

## **VPS Blocks Peer-to Peer File Sharing**

### **Why are certain music files and the ability to utilize peer-to peer file sharing blocked?**

There are actually a few issues involved here. One involves music and copyright laws and the other involves network security. Both are very important issues.

Almost all of us remember the website Napster and the reason for their legal problems and eventual shutdown. The Napster site allowed people on the Internet to download music files at a very rapid pace from the Napster site without regard to copyright rules and regulations. Very soon after the Napster shutdown, other sites became very popular such as Limewire and Bear share. The following from the Limewire website [http://www.limewire.com/index.jsp/what\\_gnut](http://www.limewire.com/index.jsp/what_gnut) illustrates what occurred:

On March 14, 2000, at 11:31 AM EST, a message was posted on the underground hacker website Slashdot indicating that AOL's Nullsoft division has released an "open-source Napster clone" named Gnutella, capable of searching for and downloading any kind of computer file. On March 15, 2000, at 4:25 EST, Wired News reported that Nullsoft's distribution of the "file-sharing software tool which could be even more potent than Napster" had closed down, suggesting that the reason for this was the potential threat that Gnutella posed to record labels Warner Music and EMI, which were in the midst of merger talks with AOL. However, in the time that the software was available from the Nullsoft site, several thousand downloads took place, and various third parties soon set to work cloning the Nullsoft version of the Gnutella program.

As indicated above, the demise of Napster and ability to download files at a rapid pace prompted the Gnutella program to proliferate. Gnutella employs the concept of Peer-to-Peer File-Sharing over the Internet. A detailed example of this is provided below from the Limewire website <http://www.limewire.com/index.jsp/p2p> :

The reach of this Peer-to-Peer sharing was limited to the circle of computer users an individual knew and agreed to share files with. Users who wanted to communicate with new or unknown users could transfer files using IRC (Internet Relay Chat) or other similar bulletin boards dedicated to specific subjects, but these methods never gained mainstream popularity because they were somewhat difficult to use.

## The Gnutella Structure

Unlike a centralized server network, the Gnutella network does not use a central server to keep track of all user files. To share files using the Gnutella model, a user starts with a networked computer, which we'll call "A," equipped with a Gnutella "servent" (so called because the program acts as a combination of a "server" and a "client"). Computer "A" will connect to another Gnutella-networked computer, "B." A will then announce that it is "alive" to B, which will in turn announce to all the computers that it is connected to, "C," "D," "E," and "F," that A is alive. The computers C, D, E, and F will then announce to all computers to which they are connected that A is alive; those computers will continue the pattern and announce to the computers they are connected to that computer A is alive. Although the reach of this network is potentially infinite, in reality it is limited by "time-to-live" ("TTL") constraints; that is, the number of layers of computers that the request will reach. Most Gnutella servents will reject any network messages which have TTL's that are excessively high.

Once "A" has announced that it is "alive" to the various members of the peer network, it can then search the contents of the shared directories of the peer network members. The search request will send the request to all members of the network, starting with B, then to C, D, E, F, who will in turn send the request to the computers to which they are connected, and so forth. If one of the computers in the peer network, say for example, computer D, has a file which that matches the request, it transmits the file information (name, size, etc.) back through all the computers in the pathway towards A, where a list of files matching the search request will then appear on computer A's Gnutella servent display. A will then be able to open a direct connection with computer D and will be able to download that file directly from computer D. The Gnutella model enables file sharing without using servers that do not actually directly serve content themselves.

## Advantages of the Gnutella Model

The Gnutella Network (gNet) has a number of distinct advantages over other methods of file sharing. Namely, the Gnutella Network is decentralized and hence more robust than a centralized model because it eliminates reliance on centralized servers that are potential critical points of failure.

The Gnutella Network is designed to search for any type of digital file (from recipes to pictures to java libraries). The Gnutella Network also has the potential to reach every computer on the Internet, while even the most comprehensive search engines can only cover 20% of websites available.

Messages are transmitted over Gnutella Network in a decentralized manner: One user sends a search request to his "friends," who in turn pass that request along to their "friends," and so on. If

one user, or even several users, in the network stop working, search requests would still get passed along.

Employing a Gnutella network of file sharing does enable great communication capabilities, but because of that capability there are serious network security issues. By the very structure of the Gnutella network, files are transmitted from end users who are almost certainly unknown to each other. As transmitted files are not just confined to music or picture files, other very damaging files may be transmitted which can seriously affect a local or wide area network. With well over 3,700 networked computers within the Vineland School District, damaging files can cause serious network problems. This is why Peer-to-Peer file sharing is blocked.

The other issue involved with music files is copyright laws and this issue relates back to the ability of the Gnutella network file sharing to receive files from end users who are almost certainly unknown to each other. A brief explanation of music files and copyright laws <http://www.reach.net/~scherer/p/copyrit1.htm#d2> are as follows:

Computer music files come in a variety of formats: MIDI, MOD, WAV, RA, RMI and all sound recording methods. Computer music files are another form of recording music -sometimes even referred to as "digital sheet music" in case of MIDI and other sequencer files. "Digital Sound" files are sound recordings like CDs. Therefore they constitute a new creation or a use of music like printing sheet music, performing music, or recording on tape. Both- creation and use - are protected and regulated by national and international copyright laws. For everyone involved in creating music and/or recordings professionally - this page could end here - nothing more to say . However, many people have not recognized that copyright applies to all uses of music- including computer music recording- and also using such recordings in publications..

The right to make copies from an original piece of a new creation. The copyright is the exclusive right to make copies of the original - hence the name. The word duplication clearly states by its name that making one single reproduction is already copying(duplicating) and that means you need permission from the owner of the copyright.. The copyright revenues - called royalties - are shared between all participants in the venture: normally the composer, lyricist (the person who wrote the words ), and the publisher. What about the recording artist(s) who performed the song, the record company (label), and the distribution company? They should collect on another right, but that does not stop them from trying to "cut in" on as much as they can grab from the author's copyright revenues.

Most people think there is only one copyright, but there is one important thing to be understood: A recorded piece of music is actually a subject of two (2) separate, but layered copyrights. Sometimes referred to as copyright © and copyright (P) the creation copyright of the author is most commonly understood and respected. The composer owns this right to his music. In most

cases this copyright is assigned to a publisher to "sell" the song. That is what copyright contracts are about.

The other is the recording performance production copyright, which is the right of the performing recording artist(s) to their specific interpretation (production/performance) of the song/music which is recorded . However, the recording artist(s) can only use the music written by the composer under a copyright license ! The performing artists create the additional copyright of their performance in the recording production - on top of the composer/lyricist creation copyright. That is why those "recording rights" are called in legal terminology "Neighboring Rights".

How does copyright affect a normal person not professionally involved in music? The same way as it does the professional -there is no exception (e.g. see your license agreements, that came with your software). If anyone is using music under copyright for any other than strictly personal use - royalties are due ! This includes especially recording in any form, broadcasting, printing, playing /performing to audiences, or including for use with other media.

When you use recorded music you have to pay royalties to the composer/publisher collected by copyright royalty agencies and you have to pay the artist/record label for the performance production right. With buying the record you acquire both these licenses for your personal use only - on older records this license was always printed on the record label. The fine print states clearly that it is licensed only for personal use - not for broadcasting or re-publishing or public performance or any commercial venture. This applies the same to tapes and CDs - the fine print is in the booklet or on the box panel card. Using this music as a D.J, on the radio or for a movie, TV show , dance etc. generates "commercial use" copyright fees. Including music in webpages or other files or making them available to others ( per FTP or downloading) constitutes (re-)publishing /broadcasting of this music to the public! Are there any copyright free music-files ? Not really - only, if the recording artists make no claim to the production/performance and the music used is in public domain .

What about MP3 files? Are there copyright issues surrounding them? This is best explained by the following: <http://www.nlc-bnc.ca/9/1/p1-261-e.html>

The key issue surrounding MP3 is copyright piracy. Artists and record companies claim that they are losing money due to pirated music being shared and distributed online. MP3 has no security or copyright protection built in, and illegal copying and distribution of copyrighted songs on the Internet are rampant.

In an effort to address this new technology and the concept of royalties, the United States congress passed the Audio Home Recording Act of 1992, United States Public Law 102-563  
COPYRIGHT ACT OF 1976, AS AMENDED CHAPTER 10. DIGITAL AUDIO RECORDING

DEVICES AND MEDIA [http://www.brouhaha.com/~eric/bad\\_laws/ahra.html](http://www.brouhaha.com/~eric/bad_laws/ahra.html)

### Subchapter C. Royalty Payments

#### Section 1003. Obligation to make royalty payments

##### (a) Prohibition on importation and manufacture

No person shall import into and distribute, or manufacture and distribute, any digital audio recording device or digital audio recording medium unless such person records the notice specified by this section and subsequently deposits the statements of account and applicable royalty payments for such device or medium specified in section 1004.

As evident in the above paragraphs, copyright laws are encompassing and with the advent of digital audio technologies, the issues are complex. Downloading music files from end users or sites without securing copyright privileges or royalty payments is not what the Vineland School District desires to promote. To remain compliant with the laws and also to promote a good example of respecting the creative and performance rights of others, the Vineland School District must restrict the downloading of music files.