



# The Gigaphone

## The Shouting Ground Newsletter

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May 2005  
Vol. 7, No. 3

### From the cubicle of the President up north ...

In the olden days, computers weighed several tons and took up entire rooms. These days, you probably carry the same processing power with you as you walk down the street. Your Palm Pilot, iPod, and cell phone all have more computing power than anyone could have dreamed of back in the days of the IBM 360. In those days, folks used "dumb terminals" which were basically that: a large screen sitting at your desk with green text and not much else. No floppy drives, no CD-ROMs, no hard drive. Just a power cord and a large cable that ultimately connected you to the big behemoth down the hall that actually did all the work.

As computing power grew and processors shrank, we saw computing power (and all associated peripherals) moving to the desktop. So arose the "client-server" model, which saw the disappearance of mainframes and the birth of a computing environment where machines were ostensibly equals. One computer (the client) asked another (the server) for a favor, whether it was a web-page, some E-mail, a database, or an office pool done up in Excel. The server dutifully obliges. Ironically, we appear to be going back to a mainframe type topology.

I've been spending some time lately working with a product called VMware. Given today's computing power, it's not surprising that it happened, but the concept is this: Why use one set of hardware for one system, when you can run multiple systems on the same hardware? Here's how it works. The host operating system is Linux. Then you run guest operating systems on top of it. Not only that, but you can run multiple guest operating systems on top of it. This is great when you have servers that you need, but they don't require a lot of actual computing power, like a Windows domain controller. Need two domain controllers? Run 'em both on the same hardware. Linux, being much more robust than Windows anyway, just sits in the background watching over things. If a guest Windows instance crashes, it simply spawns a new one! Here's the best part: Cluster VMware boxes together, and you can load-balance on demand. If you have a particularly busy web-server that requires extra CPU time on Wednesdays, the cluster can detect this and spawn a second version of the web-server on a separate set of hardware to handle the extra load. Then, as CPU time drops, it kills the second instance.

With this kind of flexibility, we're seeing more and more server farms that separate and modularize our needs into components

that are very much reminiscent of the old mainframes. Processing power is being relegated to chassis that hold multiple server blades with no internal storage. Disk space is being relegated to Storage Area Networks (SANs) that allow the administrator to dynamically allocate storage to whichever server blade needs it. Server goes down? No worries – pull the recalcitrant blade and throw in another. The user is none the wiser. As was the day of the mainframe. Will we go back to big heavy boxes with ominous green text? No, home users, of course, aren't affected by this. However, you corporate users out there: be prepared for less and less control over your desktop.

*Bryan Holloway,  
President*



### Reaching a Wider Audience

Whether it's a neighborhood newsletter, school memo, church bulletin, or group magazine, people have reached out to a wider audience for years. Internet Mailing Lists let you easily maintain your group membership, control the content, and save time and money by eliminating the need for paper and postage.

Once a Mailing List is set up, the Mailman software lets you administer your own list. You can control membership and be the sole moderator of content, or you can allow people to subscribe or unsubscribe at will, and post whenever they want. The List Owner determines the policies. List messages are delivered by E-mail. Mailman has features that allow you to:

- Maintain large lists of participants with minimal effort.
- Use real names for members and hide E-mail addresses.
- Perform searches on membership list.
- Use Multi-lingual support.
- Topic filtering to prevent off-topic messages.
- Flexible moderation and privacy controls.
- Web based management interface.

Lists take the form of <listname>@lists.shout.net. Mail sent to the list can be directed to a moderator, or sent out directly to all members. Archives of the list can be created automatically. Lists can be sent message by message, or in digest form, selectable by the moderator or subscriber.

A custom Mailing List is only \$ 10 / month for up to 500 addresses. Call us or contact [admin@shout.net](mailto:admin@shout.net) and let us set you up with a Mailing List for your group.

*Mike Berger,  
Director of Engineering*



## Rx for The Bloat

Spreadsheets can be wonderful tools to help you manage your data. That is until they get The Bloat. They don't mean to. They're relatively fast to set up and they start out simple. They're a nice, easy, efficient way to manage your numerical data. Everything is apples in your world. (As far as the data management is concerned, anyway.)

But then *It* begins to happen: Spreadsheet Bloat.

It starts out slow; your company grows and the data you're managing also grows. But then the data you manage starts to change also. Suddenly you find that there's a need to enter duplicate data in multiple worksheets, and you're storing data that isn't numerically based, such as contact information or recipe ingredients. Multiple columns begin to show up for the same type of information (phone, cell phone, fax, mailing address, billing address, and the list goes on).

The required reports start getting harder to compile and you need to be able to retrieve data faster but it takes longer. Several people need to access the spreadsheet and they mess it up – entry isn't consistent, data gets lost. Also, everybody who uses the spreadsheet may not need access to all the information in the document, but there's no way to limit access. Little by little, Tums® start to magically appear in your hand when you think about having to get into the spreadsheet. You begin to get dizzy and all this data doesn't seem to be related but you know it really is (or at least it needs to be). It becomes a huge tangle and knots are imminent. Its sheer size is almost staggering - you get lost trying to find the E-mail address for your organic olive and gooseberry vendor. Above all, you hallucinate that you can just click on that E-mail address you just found and send your message from there.

How do you spell relief for this nightmare that is all too common?

D-A-T-A-B-A-S-E

A relational database can easily grow as your company grows. Complicated spreadsheets are reduced to simple solutions. Multiple data types are untangled and managed quite nicely. Duplicate data entry is eliminated. Value lists and auto-fill options help create consistent data entry and minimize errors. Security can be established and permissions set for multiple types of users. Data becomes fast and easy to find. E-mail addresses can actually be clicked on and messages sent from the record. But most of all, the Tums® stop magically appearing in your hand when you think about working with your data.

If you're experiencing The Bloat, give us a call. We can customize a database for your specific needs. Let us help you get everything back to apples in your world again. (As far as the data management is concerned, anyway.)

*Shari Manea*  
Database Developer

## Eat Your Serial

The parallel bus interface has been the standard for over 20 years as the storage interconnect for mass storage systems. Hard drives come in two basic flavors, cost effective ATA and performance-oriented SCSI. While these standards have served well, today's increasing performance needs have prompted the mass storage industry to develop what is poised to be the standard for approximately the next ten years, Serial Attached SCSI, or SAS.

SAS and its subset Serial ATA (SATA) raise the performance bar of disk I/O significantly, as the SAS physical layer uses four serial channels running in parallel to create a theoretical 10Gb connection. In practice, the current crop of 1<sup>st</sup> generation SATA drives only utilize one channel at half duplex, or 150MB/s seemingly not much faster than the current ATA-7 spec of 133MB/s. Keep in mind though that transfer speeds are intended to double and eventually quadruple to 300MB/s and 600 MB/s respectively with the introduction of SATA-II and -III specs.

The SAS specification also includes native command queuing, one of SCSI's hallmarks, fully supported in the soon to be released SAS drives, and in a limited fashion on the current SATA drive offerings. Native command queuing both increases performance and reduces overall drive wear by being able to intelligently reorder disk commands based on the disk locations called. Suppose you have three pending I/O requests, the first is to read some data off the outer track of a disk platter, the second to write data to a sector on an inner track of the platter, then a third to again read data off another outer track sector. Native command queuing will decide based on the current head position whether the inner or outer track is closer, what order to read the outer tracks, and what combination will yield the least amount of head seeking, reducing wear on the heads as well as making the controller ready for new commands that much faster.

Another benefit to the SAS spec is that SAS controller boards can accept both SAS and SATA drives, which allows one to utilize a common backplane for two storage systems, high reliability and accessibility of SAS for online storage applications, and cost effective SATA drives for higher capacity nearline storage.

*Jim Creason*

*Director of Support Services*



## Fun Links

We all get a little bored now and then, so check out these fun links:

Here's a good site:

[www.rottentomatoes.com](http://www.rottentomatoes.com) (a fun collection of movie reviews)

Here's a fun way to spend your lunch hour:

[www.games.com](http://www.games.com)

And, last but not least:

[www.funtrivia.com](http://www.funtrivia.com)