assign unused resources, establish policies, and continuously monitor and automatically maintain your entire enterprise.

Tivoli Storage Area Network Management Solution Checklist

As you evaluate your options for SAN management software, be sure to choose the solution that makes business sense.

✓ **Increase your revenue potential by minimizing downtime**

The Tivoli solution provides high-speed business recovery and disaster recovery support so that your company is back in business as soon as possible.

✓ **Help reduce your IT costs**

A single administrator with minimal training can apply consistent management policies across the enterprise because the Tivoli solution provides a single console for backup and recovery.

✓ **Keep your customers happy**

The Tivoli solution helps your staff quickly prevent and resolve problems to maintain IT availability.

✓ **Speed your time to market**

The rapid recovery and LAN-free backup features of the Tivoli solution give you the necessary resources to respond quickly to e-business customer requests.

✓ **Maintain information integrity**

The Tivoli solution protects your mission-critical information from corruption by distributing data within your storage resources. Because your data is randomly assigned to the best available storage devices across your network, you don't have to worry about losing all your critical data if one device experiences problems.

The Tivoli solution gives you the functionality and flexibility to accomplish more of your IT goals.

Optimize

Your Storage Resources

View on 21 Jun 2000

Take a comprehensive approach to managing your data storage resources.

Simplify and Consolidate Storage Management

The Tivoli solution gives administrators centralized control of the entire SAN. An administrator can discover exactly what components and resources make up the SAN and what disk resources can be assigned to which computers. You and your staff can define policies to automatically manage future growth demands on the resources. The Tivoli solution provides a visual rendering of your SAN configuration; discovery, identification, and allocation of SAN resources; file sharing; LAN-free data transfer; backup, restore, and data recovery; and continuous threshold monitoring. This gives you confidence that your entire SAN—regardless of its complexity, degree of heterogeneity, or size—can be administered effectively.

Get a Better Look at Your SAN

The Tivoli solution displays the discovered configuration, performs continuous monitoring, provides alerts and notification, and manages all SAN components from a scalable architecture. It identifies SAN components and configurations and generates up-to-date information about the SAN infrastructure so you can identify trends to predict problems. If a problem occurs, the Tivoli solution can often zero in on the root cause and resolve the issue quickly, without administrator involvement. It empowers you to navigate and manage anything from a small SAN to a large, complex SAN—and enables you to administer the topology and components within that SAN. The Tivoli solution also helps you achieve the increased availability and access necessary for your business-critical storage systems.

Automate the Process

The Tivoli solution automates the policies you define and applies them to your SAN. After these policies are set, the solution provides continuous, automatic monitoring of assigned resources to see if they approach user-defined data capacity thresholds. If a threshold is reached, the solution sends a report to your systems administrator. A defined unassigned disk partition of the right size is found, formatted with the proper file system, and added to the volume that has exceeded its capacity threshold.

The Tivoli solution identifies and automatically allocates heterogeneous disk storage resources, or logical unit numbers, to deliver a simple, secure, and efficient method of assigning resources to host systems.

By presetting policies and automating responses, the Tivoli solution helps you significantly reduce your IT administration workload and maintain continuous application processing. The higher availability provided by the Tivoli solution enables you to reallocate your valuable IT staff resources to higher-priority projects.

Manage your data smarter to seize more e-business opportunities.

Optimize Your SAN and Manage Data Better

The Tivoli solution combines the sharing capabilities of a LAN and the speed of a SAN. It allows data migration to occur at SAN speeds without affecting LAN traffic. It transparently enables multiple computer systems to share the same files on the same storage.

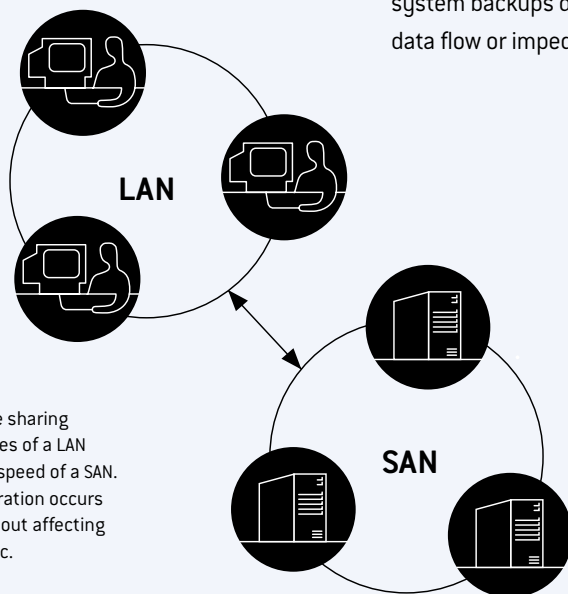
By using a single file system, the Tivoli solution reduces the need to manage other multiple file systems, regardless of the number of computers connected to the SAN. It increases overall network performance by routing all data over the SAN instead of the LAN. It also enables you to implement LAN-free and server-free backup/archive and restore programs. It transparently boosts the performance of backups to ensure that system backups do not degrade overall data flow or impede access.

The Tivoli solution minimizes backup data transmitted over the network and the time it takes to complete a backup.

Because the Tivoli solution uses SAN industry-standard discovery technology, it delivers vendor-neutral functionality. The Tivoli solution gives you a powerful integrated storage management solution, including disaster recovery, storage management analysis, and data protection.

Control Escalating Storage Management Costs

Designed for companies with heterogeneous, distributed computing environments, the Tivoli solution provides a single point of control and administration for your entire SAN infrastructure. The result is centralized management that covers device discovery, configuration rendering, resource identification and allocation, setting of customized policies, continuous monitoring, and automation to maintain continued application processing. Simply put, your staff gets more done, more efficiently. Your organization can maximize human resources, hold down hardware costs, and proactively manage data growth.



Blend the sharing capabilities of a LAN with the speed of a SAN. Data migration occurs fast, without affecting LAN traffic.

Manage Your SAN with Tivoli

Your increasingly complex storage needs dictate the use of a SAN, and the Tivoli solution can get your organization where you want it to be. With it, you can do the following:

- Provide uninterrupted data availability and access
- Efficiently manage your growing SAN
- Optimize and automate processes to hold down IT costs
- Maintain the storage resources your organization needs to succeed
- Continue your e-business evolution with confidence and data integrity
- Reduce the cost and complexity of managing your SAN

The Tivoli solution offers the most comprehensive, open, scalable, end-to-end solution you need to manage your storage resources. By pioneering and perfecting the art of managing IT with innovative and efficient technology, Tivoli offers you one of the best solutions to manage your entire SAN infrastructure, acquire a competitive advantage, and maximize your company's ability to succeed in e-business.

Integrated SAN management for the power to accomplish more.

The Tivoli Solution

Tivoli Systems Inc. provides the industry's leading open, highly scalable, and cross-platform technology management solutions that span networks, systems, applications, and e-business endeavors. Leading companies around the world use Tivoli software and Tivoli Ready™ products to reduce the cost and complexity of managing networks, systems, databases, and applications. With headquarters in Austin, Texas, Tivoli is an IBM® company. Tivoli distributes its products worldwide through a network of global sales offices, systems integrators, resellers, and IBM sales channels.

Manage. Anything. Anywhere.™

Tivoli Storage Area Network Management in Action

An insurance company had been conducting business traditionally: building customer relationships through agents and sending bills and renewal notices by mail. Then management took advantage of two opportunities for rapid growth by moving some services to the Internet and acquiring a competitor.

The growth has stressed already overcrowded databases with an explosion of new information to be sorted, stored, located, and accessed continually by everyone in the newly expanded company. Growing databases and files on heterogeneous storage systems need to be blended and expanded, plus it is increasingly difficult to allocate and manage the additional storage space. Access and speed need to be

improved. In short, a hodgepodge of individual storage devices must work together.

Then the worst happens: a system failure causes loss of data and leaves agents unable to access customer information. IT leaders investigate implementing a SAN and ask Tivoli for help.

The Tivoli solution provides comprehensive tools to create a consistent, expandable data storage infrastructure, including data protection, file sharing, and fast recovery. One administrator at a centralized location knows what storage devices make up the enterprise, where they are located, and where to reallocate storage space if capacity approaches threshold levels. The result: a SAN running at peak efficiency, a company growing successfully, and happier customers.

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