



APPLETALK CHATTINESS - FACT OR FICTION?

There is an age-old myth that Appletalk is too chatty on intranet networks. Many mis-informed or uninformed administrators have used this as a reason to keep Macintosh computers off of company local networks. Users who prefer Macintosh computers over Wintel machines are often left defenseless, not understanding enough about the issue to argue the point, especially when they are arguing against an administrator who is assumed to "know better".

Any administrator who makes this claim, however, does not know better. In fact, they may not even care, considering that information dispelling this myth has been available for years now. A responsible administrator will properly research the issue to stay current and to make informed decisions. Unfortunately, the laziness of mindlessly following the herd often sets in, resulting in a lack of choice for users.

The following articles provide some technical information regarding Appletalk and the issue of chattiness. If you find yourself in a position of defending your Macintosh, here is some information to back up your claims.

MYTH: APPLETALK IS CHATTY

By Shelly Brisbin

Folks accuse AppleTalk of being a "chatty" protocol (one that sends too much data over a network). Because every AppleTalk device (such as a computer or a printer) constantly polls all the other AppleTalk devices on the network, the protocol generates a lot of packets. Theoretically, this causes traffic jams on a multiprotocol network.

AppleTalk is much less chatty than it used to be. Chances are that naysayers are basing their opinion on old software because they're not up on the latest Mac networking protocol. Several years ago, Apple introduced AARP (AppleTalk Address Resolution Protocol), software that cuts down on AppleTalk's chattiness and the packet storms that can result.

Many people who would smother AppleTalk are comparing it with the wrong protocol -- NetWare's IPX. It makes more sense to compare it with TCP/IP. Many organizations that once relied exclusively on IPX for server-based communication with PCs are adding TCP/IP or moving entirely to it. The move to TCP/IP also includes lots of Macs, which no longer depend just on AppleTalk for access to e-mail and other network applications. With so many people using TCP/IP, comparing AppleTalk with IPX is silly. When you compare AppleTalk with the right protocol, this myth is turned on its head -- TCP/IP is much chattier than AppleTalk and uses larger data packets too.

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The Mac Guild home page is at
<http://nexus.lmms.lmco.com/mac/> (or
<http://www.bobrk.com/lmms/mac/> for
outside the Lockheed Martin firewall).

APPLETALK CHATTY?

By Jim Anders

This is a tired, hoary argument from the mid to late 1980s. The general chattiness issue with AppleTalk was largely solved with AppleTalk Phase 2 - which was implemented by Apple when George Bush was still President. Issues with the use of AppleTalk traffic over WAN connections has also been solved for some time.

Of course, today, with the popularity and success of the WWW/Internet, the focus of attention is TCP/IP, so network managers generally prefer avoiding non-TCP/IP protocols. However, other than the inconvenience, there is no longer a valid technical reason to ban AppleTalk protocols, assuming, just as any other protocol, it is setup and administered correctly. And, with the majority of today's LAN/WAN traffic being IP, the small, incremental addition of AppleTalk traffic for printing and occasional FileSharing, just won't make any significant impact.

I wrote about this and other things AppleTalk-related in a book entitled "LiveWired: A Guide to Networking Macs", published by Hayden Books. It's been out of print for several years, but there haven't been too many changes to the protocol in that time, so as far as AppleTalk is concerned, it's still fairly current.

I have a number of spare copies of the book left and if anyone is interested, just contact the Kaidan office, and if you promise just to peruse the Kaidan website (QuickTime VR-related products), we will send you a copy of the book for free (Dr. Troen, I'll reserve a copy until I hear from you one way or the other).

It should also be noted that the individual who convinced me to write the "LiveWired" book, and who also generously wrote the book's foreword, is none other than Guy Kawasaki!

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CHATTING ABOUT APPLETALK

By Mike Basham

In a previous column about Macintosh networking, I made the statement that AppleTalk is not really a "chatty" protocol. Several readers sent me electronic mail about this, since they had been told by network managers that AppleTalk was too chatty for their network. The original column didn't go into details about what chatty means or why AppleTalk is falsely accused. These details are a little technical, but I'll try to explain without making your eyes glaze over.

AppleTalk was designed to make networks easy to use, while transmission control protocol/Internet protocol (TCP/IP) was designed to support very large networks. This accounts for why AppleTalk tends to generate more network traffic, which some refer to as chattiness. For example, if you want to share files with another computer over AppleTalk, all you have to do is open the Chooser and pick the computer you want from a list. To do the same thing over IP, you must know either the name or IP address of the computer you want to access.

Finding an AppleTalk device is kind of like ordering from a restaurant menu; you see all the options available to you, and you choose the one you want. TCP/IP is more like a telephone network; before you can call somebody, you need to know their phone number. If you don't, you can look it up in a book. AppleTalk is much more user-friendly, but it is not well-suited for very large networks like the Internet. You wouldn't want to have to pick from a menu of every phone number in the world whenever you wanted to call your friend. But AppleTalk can work well on networks of thousands of computers, so long as the network is managed correctly.

AppleTalk is more chatty than IP, but the extra network traffic is necessary in order to provide convenience. For example, unlike IP, AppleTalk devices don't need to have a static network address manually assigned, since they can pick a network number automatically when they start up. Whenever an AppleTalk device is turned on, it broadcasts 10 packets of traffic across the network. These packets are called "AARP" requests which stands for AppleTalk address resolution protocol. The 10 AARP requests broadcast a network address that the AppleTalk device would like to use. If no other device on the network responds to these AARP requests, the address must not be in use, so the new device uses that address and shuts up. If another device already has that address, the device tries again with another address.

In most cases, a device can find an unused address immediately, but on poorly-designed networks, there may not be enough network numbers to go around. If this is the case, the network will be chatty because new devices will have to work through many addresses before finding a free one. The solution to this problem is simple: configure the router so that it gives out more than enough addresses for the network segment it is responsible for. I won't go into the details of how to do this,

but if you're interested, send me e-mail and I'll explain further.

Another possible cause of network chattiness is the Chooser. When you open the Chooser and click on AppleShare, your computer must gather information about all the AppleShare devices on your network segment so it can show you a list. The Chooser updates dynamically so it can show you when a device has been turned on or off. To do this, it broadcasts AARP requests to all the devices of a certain kind in a single zone, and they all respond. In early versions of AppleTalk, this call and response went on as long as the Chooser was open. Now, it times out after a few minutes if the user leaves the Chooser open. Still, this can generate lots of traffic if many users open the Chooser at the same time. The key to managing this kind of traffic is to properly segment the network so that each logical zone in the Chooser maps directly to a physical segment of the network. That way, traffic doesn't have to pass through routers every time a user opens their Chooser. It is also important to keep the number of devices in a single zone relatively small. This means you should probably segment the network if you've got more than about 200 AppleTalk devices of the same type in the same zone.

LOOKING FOR MAC GIF'S?



No Prisoners.

You can find these and many other Mac GIFs on the Mac Guild web site at

<http://nexus.lmms.lmco.com/mac/>

or

<http://www.bobrk.com/lmms/mac/>

(outside the firewall)

NAUGHTY LIES

By Larry Peng

In its third annual "computer lies" review, PC Computing's Ed Bott poses the rhetorical question, "what is it about the computer industry that compels people to stretch the truth past the breaking point?" We often wonder about this too, particularly when it comes to Microsoft's unsurpassed history of lobbing gargantuan groaners at what should by now be an awfully suspicious public.

This year's "Lies" article forms a pair of bookends for PC Computing. Two years ago, they unearthed Windows 95 whoppers. This year, they take on the latest fusillade of falsehoods issued forth from the Microsoft camp for the purposes of flogging their latest "hot product," Windows NT. According to Bott, "Microsoft occasionally oversimplifies issues and smooths over the rough edges in NT."

While we admire the research, we think Bott is being a wee bit too kind. But judge for yourself: what follows is a summary of seven of the ten "NT Lies" published in the July issue of PC Computing.

UPGRADING FROM WIN95 IS EASY

The NT interface may look like Windows 95, but according to PC Computing, "installing NT over Windows 95 is impossible," and "even if you're exceptionally well organized, the upgrade will probably take several days from start to finish." Expect to wipe your hard drive, reinstall all of your applications, and sacrifice previously installed hardware to NT's incompatibilities. Microsoft, per usual, promises a fix -- in the next version. Is anybody still naive enough to believe that the next version of any Microsoft product will ship with fewer bugs than the previous edition?

NT WORKS WITH MOST PCS

Windows NT is particularly picky about device drivers, which means that finding the right combination of hardware to work with NT is equal parts research project and crapshoot. According to PC Computing, "one in three x86 systems that work with Windows 95

sputters and dies when faced with NT. If you've got an older audio adapter or network card, you'll probably need to replace it before you upgrade your operating system." Because of these complications, the magazine estimates typical upgrade costs at just under \$1,000.00 per machine, which the careful reader will observe is roughly equivalent to the entire cost of one, brand new, entry-level computer.

Meanwhile, Bill Gates takes every opportunity to sneer at the entire concept of the Net Computer (NC), at least as it is proposed by his competitors. The standard Gates tag-line on the subject: "NC stands for not compatible."

This Irony Alert has been brought to you by the International Irony Alert System. You will receive no further warnings...

NT MEETS MILITARY STANDARDS

Microsoft claims that Windows NT has earned a prestigious "C2" security rating from the National Security Agency (NSA). But what they prefer not to mention is that the NSA rating only applies if the NT machine is not hooked up to a network. Observes PC Computing, "Would you install a copy of NT Server without connecting it to another computer? Of course not."

NT IS ROBUST AND CRASH-PROOF

According to PC Computing, "compared with Windows 95, [NT is] as solid as Gibraltar. A buggy application locks up Windows 95 so tight only the power switch can undo the damage." But running NT involves learning to live with the dreaded Blue Screen of Death, a symptom of buggy drivers and memory conflicts. Says PC Computing, "even more insidious are memory leaks, which slowly drain resources from the operating system until performance becomes so sluggish that rebooting is the only alternative.... Most depressing of all ... crashes are so common that they've earned the ultimate in backhanded compliments--their own widely used acronym, BSOD."

NT SERVER IS WORTH MORE

With Windows NT, Microsoft offers users a Hobson's choice and introduces the brave, new concept of value enforced by edict. The two versions, NT Server (NTS) and NT Workstation (NTW), are essentially identical, except for the license agreements and the price. According to Microsoft, running a network with more than ten simultaneous connections on a cheaper Windows NTW system is illegal, though technically perfectly feasible.

Microsoft's solution: pay them an extra \$450.00 for NTS, and then toss that other web server application in the trash, because NTS comes bundled with Microsoft Internet Information Server. Try the less expensive solution -- running a competitor's server application on NTW -- and according to PC Computing, "you would be violating the Microsoft license agreement, and a disgruntled employee could turn you in to the Business Software Alliance, with consequences including stiff fines and public humiliation. But hey--it's your business." Well, it used to be anyway.

ZERO ADMINISTRATION IS HERE

Microsoft's "Zero Administration Windows" scheme is intended to take the control of the PC out of the hands of users, and put it back into the hands of the network administrators, thus theoretically saving everyone scads of time, grief and money. PC Computing notes the fundamental irony of this maneuver. Wasn't the PC supposed to put power onto the user's desktop? And secondarily, notes the magazine, "it doesn't even begin to address the real burdens of PC ownership, which still requires hours of upfront administrative effort before a user can get to work."

Microsoft's evasion of these issues is a classic: "In effect, 'Zero Administration' means zero administration for users," they coyly admit. Now we understand: Windows still won't work properly, and will still be a nightmare to maintain, but now the ordinary user will be powerless to do anything about it. In case it wasn't already painfully obvious,

perpetuating these huge overhead costs is one way Microsoft builds product loyalty on the part of network administrators and consultants, the only people who really count in the Microsoft scheme of things. Users are an expendable commodity.

NT WORKS GREAT ON NOTEBOOKS

Windows NT is so power-hungry and feature poor, that PC Computing warns notebook users not to expect "to get much more than an hour out of a fully charged battery." PC Cards can't be added on the fly, and even Windows 95's dubious implementation of "plug and play" doesn't work with NT.

Once again, Microsoft promises a better tomorrow, but don't expect them to offer any apologies for today.

REFERENCES:

1. NT Lies, PC Computing. The basis for the above article.
2. Gates, at Comdex, Touts Windows NT for the Home, Cox News Service.
3. This TechWeb article rebuts a Microsoft claims that their NT/Enterprise systems will be less than half the cost of the nearest UNIX competitor.
4. Microsoft set to post patch for NT flaw that brought down its Web site, InfoWorld. It's one bug fix after another, and users are beginning to ask why Microsoft can't seem to get it right.
5. Microsoft promotes Windows NT, but turns to UNIX for its own important tasks, according to the Globe and Mail (Canada). A simple query into Microsoft's main "name server" reveals that this mission-critical task is being handled by a machine running Unix, not the company's much-touted Windows NT. The Globe and Mail apparently withdrew this article and the claims, though Microsoft's use of a Unix name server had already been independently verified.
6. Microsoft integrates NetShow 2.0 into Windows NT Server, C | NET. Microsoft has difficulty competing against the video and audio streaming technology offered by Progressive Network's RealAudio, so they engage in tactics unavailable to the competition: integration of their rival product into the Windows NTS operating system software.
7. MSNBC replaces its NT Servers with Unix installations. Why? "Simple. They didn't work," according to PC Week.

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iBook Lags PCs on Performance... NOT!

I've spent the last 2 days working intensively on my new iBook... Blueberry, and thanks for askin'!

Apple is definitely correct in calling it the Habenero of Laptops. It definitely falls into the i-category for Apple meaning that it is sleek, fascinating, and a real computer. Ok, so once you get beyond the pretty outside of the box, does it really have what it takes to be a lean, mean G3 Pentium crunching machine! The answer is quite simply YOU BET!

My system is the standard iBook, with an additional 64Meg of RAM added. With the typical 1Meg of V-Memory set up, this computer screams in all applications, including Java, which I must say is slow on my old 5300. Adding the additional memory on the iBook will change the performance drastically. So if that article used the Standard 32Megs, I'm sure it would be slow. However we know that most people now need at least 64Megs to run most high-end Apps.

Lets start with the Pros:

GREAT SCREEN

Even from side angles you can still easily see the screen. It is sharp, clear and responsive. My screen doesn't even have lines in it when it displays different patterns, which was typical of other Laptop displays.

TRACKPAD

The trackpad is well integrated into the machine, so you clean it. Also is much more solid state than the one I had on my old 5300. Good Fix for durability.

INTERNET SPEED

I never knew 56K could be so fast. If you haven't gone to the G3/G4 systems, you don't yet know what you're missing. The iBook downloads pages much faster than they even load on our Gateways here that are connected via EtherNet. It lets you visit those "soup'd" up site without waiting forever. Being impressed is an understatement!

CONNECTORS

Ok, so no doors, or covers for the ports. Well, they are protected nicely, by being recessed in the book. So you definitely don't have to worry about damaging your ports.

FAST CD-ROM - 24 X

Speaks for itself.

THE PRICE

The price is 1599.00 out of the box, and 1850.00 via the MUG group, shipped and installed with 64Megs of RAM.

Cons:

PORTS

Only one USB port. No chance for FireWire. No Video out - but Potentials exist with USB. No Built in Speaker or Port - Still waiting for a USB solution.

MEMORY

It comes with only 32Megs Standard, and can only have a 128 Meg Upgrade.

So in the end, this is a Great Machine. Everyone who has seen it here at the Cape has been very impressed. They say that despite that Macs at Lockheed have become "outlaws". I tell 'em that the game Nanosaur is actually a Metaphor for MacUsers who get to hunt down Pentium (wintel) machines! :-)

I would recommend this machine, with the memory upgrade, to anyone who is looking for portability at a reasonable price. If you have any questions that I haven't answered. Please feel free to ask.

Sincerely,
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