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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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CAPITOL RECORDS, LLC,

Plaintiff,

Civil Action No: 12 CIV 0095
(RJS)

- against -

REDIGI, INC. ,

Defendant.

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**DECLARATION OF COLIN WORTH IN SUPPORT OF
DEFENDANTS' MOTION FOR SUMMARY JUDGMENT**

I, Colin Worth, pursuant to 28 U.S.C. § 1746, declares under the penalty of perjury, as follows:

1. I am the author of the ReDigi client software for Macintosh computers.
2. My background in computers dates from 1982, when my 3rd grade teacher taught me Basic on a Tandy TRS-80 computer. I also learned to use the DOS operating system and did a small amount of 6502 Assembly language programming on several models of Atari 8-bit computers.
3. In high school, I learned the C programming language (hereinafter "C Language"), which continues to be my primary programming language today.

4. I graduated with a M.S. In Physics from Haverford College in 1995, and a Ph.D. in Physics from Boston University in 2005.

5. During my tenure at Boston University, I worked on an optical waveguide biosensor to detect trace amounts of pathogens in liquid samples. I did data acquisition using a detector array connected to a Labview program that I wrote, and analyzed the results with programs I wrote in the C Language, and other waveguide simulation software.

6. During this time, I also became familiar with the computer languages of Perl, Bash scripting, Matlab, and the Unix/Linux operating system, on which the Mac operating system is based.

7. Thereafter, I worked for three (3) years at Photodetection Systems in Acton, MA, where I did scientific programming on the software side of a full body PET scanner. Most of the software work involved coordinating and analyzing data from a ring of 12 sensors surrounding the PET patient, piped into a cluster of eleven (11) Linux-based computers. Data collection, physics-based corrections, and image reconstruction were done in the C++ Language, in parallel algorithms across all eleven (11) computers.

FILE TRANSFERS FROM THE REDIGI MACINTOSH CLIENT TO THE REDIGI SERVER

(A) Introduction to the ReDigi Macintosh Client

8. The Macintosh version of the ReDigi Mac Client software (the “Mac Client”) is based on a prototype written by Lawrence Rudolph (Rogel). The purpose of the software is to manage the relationship between the music files on a user's Apple Macintosh computer (the “Apple Computer”) and the contents of the user's ReDigi account.

9. The Mac Client performs four main tasks: First, it scans a user's permanent hard drives, attached drives, and any mounted removable media for music files (the “Searchable

Drives”) and makes a preliminary evaluation of each music file that it finds. Information about music files that may be eligible for sale on the ReDigi system is stored in a local database on the machine, and updated whenever any changes are made to the user's Searchable Drives. Secondly, the Mac Client alerts the ReDigi server (as well as the user) if a music file is found that has already been sold or set-for-sale by him or her through ReDigi. Third, the Mac Client migrates eligible music files from the user's computer to his or her ReDigi Cloud. Fourth, the Mac Client provides access to the user's ReDigi Cloud, allowing him or her to download copies of songs for personal use (the “Personal Use Copy”) and to set songs for sale or cancel an existing sale.

10. The Mac Client uses either of two distinct algorithms to migrate music files from the user's computer to the ReDigi Cloud, depending on whether the user purchased the music file before or after installing the Mac Client.

(B) File migration and sale of music files purchased after the Mac Client was installed (ReDigi 2.0)

11. Since June 11, 2012, once the Mac Client is installed, the original music file(s) that a user purchases from iTunes (the “Eligible file(s)”)¹ are no longer downloaded directly to the user's hard drive. ReDigi has developed a method to store the Eligible File's output from iTunes directly onto the ReDigi Cloud, instead of the user's hard drive.

12. Normally, music files purchased from iTunes are downloaded to the user's hard drive in a temporary directory inside the iTunes Media folder. However, when the ReDigi Mac Client software is installed, it replaces the iTunes Media folder with a link to a ReDigi user level file system which intercepts iTunes music file downloads, the Eligible Files, and re-routes them

¹ “Eligible File(s)” solely refers to the original source file purchased from iTunes by the user as determined by Media Manager as defined in the Rogel Decl. ¶5

to the ReDigi Cloud where each is assigned a unique key that is solely associated with that user and that iTunes music file.

13. The ReDigi user level file system communicates with the Mac Client via a direct socket connection, and with iTunes indirectly via Fuse4X, an open-source kernel extension that allows special user level file systems to co-exist with regular fixed and removable-media file systems that are also attached to the user computer, eg. an ipod, ipad, external drive.

14. Normally, when a software program, such as iTunes, writes to a file system location, a system request is made to the operating system to write data to the physical device – eg. hard drive, dvd drive, external hard drive – corresponding to that file system. The purpose of the Fuse4X kernel extension is to take that system request and forward it to the ReDigi Mac Client, which itself responds to the request.

15. The ReDigi user level file system remains transparent most of the time, forwarding file system requests to the actual iTunes Media folder - unless it determines that iTunes may be outputting an Eligible File, in which case it directs the Eligible File directly to the ReDigi Cloud.

16. Because the file system requests made by iTunes to write the Eligible File (its acoustics and meta data) are intercepted before reaching the user's hard drive, the Eligible File is never written or saved to the user's computer. As a result, the **original source iTunes music file**, that is, the iTunes music file, the Eligible File, that the user purchased from iTunes, is saved directly, for the first time ever, on the ReDigi Cloud servers.

(C) File migration of music files purchased before the Mac Client was installed

17. A ReDigi user may migrate an Eligible File from his or her hard drive to the ReDigi Cloud if the music file passes an initial validation check. When the ReDigi user, who

has now downloaded the Mac Client, makes a request to transfer an Eligible File, the Mac Client looks up all copies of that particular Eligible File in the local database of the user's Searchable Drives, eg. all of the Tom Petty song, "Breakdown".

18. The Eligible File is migrated in many small pieces (hereafter "Blocks") by lifting the blocks from the users hard drive and migrating them to the ReDigi Cloud server. (Note that the word Block here refers to an arbitrarily small (<16 kb) section of the Eligible File, as opposed to a file system block, (defined as the minimum length of a section of data stored in a particular file system type.)

19. The Eligible File Blocks are each transferred in reverse (starting at the end, ending at the beginning).

20. Each Block is processed in exactly the same way. First, the position of the Block is defined so that the end of the Block is aligned to the current end of the Eligible File, and the contents are read into memory. The Block is removed from the end of the Eligible File by truncating the Eligible File, so that the Eligible File shrinks by an amount equal to the length of the Block.

21. The contents of the Block are migrated to the ReDigi Cloud server via a binary HTTP post request.

22. Each Block is taken from the current end of the Eligible File as it shrinks. Thus, each successive Block contains the data content just prior to the previous one. Since the ReDigi Cloud server receives the Blocks that make up the Eligible File in reversed order, the ReDigi Cloud server receives the original whole Eligible File in reverse order, without any discontinuities.

23. As each Block is migrated from the user's hard driver, to the ReDigi Cloud server, and saved to the ReDigi Cloud server, the user hard drive file shrinks in size and the server Eligible File grows in size accordingly.

24. When all of the Blocks, have reached the ReDigi cloud server they are assembled into a format that is perceivable and can be played using an Mp3 player or other program

25. This is all achieved without copying and without reproduction and without deletion of the Eligible File.

(D) Management of music files that have been migrated to the ReDigi Cloud

26. Once the Eligible is saved on the ReDigi Cloud server, it is assigned to the user's ReDigi Cloud account, from which he or she can download a copy for his or her personal use (the "Personal Use Copy"). If at some point, the user wishes to sell the Eligible File, he or she can inform the Mac Client, which deletes all of the user's Personal Use Copys of the Eligible File before setting it for sale on the ReDigi website.

27. When the Eligible File is sold to another user, no copy, reproduction or transfer is involved – instead, the server database is simply changed to reflect the change in ownership: the Key that identifies that specific Eligible File is removed from the seller's account and added to the buyer's account. Thus, the sale of Eligible Files from one user to another occurs without touching the original Eligible File.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 20, 2012 in Cambridge, Massachusetts.



Colin Worth