Jailbroken: Examining the Policy and Legal Implications of iPhone Jailbreaking

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INTRODUCTION

Since the Apple iPhone premiered in 2007, hackers have attempted to push the boundaries of the device’s technological capabilities.¹ This process of enabling iPhone users to take advantage of the technology not sanctioned by Apple is commonly known as “jailbreaking.”² Although jailbreaks are released by small groups of hackers, each release has been met with widespread use by iPhone owners.³ Apple, wishing to protect its own interests as well as the interests of cell phone service providers, has petitioned to outlaw jailbreaking, and claims that the practice breaches Apple’s copyrights to the iPhone operating system (iOS)⁴ under § 1201 of the Digital Millennium Copyright Act.⁵ Proponents of jailbreaking, namely the Electronic Frontier Foundation (EFF), claim that the use by jailbreakers is Fair Use of Apple’s iOS, and also set forth several policy reasons supporting jailbreaking.⁶ In 2012, the Librarian of Congress ruled that jailbreaking was exempted from § 1201 protection, allowing jailbreaking to be legal for the next

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² See id.

³ The latest release of jailbreak software was released on February 4, 2013, and was downloaded 1.7 million times by February 5, 2013. See Andy Greenberg, Inside Evasion, The Most Elaborate Jailbreak to Ever Hack Your iPhone, FORBES (Feb. 5, 2013, 8:52 AM), http://www.forbes.com/sites/andygreenberg/2013/02/05/inside-evasion-the-most-elaborate-jailbreak-to-ever-hack-your-iphone/.


three years.\textsuperscript{7} This article will analyze the issues of law concerning jailbreaking as well as rebut Apple’s policy arguments in support of users. Additionally, this article will try to reconcile the conflicting decisions of the Librarian of Congress regarding jailbreaking and cell phone service unlocking.

**A BRIEF HISTORY OF JAILBREAKING**

The process of jailbreaking began because users were unhappy with the services offered by Apple pertaining to the iPhone.\textsuperscript{8} In the early iterations of the iPhone, users were unable to unlock the device to use with service providers other than AT&T. In addition, the device could not be used as a Wi-Fi hotspot and custom themes could not be installed onto the device.\textsuperscript{9}

### Technical Aspects of Jailbreaking

In the early versions of the iPhone, hackers were able to exploit bugs found in the bootrom, which allowed the jailbreak to exist throughout the life of the device, and could not be fixed by Apple through a software patch.\textsuperscript{10} Once Apple realized that jailbreakers exploited the device through the bootrom, Apple adopted more extensive security measures, and hackers had to find another way to jailbreak the iPhone.\textsuperscript{11} The iPhone 4 was the last device that could successfully use the bootrom; following this, hackers were able to perform jailbreaks on the iPhone 4S through the use of software exploits in iOS 4 and 5, but iOS 6 was strongly protected against jailbreakers.\textsuperscript{12} On February 4, 2013, a jailbreak known as Evasion became the first to crack the protections of iOS 6.\textsuperscript{13} Evasion uses five bugs in iOS 6 to infiltrate the security of the operating system, and results in the removal of Apple’s protection against installation of restricted programs.\textsuperscript{14}

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\textsuperscript{8} Sarah Perez, *Behind The Scenes Of The iPhone 5 Jailbreak*, TECHCRUNCH (Jan. 21, 2013), http://techcrunch.com/2013/01/21/behind-the-scenes-of-the-iphone-5-jailbreak/.

\textsuperscript{9} Id.

\textsuperscript{10} Id.

\textsuperscript{11} Id.

\textsuperscript{12} Id.

\textsuperscript{13} See Greenberg, *supra* note 3.

\textsuperscript{14} Id.
Capabilities of a Jailbroken Device

To take advantage of a jailbroken device, the user usually installs Cydia, an unauthorized alternative to Apple’s App Store. Some of the applications offered through Cydia that are unauthorized by Apple or unavailable in the App Store include MyWi, iMame, and iCaughtU. In addition to these apps, jailbroken iPhones can install themes to change the aesthetic quality of the operating system, change the capabilities of Apple’s “personal assistant” app, Siri, and the overall interface capabilities can be tweaked by the user to best suit the user’s needs. One of the most popular services available through Cydia was Hackulous. Hackulous allows the user to download “cracked” apps from the App Store through its program, Installous, meaning apps that are available for a price in the App Store are available for free on Installous. Although the leading app piracy service through Cydia recently shut down, the closure resulted in a race by other developers to become the leading app piracy service on Cydia, which could lead to even more app piracy than in the past.

Besides piracy, the Cydia marketplace is riddled with malware. By jailbreaking an iPhone, the user strips the device of all protections offered by Apple, and subjects the device to software developed by third parties that may contain viruses and other bugs, which could essentially render the device useless. Although marketplaces such as Cydia may exercise some security control over the apps made available to the user, the marketplace is not able to police these apps as

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15 See Perez, supra note 8.

16 MyWi allows the iPhone to become a mobile WiFi hotspot; the app uses the iPhone’s internet connection from the cell phone service provider, and transforms it into a wireless signal that can be used by laptops, tablets, and other devices that use WiFi. Dylan Love, 10 Reasons Why You Should Jailbreak Your iPhone, BUSINESS INSIDER (Feb. 4, 2013), http://www.businessinsider.com/should-you-jailbreak-your-phone-2013-2?op=1.

17 iMame allows the user to install classic Nintendo games not available in the App Store. Id.

18 iCaughtU utilizes the iPhone’s front facing camera to take a picture of any user who inserts an incorrect password to access the iPhone. Id.

19 Id.

20 See Perez, supra note 8.


22 Id.

23 Larry Seltzer, Please Don’t Jailbreak Your iPhone, PC MAG. (Mar. 7, 2009), http://securitywatch.pcmag.com/apple/284719-please-don-t-jailbreak-your-iphone.

24 Id.
thoroughly as Apple. While tech-savvy users may be able to identify malware before it is installed or immediately after it is installed, it is unlikely that the average user would notice any changes to the iPhone’s operation until the phone is “bricked,” or so pervasively affected by malware that the device no longer functions.

LEGAL CLAIMS

The main proponent in favor of jailbreaking is the EFF, who provided the Librarian of Congress with a lengthy brief regarding the legal and policy reasons for maintaining jailbreaking as an exemption from § 1201. In this section of the article, EFF’s defenses will be established, followed by the legal claims of Apple, and lastly, the legal justification for the exemption granted to jailbreakers by the Librarian of Congress will be discussed.

Claims Advanced by EFF

EFF’s first claim is that Apple’s software license is not violated by hackers or users. Due to the varying methods of jailbreaking an iPhone, it is unclear whether the different methods are “decrypting, modifying, or creating a derivative work of the iPhone OS” as required by § 1201. Some methods of jailbreaking involve the addition of code to the existing code without changing or modifying the iOS code, and it is unclear without judicial interpretation whether this method of jailbreaking is in violation of Apple’s software license agreement.

The main argument advanced by EFF is Fair Use under § 107 of the Copyright Act. In a fair use analysis, the court takes four factors into account when determining whether an unauthorized use of a copyrighted work is legally permitted; these four factors include: (1) the purpose and character of the use, including whether such use is of commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality

25 Id.
26 Id.
27 See Reply Comments of the Electronic Frontier Foundation, supra note 6.
30 See Wolk, supra note 28, at 809–10.
of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work. 32

EFF contends that under the first factor, the court should rule in favor of jailbreakers because the use by jailbreakers is not commercial in nature; hackers operate on the basis of donations, and likely do not receive any donations from users until the jailbreak has already been released. 33 Without citation, the EFF contended that the court has traditionally analyzed a non-commercial fair use without considering the second and third factors. 34 EFF contends that the fourth factor should also favor jailbreakers because the use of iOS by Apple is not commercial in itself, and therefore any derivation of the copyrighted iOS will not affect the potential market or value of the work. 35 This argument is grounded in the fact that the iOS is included with the hardware (iPhone), it is inseparable from the hardware, and it can be downloaded for free on Apple’s website. 36 Although EFF’s argument is flawed, particularly regarding the first factor, Apple has not had an opportunity to challenge the validity of this defense in court.

Claims Advanced by Apple

Apple’s first basis for a legal claim is grounded in § 1201 of the DMCA. 37 This section of the DMCA prevents third parties from circumventing technological measures taken by an author of copyrighted material to protect the material from outside influence. 38 Section 1201 protects the copyright holder from third parties who “try to profit from the works of others by decoding the encrypted codes protecting copyrighted works, or engaging in the business of providing devices or services to enable others to do so.” 39 Based on this interpretation of § 1201, it seems that Apple would have a very strong claim against any hacker who releases a jailbreak to the public. Hackers are attempting to cash in on Apple’s copyright by soliciting donations from users of the jailbreaking software. 40 Because jailbreaking

32 Id.
34 See generally Wolk, supra note 28.
35 Id.
36 Id.
38 Id.
40 See EVASI0N, supra note 33.
is a complex process which uses decryption of Apple’s protections to exploit bugs in the iOS software.\textsuperscript{41} Apple should also be able to establish that hackers “circumvent a technological measure” as required in § 1201.\textsuperscript{42} Apple’s main challenge with applying § 1201 is the exemption provision in § 1201(a)(1)(C), as discussed infra, as well as the Fair Use defense, as discussed supra.\textsuperscript{43}

To rebut the Fair Use defense, it would seem that Apple would have a fairly strong claim. For the first factor, Apple has a strong claim that jailbreaking is a commercial activity because the hackers are receiving compensation in the form of donations for their work,\textsuperscript{44} and there is an economic effect derived from the impact of jailbreak users downloading free, pirated apps rather than purchasing the same apps from Apple’s App Store.\textsuperscript{45} Also, most apps, programs, and modifications available through Cydia are sold by the developers at costs that rival the cost of apps from the App Store.\textsuperscript{46} Apple claims that the second factor, nature of the copyrighted work, is significant because iOS is a highly complex and creative work.\textsuperscript{47} The third factor should also weigh against fair use because the jailbreak software uses most of the original work of iOS in order to operate, which would also lead to a factor weighing against fair use.\textsuperscript{48} The fourth factor does not strongly support Apple, given EFF’s reason discussed supra, but it is likely that the court would consider the effect of pirated apps on Apple’s App Store. It seems that Apple would have a fairly strong claim against a ruling of Fair Use, but this is meaningless so long as the Librarian of Congress allows the use of jailbreaking.

\textit{Role of the Librarian of Congress}

Section 1201(a)(1)(C) of the DMCA states that the Librarian of Congress has the power to determine whether a party using a copyright in a way which circumvents technological security measures put in place by the copyright owner is liable under § 1201.\textsuperscript{49} Congress decided to give this power of an exemption to an

\textsuperscript{41} See Cheng, supra note 39.


\textsuperscript{44} See EVASI0N, supra note 33.

\textsuperscript{45} See Wolk, supra note 28, at 815.


\textsuperscript{47} See Wolk, supra note 28, at 816.

\textsuperscript{48} Id.

individual to balance “the continued growth and development of electronic commerce; and protecting intellectual property rights.” To determine whether an exemption should be granted, the Librarian of Congress considers: (1) the availability for use of copyrighted works; (2) the availability for use of works for nonprofit archival, preservation and educational purposes; (3) the impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research; and (4) the effect of circumvention of technological measures on the market for or value of copyrighted works.

In 2010, the Librarian of Congress ruled that an exemption should be granted to jailbreaking. When weighing the first factor, it was determined that Apple exercised protections on some programs that were independently created, and therefore, they were not copyrighted by Apple; also, when weighing this factor, the Librarian considered that granting an exemption to jailbreakers would make apps more accessible on a whole, which favors the growth of technological advancement and jailbreakers. Although it was decided that the second and third statutory factors were neutral, the fourth factor weighed in favor of jailbreaking as well. The proffered reason was that allowing jailbreakers to enhance the capabilities of the phone increases the value of the phone to the consumer by allowing the consumer to use the phone to its full potential, which Apple clearly restricted. However, it was emphasized that the exemption did not apply to any applications gained unlawfully, such as obtaining an app for free from Hackulous instead of purchasing it from Apple’s App Store.

POLICY ARGUMENTS

Apple’s Interests vs. the Consumer’s Interest

Apple’s interest lies mainly in its App Store. Apple’s App Store has experienced great success since it debuted in 2008; Apple’s most recent figure

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50 Lily Wrynn, Comment, Exploring the Jailbreaking Exemption to Examine the Librarian of Congress’s Power Under the Digital Millennium Copyright Act, 30 TEMP. J. SCI. TECH. & ENVTL. L. 145, 149 (2011).
52 See Wrynn, supra note 50, at 151.
53 Id. at 164.
54 Id.
55 Id.
56 Id.
states that 40 billion apps have been downloaded from the App Store.\textsuperscript{57} The average app costs $1.58,\textsuperscript{58} and Apple retains thirty percent of this amount.\textsuperscript{59} Apple has paid a total of $7 billion to app developers, and has made a profit of $3 billion itself by selling these apps.\textsuperscript{60} As you can see, Apple has a great interest in discouraging the use of jailbreaking. Although the Librarian of Congress deemed it illegal to download a pirated app,\textsuperscript{61} there is no method that can prevent users from downloading pirated apps once their phone has been jailbroken.

Although the Librarian of Congress may disagree, I believe that Apple has a slightly stronger argument against the fourth factor of § 1201(a)(1)(C), which the Librarian ultimately ruled in favor of jailbreakers.\textsuperscript{62} Given the profits that Apple and the developers have made from the App Store, it is clear that allowing users to download apps for free on a jailbroken phone could substantially cut into Apple’s profits. However, this argument is weakened by the fact that jailbreaking is only used by a small percentage of iPhone users. In 2012 alone, Apple sold 125 million iPhones.\textsuperscript{63} In comparison, Cydia was downloaded by 5.15 million iPhones in the first four days of its release,\textsuperscript{64} which is a very low percentage of iPhones in use. Also, because the App Store is the lone marketplace for the tens of millions of iPhone users, Apple can combat the lost profits by controlling the prices of the apps available on the App Store. Allowing users to jailbreak iPhones may make the device more valuable to that user as clarified by the Librarian of Congress’s


\textsuperscript{60} Id.

\textsuperscript{61} See Wrynn, supra note 50, at 164.


\textsuperscript{64} Christian Zibreg, Four days later, evasi0n jailbreak has set free seven million iDevices, iDOWNLOADBLOG (Feb. 8, 2013), http://www.idownloadblog.com/2013/02/08/evasi0n-7m-downloads-4-days/.

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decision, but the real effects and losses from piracy should weaken the fourth factor of the Librarian’s decision in favor of jailbreakers.

The jailbreakers’ main interest is that individual control and use over the iPhone should be allowed because the consumer owns the iPhone device, and should be able to use the device in any way. Although Apple holds the copyright in its iOS, the user should be able to manipulate and change the iOS to meet the individual’s needs. The iPhone owner will contend that the iPhone is the owner’s property, which includes both the hardware (iPhone) and the software (iOS), and that an owner can do what he wishes to do with his property.

Although the user has an interest in the property, the ruling of the Librarian of Congress relied on the balance between copyright protection and the advancement of science. Given the facts of the situation, it seems as if the Librarian of Congress could have ruled in favor of either party, but ultimately chose to favor the advancement of science rather than the rights of the copyright holder. An element that probably weighed on the Librarian’s decision likely revolved around the use of the jailbroken device by the user. Aside from piracy, the utility of jailbreaking heavily weighs in favor of the advancement of science. Many people choose to jailbreak to change the aesthetics of the iPhone as well as the functionality. Many tweaks change the appearance of iOS (such as the keyboard, fonts, backgrounds, wallpapers, etc.). Even some security measures can be put in place, such as facial recognition software and enhanced password input. Other uses include improved functionality of Siri, logging data usage, and recording the iPhone screen to name a few of the hundreds of changes that can be made to the operating system. The capabilities of a jailbroken device are much more significant than simple app piracy, and the technological advances offered by jailbreakers outweigh Apple’s interest against potential app piracy.

65 A direct citation for this cannot be found as there is not a reliable statistic available regarding the percentage of users who pirate apps, but it is assumed that a significant portion of users who jailbreak also download pirated apps, given the ease of piracy.

66 See generally Wolk, supra note 28.

67 See Wrynn, supra note 50, at 149.

68 Id.

69 Adrian Kingley-Hughes, 100 reasons to jailbreak an iPhone, ZDNET (Apr. 4, 2012), http://www.zdnet.com/blog/hardware/100-reasons-to-jailbreak-an-iphone/19488.

70 Id.

71 Id.

72 Id.
Service Carrier Interest vs. the Consumer’s Interest

Apple’s other interest rests in its relationships with cell service carriers. Two main capabilities that Apple left off of the iPhone are tethering and user unlocking.\(^3\) Tethering a phone to a computer allows the computer to use the iPhone’s internet capabilities as if the signal was WiFi.\(^4\) To accommodate this, service providers had to provide the iPhone with massive amounts of data. When creating the pricing scheme for iPhone plans, service providers likely did not account for the amount of data that would be used through tethering;\(^5\) the normal internet use of an iPhone largely revolves around email, light internet browsing, and some streaming video use.\(^6\) When a user tethers his phone, however, the amount of data use skyrockets, as the internet usage on a computer involves more extensive browser use, higher volumes of streaming video and music, and more bandwidth is required to load these files on a computer in general.\(^7\) Service providers responded to this issue by discontinuing unlimited data plans and slowing down the data speed for the high-volume users.\(^8\)

Another problem that cell phone service providers have run into is the use of jailbroken phones to be used with another carrier.\(^9\) The practice is discouraged by carriers because the phone is often provided to the consumer at a heavily discounted price in exchange for use of that specific service provider for voice and data needs.\(^10\) However, jailbreaking allows the user to unlock the phone, which would make it available to any service provider.\(^11\) In response, Apple has released

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\(^3\) See Love, supra note 16.

\(^4\) Id.

\(^5\) Tethering is not allowed by many service providers, but was made available through jailbreaks. Id.


\(^9\) See Love, supra note 16.


unlocked cell phones at a significantly higher price than those offered by service providers, but this likely does not discourage jailbreakers from unlocking the cell phone without Apple’s permission. A discussion of the Librarian of Congress’s ruling on unlocking cell phones will be provided infra.

Much like the consumer’s argument above, the general thought is that the owner of the cell phone and purchaser of the plan should be able to use the phone and data plan in any way he chooses. The argument seems logical; if a user is paying for unlimited data from a service provider, the user should be able to transform the data into a form in which other devices can utilize it. Likewise, an argument in support of unlocking is that the consumer purchases the iPhone, and should be able to freely choose whichever carrier he sees fit. These factors likely played a role in the Librarian’s decision to promote science over Apple’s protection of copyright.

RECENT DECISIONS BY THE LIBRARIAN OF CONGRESS

Although the Librarian of Congress ruled that jailbreaking was exempted from copyright protection in October 2012, the Librarian also made a ruling that cell phone unlocking is not exempted from protection. It should be noted that in general, cell phone unlocking is legal; cell phone service providers can permit a user to unlock the phone, but they usually charge a termination of service fee. The Librarian’s decision deemed it illegal for users to unlock the phone without the permission of the service provider, which is attainable through jailbreaking. This ruling could lead to conflict in the future and could seriously impact the exemption of jailbreaking. If the Librarian considers the potential uses by jailbreakers in making the decision, the decision may start to weigh in Apple’s favor. When considering potential app piracy as an issue on top of the illegal practice of unlocking iPhones by jailbreakers without the permission of service providers, the policy reasons in support of jailbreaking weaken; the technological advances made by jailbreaking are beginning to be overshadowed by the illegal activities that are widely available to iPhone users.

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82 Chloe Albanesius, *Apple Now Selling Unlocked iPhone 5*, PC Mag. (Nov. 30, 2012), http://www.pcmag.com/article2/0,2817,2412695,00.asp.


84 *See* Byford, *supra* note 7.

85 *Id.*

86 *Id.*
However, the recent ruling against the use of unlocking has been heavily contested by citizens, and the White House recently submitted a statement regarding its stance on unlocking. According to the statement, the White House supports the notion that a cell phone owner should be able to purchase a phone and use the device to “reap the benefits and features they expect when purchasing their devices.” Shortly after the statement was released, lawmakers responded by submitting bills to Congress, asking Congress to legalize cell phone unlocking. Although it is unclear when the bills will reach the floor of Congress, it seems certain that the widespread support from U.S. citizens, as well as the strong backing by the White House and instant response from several lawmakers indicates that the Librarian of Congress’ ruling will be overturned.

The result of the decision regarding cell phone unlocking will be huge for the jailbreaking community; if the Librarian of Congress’s ruling stands, it is an indication that the jailbreaking community may be in danger during the next ruling, but if it is overturned, a major issue facing the jailbreaking exemption will be nullified. The Librarian’s decision regarding unlocking should strike some fear into jailbreakers. Ruling that unlocking is illegal when it was previously allowed shows that the Librarian may be shifting the balance between copyright protection and the advancement of science towards Apple and stricter copyright protection. The ruling also shows how simple it is for one person to outlaw something that had previously been allowed. Even if unlocking is deemed legal by Congress, the Librarian could choose not to exempt jailbreaking during its next hearing, and jailbreaking would have to go through the same process as unlocking is going through now, but may not receive as strong of a response as unlocking has. Although jailbreaking is supported by law and policy, its future as a legal use of Apple’s software is unknown.

CONCLUSION

Despite the generally unpredictable nature of the Librarian’s decision, jailbreaking should remain safe in the future. If unlocking gains enough support from Congress to overturn the Librarian’s ruling, it is very likely that jailbreaking will remain legal. Apple would have a strong argument against the illegal uses that

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87 See Lowensohn, supra note 83.
88 Id.
90 114,322 signatures were gathered for the petition to the White House. Id.
jailbreaking could potentially introduce to consumers if unlocking remains illegal, but rulings in the past indicate that the presence of app piracy as the only illegal use available to jailbreakers is not enough for a ruling against fair use. Until the next hearing by the Librarian of Congress, both parties will be holding their breath as they await Congress’ decision regarding unlocking, as it is likely that this issue will ultimately decide the legality of jailbreaking.