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IT Business Brief

**Storage Networking:
Perspectives on Terminology and Meaning**
by Howard Goldstein

Technology

February 21, 2003

A note from the founders

Storage Networking: So many terms, so little time

The demand for storage in most enterprises is growing at around forty to fifty percent per year. At this rate of growth, the demand for storage doubles roughly every eighteen to twenty-four months. At the same time that the demand for storage is exploding, most enterprises are also demanding increasingly higher levels of application availability.

In order to manage the cost of storage successfully during this time of rapidly increasing demand, and at the same time improve application availability, IT professionals have a clear challenge. That challenge is to transition away from traditional methods of providing storage.

OK, identifying this challenge is simple. What is not so simple is determining how to make this transition in ways that provide both investment and career protection. And, if that was not stressful enough, storage networking vendors are creating a whole new set of vocabulary. This means that IT professionals looking to develop a transition plan for their company's storage, need to first develop a new vocabulary - one that describes a myriad of storage networking products and technologies.

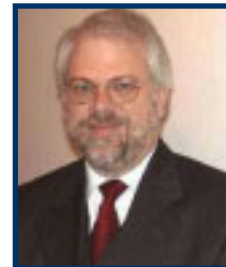
Storage Networking: Perspectives on Terminology and Meaning is a primer on some of the terminology used to describe the various approaches to storage networking. The primer is written by Howard Goldstein, a well-known industry consultant and trainer.

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IT Business Brief

Published by

IT Business Media.
www.ITBusinessMedia.Com

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Design/Layout Artist

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Storage Networking: Perspectives on Terminology and Meaning

- Howard Goldstein

Do you remember the opening lines to this Fred Astaire-Ginger Rogers song?

*You say eether and I say eyether,
You say neether and I say nyther;
Eether, eyether, neether, nyther-
Let's call the whole thing off!*

When it comes to storage networking, the refrain might sound something like this:

*You say switch and I say director,
You say bridge and I say gateway;
Switch, director, bridge, gateway-
Let's call the whole thing off!*

Or, in the spirit of the old "Certs is a breath mint! Certs is a candy mint!" commercials, an ad for storage networking might be:

"A SAN is a storage area network! A SAN is a server area network! A SAN is a system area network! Or maybe a SAN is the latest thing to SELL!"

The topic of this article pushes one of my hottest buttons. I believe that con-

sistent and appropriate use of terminology, whether words or acronyms, is one of the most important skills one can have in explaining technical concepts in storage networking.

This skill applies to all people in the business world, both technical and non-technical. Words are the building blocks of communication. Use the wrong word, or use a word that has

multiple meanings, and you invite miscommunication into your conversation.

Miscommunication and Over-Investment

It has been said that a picture is worth a thousand words, and a story is worth a thousand pictures. It all starts with words, though. Having a clear understanding through the spoh-

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ken word can either convey meaning or utterly confuse. In the storage environment, this semantic confusion can lead to misunderstood requirements and mismatched storage solutions, which in turn can result in an over-investment in a storage-networking infrastructure. The infrastructure might not even meet your basic needs such as high availability, performance, and maximized storage asset utilization (your No. 1 benefit).

Since we are discussing the importance of words, here are some pertinent definitions from the dictionary:

per-spec-tive - *the relationship of aspects of a subject to each other and to a whole*

ter-mi-nol-o-gy - *the vocabulary of technical terms used in a particular field, subject, science, or art; nomenclature, a system of words used in a particular discipline*

mean - *to design, intend, or destine for a certain purpose or end*

When you look at the definitions of these words, you see that relationships, discipline, and intent are keys. You cannot be cavalier with the terms and achieve the maximum intent. There is a big difference between iSCSI IP packet and Ethernet frame functions, yet people often use the term "packet" generically, even when speaking about specific technology scenarios.

I often begin storage networking talks by sharing with the audience

that I consider myself a "semantic ANALyst." One trait of someone who is "anal" is that they have a fixation and a one-track mind about certain things. I am that way with semantics. I try to focus, to a fault, on choosing the right word for each situation. When asked a question, I pause to consider my choice of words for a length of time that borders on the uncomfortable as I bring the semantics out.

What does this have to do with storage networking, you ask?

Jumbled Networking Terms

I have observed a reinvention of the meaning of networking terms over the last few years, as the storage vendors have begun marketing their products from a networking perspective. The storage industry has realized that the I/O interfaces of the past, including Integrated Device Electronics (IDE) Bus, Small Computer System Interface (SCSI) Bus, Mainframe Channel Bus and Tag, Enterprise System Connectivity (ESCON) infrastructures, and others, are actually small networks. Newer technologies that have been developed such as Fibre Channel, iSCSI, TCP/IP, and Gigabit Ethernet, extend enterprise storage assets to a broader number of devices over greater distances.

With the shift to emphasizing the networking aspects of storage, the storage industry has marketed products such as the legacy bridge,

which, from a pure networking perspective, is not a bridge at all but a physical transport gateway. The bridge's main function at its inception was to segment network traffic for performance isolation—not to convert from one physical transport technology to another.

Similarly, we now have the Fibre Channel "storage router" when there is no "routing" occurring at all. It's confusing enough to distinguish between the routing in switches versus the routing in routers without introducing product names that are not descriptive of the technical function they provide.

Yet another example: We look at the network configuration of a Windows operating system and see "default gateway" when we really configure a router. It is true that a router acts as a "gateway" between subnets, but the term "gateway" today has a specific meaning (or should!): translating one protocol to another.

Meanwhile, the terms "switch" and "director" imply that we are talking about different capabilities when, fundamentally, they are the same. Granted, these devices can differ in port count and availability, but the terms themselves are marketing inventions. And although bandwidth and throughput are related, they are very much separate concepts. As I like to say, it is one thing to make a conveyor belt move at 100 miles an hour, but it is much more difficult to get peo-

ple to step on this moving sidewalk at the same rate.

The term "SAN" is many things to many people. As Bill Clinton learned, even the word "is" can have different meanings to different people.

Please join me in taking a pledge, whether you are a storage networking vendor or customer, to be careful and thoughtful when using terminology, especially marketing-generated acronyms.

I will do my part in these columns as I attempt to communicate my ideas on storage networking. I will try to put the Tech View of storage networking into a clearer perspective and leave you satiated with understanding rather than starved with confusion as I attempt to clarify the technical issues and relate them to the IT business environment.



Howard Goldstein has over 30 years' experience in storage, data and telecommunications networking having positions in technology, management and education with practical technical experience in architecture, design, planning, implementation and operations. His focus ranges across various network architectures and products, specializing in storage networking including IP Storage, SCSI, and Fibre Channel technologies. Goldstein holds a BS in Computer Science from the University of Massachusetts and an MS in Telecommunications from Pace University, is a frequent speaker at NetworkWorld & Interop and Storage Networking World and is the founder of Howard Goldstein Associates, Inc. a technology and education company offering instructor led training.

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