IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION

WAPP TECH LIMITED PARTNERSHIP and WAPP TECH CORP.,	§	
Plaintiffs,	§	
v.	§	**Civil Action No. 4:25-cv-00230**
APPLE INC., CAPITAL ONE, N.A., CAPITAL ONE SERVICES, LLC, FROST BANK, and CULLEN/FROST BANKERS, INC.	§	**JURY TRIAL DEMANDED**
Defendants.	§	

PLAINTIFFS' ORIGINAL COMPLAINT

Plaintiffs WAPP TECH LIMITED PARTNERSHIP and WAPP TECH CORP. ("WAPP" or "Plaintiffs") hereby submit this Complaint for patent infringement against Defendants Apple Inc. ("Apple"); Capital One, N.A. and Capital One Services, LLC (collectively "Capital One"); and Frost Bank and Cullen/Frost Bankers, Inc. (collectively, "Frost").

THE PARTIES

1. Plaintiff WAPP TECH LIMITED PARTNERSHIP is a Delaware limited partnership organized and existing under the laws of the State of Delaware, and its registered agent for service of process in Delaware is Corporations & Companies, Inc. (CorpCo), 910 Foulk Road, Suite 201 Wilmington, Delaware 19803.
2. Plaintiff WAPP TECH CORP. is a body corporate organized and existing under the laws of the Province of Alberta, Canada, and its registered agent for service of process in Delaware is

Corporations & Companies, Inc. (CorpCo), 910 Foulk Road, Suite 201 Wilmington, Delaware 19803.

3. On information and belief, Defendant Apple Inc. ("Apple") is a company organized and existing under the laws of the State of California with one of its principal places of business at 6900 W Parmer Ln, Austin, TX 78729.

4. On information and belief, Defendant Capital One, N.A. is a federally chartered national banking association organized and existing under the laws of the United States having a principal place of business at 1680 Capital One Drive, McLean, Virginia 22102.[1]

5. On information and belief, Defendant Capital One Services, LLC is a limited liability company organized and existing under the laws of the state of Delaware, with a principal place of business at 1680 Capital One Drive, McLean Virginia 22102.

6. On information and belief, Frost Bank is a Texas State Financial Institution organized and existing under the laws of the State of Texas, with a principal place of business located at 111 West Houston Street, San Antonio, Texas 78205. On information and belief, Frost Bank is a subsidiary of Cullen/Frost Bankers, Inc.

7. On information and belief, Cullen/Frost Bankers, Inc. is a corporation organized and existing under the laws of the state of Delaware, with a principal place of business at 111 West Houston Street, San Antonio, Texas 78205.

JURISDICTION AND VENUE

8. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 101 *et seq*. Venue is proper in this federal district pursuant to 28 U.S.C. §1400(b).

9. The Court has personal jurisdiction over Defendants, in part, because Defendants have

[1] https://banks.data.fdic.gov/bankfind-suite/bankfind/details/4297 (accessed Feb. 28, 2025).

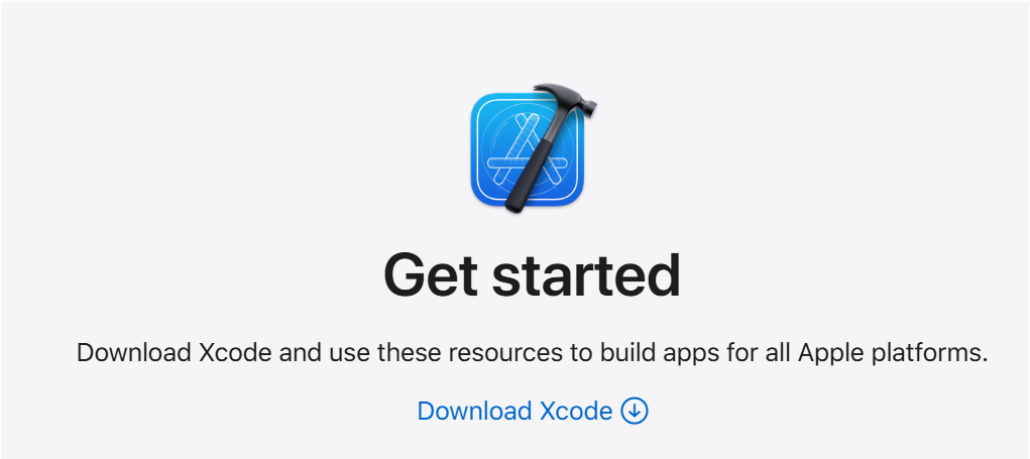
minimum contacts within the State of Texas; Defendants have purposefully availed themselves of the privileges of conducting business in the State of Texas; Defendants regularly conduct business within the State of Texas; and Plaintiffs' causes of action arise directly from Defendants' business contacts and other activities in the State of Texas, including on information and belief, by virtue of Defendants' infringement in the State of Texas. Further, this Court has general jurisdiction over the Defendants, in part, due to their continuous and systematic contacts with the State of Texas. Further, on information and belief, the Defendants are subject to the Court's jurisdiction, in part, because the Defendants have committed patent infringement in the State of Texas. The Defendants have regular and established places of business in this district. The Defendants are subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to their substantial and pervasive business in this State and judicial district, including: (i) at least part of their infringing activities alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from goods sold and services provided to Texas residents.

10. On information and belief, Defendants have regular and established places of business throughout the State of Texas, including within the Eastern District of Texas, and commit acts of infringement within this District.

11. Venue as to Apple is proper in this judicial district under 28 U.S.C. § 1400(b) at least because Apple has committed acts of infringement in this judicial district and has regular and established places of business in this judicial district. Apple makes, uses, sells, offers to sell, and/or imports products and/or services accused of infringement in this case into and/or within this judicial district, and Apple indirectly infringes in this judicial district by inducing

infringement by others in this district. Apple maintains a permanent and/or continuing presence within this judicial district at its regular and established places of business. Apple's commission of acts of infringement, and the presence of Apple locations in the Eastern District of Texas, establish venue over it under 28 U.S.C. § 1400(b).

12. As an example, Apple has committed acts of infringement by selling and/or offering for sale accused products in this district, including Apple's Xcode software. Apple offers for sale and sells Xcode to its customers in this district, including Apple's co-Defendants in this lawsuit. For example, Apple sells and offers to sell Xcode in this district through its website, where it offers Xcode for download.[2]



Apple provides a software license whereby users may download and use Xcode only if they agree to the terms of Apple's "Xcode and Apple SDKs Agreement," which states: "IF YOU DO NOT OR CANNOT AGREE TO THE TERMS OF THIS AGREEMENT, YOU CANNOT USE THIS APPLE SOFTWARE OR THE APPLE SERVICES."[3] Apple customers in this judicial district have downloaded Xcode and agreed to the terms of this contract, thereby entering into a computer software license with Apple. This transaction

[2] https://developer.apple.com/xcode/.
[3] https://www.apple.com/legal/sla/docs/xcode.pdf.

constitutes an infringing sale. *See Minton v. NASD, Inc.*, 336 F.3d 1373, 1378 (Fed. Cir. 2003) ("a commercial transaction arranged as a 'license' or a 'lease' of a product or a device … may be tantamount to a sale (*e.g.*, a standard computer software license)"). Apple's website constitutes an offer to engage in this infringing transaction in this judicial district, and therefore constitutes an infringing offer for sale in this district.

13. As another example, Apple also sells and offers to sell Xcode in this judicial district for $99 per year as part of the Apple Developer Program.[4] "Membership includes access to beta OS releases, advanced app capabilities, and tools needed to develop, test, and distribute apps and Safari Extensions." By purchasing a subscription, Apple customers obtain an enhanced version of Xcode with "[f]ull access to a comprehensive set of development tools" and "[a]dvanced app capabilities and services." Members also receive access to "the latest beta versions of operating systems and SDKs."[5] Becoming a member of the Apple Developer Program and paying the $99 fee removes "limitations" that Apple places on features (including accused features) of XCode. Apple customers in this judicial district have signed up for the Apple Developer Program, paid the $99 fee, and downloaded an enhanced version of XCode. This transaction constitutes an infringing sale. Apple's website constitutes an offer to engage in this infringing transaction in this judicial district, and therefore constitutes an infringing offer for sale in this district.

14. As alleged in this Complaint, Apple also indirectly infringes by inducing its customers' infringement in this district. For example, Apple induces the infringing uses of Xcode by Apple's co-Defendants in this lawsuit that take place in this district. Apple's acts of indirect infringement constitute acts of infringement in this judicial district. *Seven Networks, LLC v.*

[4] https://developer.apple.com/support/compare-memberships/.
[5] https://developer.apple.com/programs/whats-included/.

Google LLC, 315 F. Supp. 3d 933, 943 (E.D. Tex. 2018) ("the acts of infringement required to support venue in a patent infringement action need not be acts of direct infringement, and venue does lie if the defendant only induced the infringement or contributed to the infringement in the forum").

15. As yet another example, Apple has committed acts of infringement in this judicial district by using, selling, offering for sale, and/or importing mobile devices (such as iPhones) that come with mobile applications installed that infringe one or more asserted claims. For example, each iPhone comes with the Photos app pre-installed. An iPhone with the Photos app installed infringes at least '192 Patent Claim 60 because it constitutes a "system comprising an application configured to enable a user to modify a photo on a mobile device"[6] and because the Photos app was developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application." Apple's acts of infringement in this judicial district include without limitation Apple's selling and/or offering for sale of iPhones with the Photos app installed via Apple's website[7] and/or via Best Buy and/or Target stores (or other stores) in this judicial district, as described in greater detail below.

16. Apple has multiple regular and established places of business within this judicial district. These Apple places of business are physical locations owned, leased, possessed, and/or controlled by Apple, where Apple employees and/or agents regularly conduct Apple's business.

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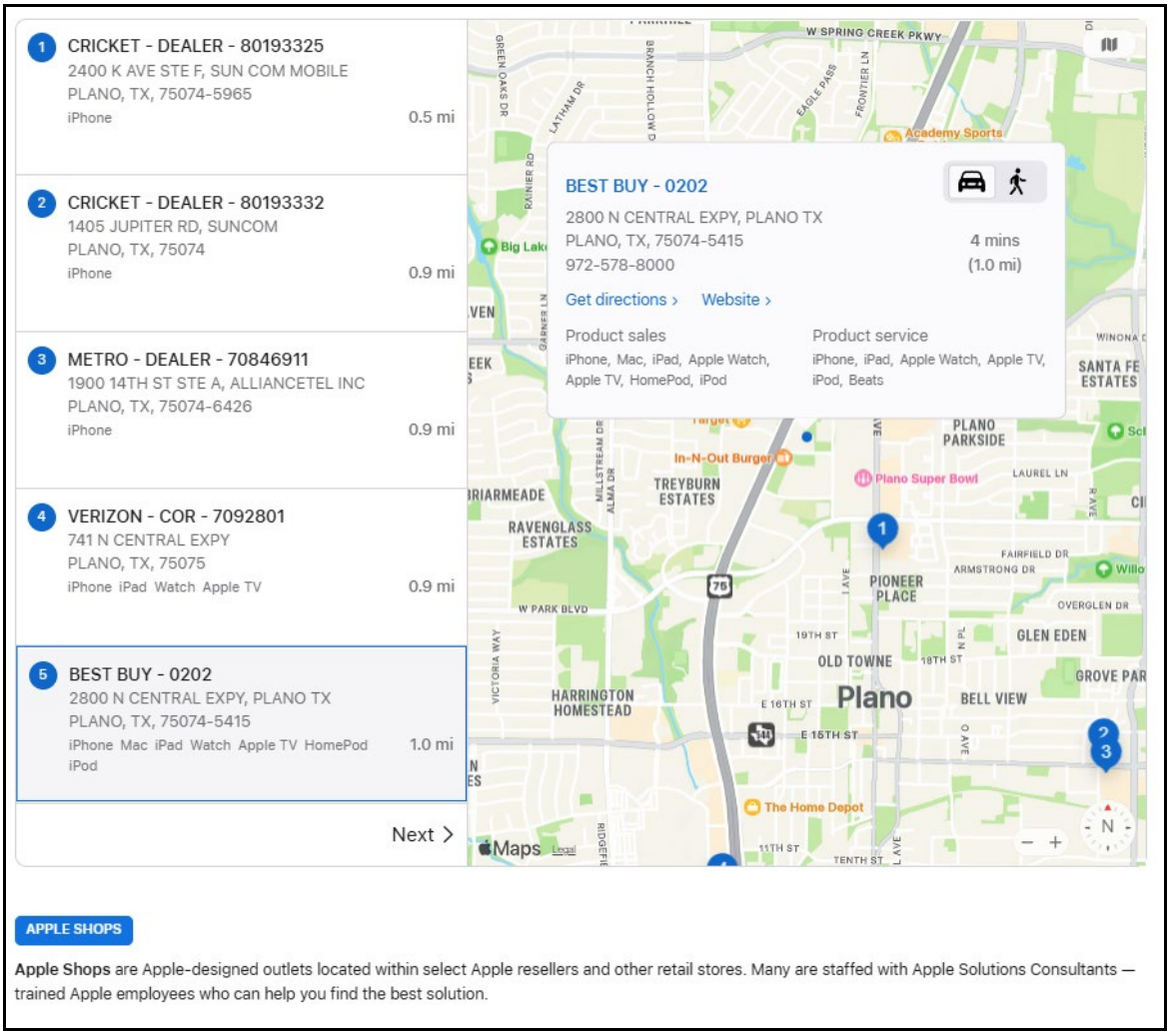
[6] *See, e.g.*, https://support.apple.com/guide/iphone/edit-photos-and-videos-iphb08064d57/18.0/ios/18.0 ("After you take a photo or video, use the tools in the Photos app to edit it on your iPhone.")

[7] https://www.apple.com/shop/buy-iphone

17. Apple's regular and established places of business within this judicial district include Apple Shops at Best Buy stores within this district. According to Apple's website, "Apple Shops are Apple-designed outlets located within select Apple resellers and other retail stores. Many are staffed with Apple Solutions Consultants — trained Apple employees who can help you find the best solution."[8]

18. For example, Apple advertises on its website that the Best Buy located at 2800 North Central Expressway, Plano, Texas 75074-5415 (Collin County), contains an Apple Shop:



[8] https://locate.apple.com/sales?pt=3&lat=33.021827697753906&lon=-96.69925689697266&address=Plano%2C+TX

Best Buy's website confirms that this location includes an Apple Shop.[9] Best Buy's website also states "**We are an Apple Authorized Service Provider.** Our Agents are Apple-trained, so you can trust us with all your Apple devices, no matter where you bought them. … We only use genuine Apple parts to deliver Apple-certified repairs, and only Apple-certified repairs are backed by Apple."[10]

19. Apple has at least ten employees who staff at least nine Best Buy Apple Shops located in the Eastern District of Texas. On July 15, 2024, Apple publicly filed the declaration of Apple employee Stephanie Calhoun Jemmings that identified the following Best Buy Apple Shops in the Eastern District of Texas and their staffing with Apple employees, as shown in the table below:

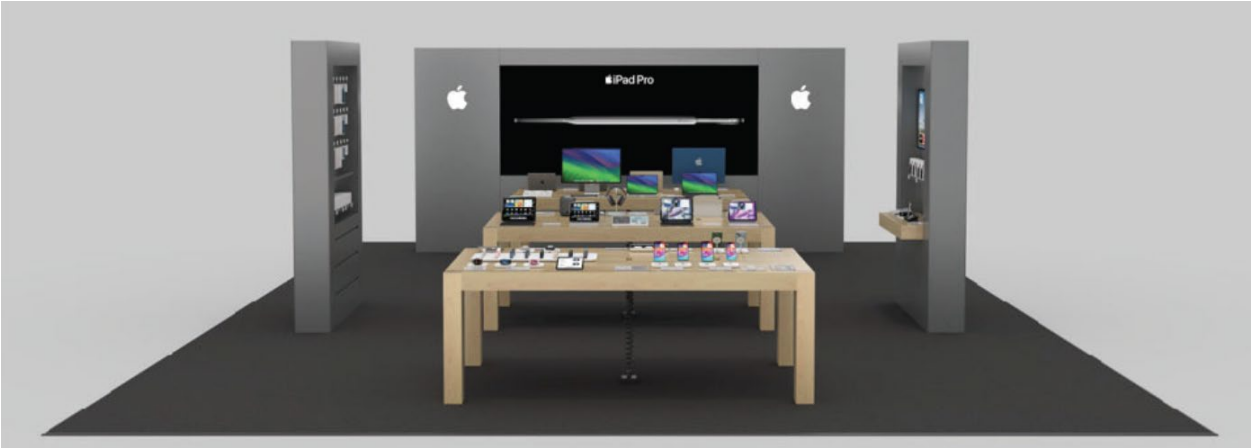
Store Name	Store Street Address	Apple Employees
Best Buy - 0180	3333 Preston Rd 200, Frisco	1 ASC
Best Buy - 0202	2800 N Central Expy, Plano	1 Lead ASC
Best Buy - 0238	5885 Eastex Fwy, Beaumont	1 Lead ASC
Best Buy - 0246	5514 S Broadway, Tyler	1 ASC
Best Buy - 0258	2601 S Stemmons Fwy, Lewisville	1 Lead ASC + 1 Specialist
Best Buy - 0594	422 W Loop 281, Ste 100, Longview	1 Specialist
Best Buy - 0827	1800 S Loop 228, Ste 120, Bldg 1, Denton	1 Lead ASC + 1 Specialist
Best Buy - 1773	5299 Eldorado Pkwy, Frisco	1 Lead ASC + 1 Specialist
Best Buy - 1780	190 E Stacy Rd, Allen	1 Lead ASC

Slyde Analytics LLC v. Apple Inc., No. 2:24-cv-00331-RWS-RSP, Dkt. 21-7 at ¶5 (E.D. Tex.

[9] https://stores.bestbuy.com/tx/plano/2800-n-central-expy-202.html
[10] https://www.bestbuy.com/site/services/apple-service-repair/pcmcat1554741516170.c

2024). Ms. Jemmings stated that a "Lead" ASC is responsible for covering multiple locations. For example, one Lead ASC covers the Best Buy locations in Lewisville, Denton, and Frisco (Eldorado Parkway), and another Lead ASC covers the Best Buy locations in Plano and Allen. According to Ms. Jemmings, Apple has four Lead ASCs, two ASCs, and four Specialists who work within Best Buy locations in the Eastern District of Texas. *Id.* Ms. Jemmings also stated that these Apple employees engage with Best Buy's employees and customers to educate them about Apple's products, advocate for Apple's brand, and help customers choose an Apple product that best suits their needs. *Id.* at ¶4.

20. The Apple Shops in this district are owned, leased, possessed, and/or controlled by Apple, and Apple employees and/or agents regularly conduct Apple's business at the Apple Shops. Apple shops are "Apple-designed" outlets that are dedicated to selling Apple products using Apple branded furniture, fixtures, and display cases prominently featuring Apple logos. Apple designs and provides to Best Buy the Apple-branded fixtures, such as tables and display cases, that are used to display Apple's products in Apple Shops, including the fixtures shown in the figure below:



Slyde, Dkt. 21-8 at ¶¶4-6. Apple pays the cost of installing and maintaining the fixtures within each Apple Shop. *Id.* at ¶8. Apple controls where the Apple Shop may be located

within each Best Buy store and reviews and approves the location of each Apple Shop. *Id.* at ¶9. Best Buy describes each Apple Shop as a "store-within-a-store for all things Apple."[11] On information and belief, Apple has contractual agreements with Best Buy that give Apple additional rights to possess and control each Apple Shop in this district in addition to those examples listed above.

21. As discussed above, the Apple Shops in this district are staffed by at least ten Apple employees who regularly conduct Apple's business at those Apple Shops, including marketing, selling, and supporting Apple products. On information and belief, additional Apple employees and/or agents (such as Best Buy employees acting as agents of Apple pursuant to the contracts between Best Buy and Apple) regularly conduct Apple's business at each Apple Shop in this district.

22. Apple also maintains additional regular and established places of business in this judicial district, for example, at "Apple at Target shop-in-shops" within this district.[12] One such place of business is the "Apple Experience" shop-within-a-shop located within a Target store at 3201 Preston Rd Frisco, TX 75034-9446.[13] Plaintiff is informed and believes that Apple Experience shops within Target stores in this judicial district are owned, leased, possessed, and/or controlled by Apple, and Apple employees and/or agents regularly conduct Apple's business at these locations.

23. Venue as to Capital One is proper in this judicial district under 28 U.S.C. § 1400(b) at least because Capital One has committed acts of infringement in this judicial district and has

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[11] *See, e.g.*, https://stores.bestbuy.com/tx/plano/2800-n-central-expy-202.html

[12] https://corporate.target.com/press/release/2022/10/target-and-apple-deepen-collaboration-with-more-sh#:~:text=*%20Target%20has%20more%20than%20tripled%20the,to%20five%20months%20free%2C%20beginning%20in%20November

[13] https://www.target.com/sl/frisco/1763

regular and established places of business in this judicial district.

24. For example, Defendant Capital One Services, LLC owns, leases, controls, and/or possesses a place of business at 8000 Dominion Pkwy, Plano, Texas, United States, and advertises job openings for employees with mobile application development experience including Xcode and Android experience.[14] In addition, Defendant Capital One Services, LLC distributes its mobile applications through Apple's App Store and Google's Google Play Store.

25. For example, Defendant Capital One, N.A., also owns, leases, controls, and/or possesses a place of business at 8000 Dominion Pkwy, Plano, Texas, United States and has multiple other locations throughout the State of Texas, and within the Eastern District of Texas, including banking facilities located at:

- 1221 E. Spring Creek Pkwy, Plano, TX, 75074
- 101 Stacy Rd, Fairview, TX 75069
- 8989 Preston Rd, Frisco, TX 75034

26. As described in greater detail below, Defendant Capital One Services, LLC has committed acts of infringement in this judicial district by using Apple's Xcode and/or Google's Android Studio (and/or other software development tools) to author mobile applications. Capital One Services, LLC employees and/or agents within this judicial district have committed acts of infringement by using one or more claims and/or claim elements of the Patents-in-Suit.

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[14] *See, e.g.,* https://www.capitalonecareers.com/job/mclean/director-software-engineering-corporate-tech-esm/1732/70047388544 (accessed Feb. 28, 2025); https://www.capitalonecareers.com/job/plano/director-technical-program-management/1732/77422830016 (accessed Feb. 28, 2025); https://www.capitalonecareers.com/job/plano/manager-front-end-designer-design-systems/1732/76660899376 (accessed Feb. 28, 2025); *see also* https://www.linkedin.com/in/christian-glazewski-841a7a200/ (accessed Feb. 28, 2025); https://www.linkedin.com/in/michael-d-mckenna/ (accessed Feb. 28, 2025); https://www.linkedin.com/in/markheussner/ (accessed Feb. 28, 2025); https://www.linkedin.com/in/ogomeznovau/ (accessed Feb. 28, 2025).

27. As described in greater detail below, Defendant Capital One Services, LLC has induced one or more third parties in this judicial district to author mobile applications on its behalf using Apple's Xcode and/or Google's Android Studio (and/or other software development tools) in an infringing manner.

28. As described in greater detail below, Defendant Capital One Services, LLC has directly infringed at least '192 Patent Claim 60 by using, selling, offering for sale, and/or importing mobile applications in this judicial district, *e.g.*, by selling and offering for sale the "Capital One Mobile" application through Apple's App Store and Google's Google Play Store in this district. The "Capital One Mobile" application is a "system comprising an application configured to enable a user to modify a photo on a mobile device"[15] and it was developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application."

29. As described in greater detail below, Defendant Capital One, N.A. has committed acts of infringement in this judicial district by using Apple's Xcode and/or Google's Android Studio (and/or other software development tools) to author mobile applications. Defendant Capital One, N.A. employees and/or agents within this judicial district have committed acts of infringement by using one or more claims and/or claim elements of the Patents-in-Suit.

30. As described in greater detail below, Defendant Capital One, N.A. has induced one or more third parties in this judicial district to author mobile applications on its behalf using Apple's

[15] *See, e.g.*, https://www.capitalone.com/learn-grow/money-management/what-is-mobile-check-deposit/ ("Mobile check deposit works by using a service called remote deposit capture. Think of it like scanning a document onto your computer. Essentially, remote deposit capture lets you take a digital image of your check. Your financial institution will then collect the images and process your deposit.")

Xcode and/or Google's Android Studio (and/or other software development tools) in an infringing manner.

31. As described in greater detail below, Defendant Capital One, N.A. has directly infringed at least '192 Patent Claim 60 by using, selling, offering for sale, and/or importing mobile applications in this judicial district, *e.g.*, by selling and offering for sale the "Capital One Mobile" application through Apple's App Store and Google's Google Play Store in this district. The "Capital One Mobile" application is a "system comprising an application configured to enable a user to modify a photo on a mobile device"[16] and it was developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application."

32. Venue as to Frost is proper in this judicial district under 28 U.S.C. § 1400(b) at least because Frost has committed acts of infringement in this judicial district and has regular and established places of business in this judicial district.

33. Defendant Frost Bank owns, leases, controls, and/or possesses multiple locations throughout the State of Texas, and within the Eastern District of Texas, including Financial Centers located at:

- 600 E 15th St, Plano, TX 75074
- 1212 McDermott Suite 400 Allen, Texas 75013
- 5851 Long Prairie Rd. Flower Mound, Texas 75028

[16] *See, e.g.*, https://www.capitalone.com/learn-grow/money-management/what-is-mobile-check-deposit/ ("Mobile check deposit works by using a service called remote deposit capture. Think of it like scanning a document onto your computer. Essentially, remote deposit capture lets you take a digital image of your check. Your financial institution will then collect the images and process your deposit.")

- 3100 Independence Pkwy., Ste. 100 Plano, TX 75075
- 5021 W. Park Blvd. Plano, TX 75093

34. Defendant Cullen/Frost Bankers, Inc. owns, leases, controls, and/or possesses multiple locations throughout the State of Texas, including Financial Centers located in this district and referenced in the paragraph above.

35. As described in greater detail below, Defendant Frost Bank has committed acts of infringement in this judicial district by using Apple's Xcode and/or Google's Android Studio (and/or other software development tools) to author mobile applications. Frost Bank employees and/or agents within this judicial district have committed acts of infringement by using one or more claims and/or claim elements of the Patents-in-Suit.

36. As described in greater detail below, Defendant Frost Bank has induced one or more third parties in this judicial district to author mobile applications on its behalf using Apple's Xcode and/or Google's Android Studio (and/or other software development tools) in an infringing manner.

37. As described in greater detail below, Defendant Frost Bank has directly infringed at least '192 Patent Claim 60 by using, selling, offering for sale, and/or importing mobile applications in this judicial district, *e.g.*, by selling and offering for sale the "Frost" application through Apple's App Store and Google's Google Play Store in this district. The "Frost" application is a "system comprising an application configured to enable a user to modify a photo on a mobile device"[17] and it was developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the

[17] *See, e.g.*, https://www.frostbank.com/financial-technology/frost-bank-app ("Deposit checks with your phone. On iOS and Android. Snap a picture to deposit your checks…").

application."

38. As described in greater detail below, Defendant Cullen/Frost Bankers, Inc. has committed acts of infringement in this judicial district by using Apple's Xcode and/or Google's Android Studio (and/or other software development tools) to author mobile applications. Defendant Cullen/Frost Bankers, Inc. employees and/or agents within this judicial district have committed acts of infringement by using one or more claims and/or claim elements of the Patents-in-Suit.

39. As described in greater detail below, Defendant Cullen/Frost Bankers, Inc. has induced one or more third parties in this judicial district to author mobile applications on its behalf using Apple's Xcode and/or Google's Android Studio (and/or other software development tools) in an infringing manner.

40. As described in greater detail below, Defendant Cullen/Frost Bankers, Inc. has directly infringed at least '192 Patent Claim 60 by using, selling, offering for sale, and/or importing mobile applications in this judicial district, *e.g.*, by selling and offering for sale the "Frost" application through Apple's App Store and Google's Google Play Store in this district. The "Frost" application is a "system comprising an application configured to enable a user to modify a photo on a mobile device"[18] and it was developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application."

JOINDER OF DEFENDANTS

41. Joinder of Apple Inc.; Capital One, N.A.; Capital One Services, LLC; Frost Bank; and

[18] *See, e.g.*, https://www.frostbank.com/financial-technology/frost-bank-app ("Deposit checks with your phone. On iOS and Android. Snap a picture to deposit your checks…").

Cullen/Frost Bankers, Inc. as co-Defendants in this lawsuit is proper under 35 U.S.C. §299.

42. Wapp asserts that (a) it is entitled to relief against Defendants jointly, severally, and/or in the alternative with respect to or arising out of the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, importing into the United States, offering for sale, or selling of the same accused product or process, and (b) questions of fact common to all Defendants will arise in the action.

43. For example, Plaintiffs allege that Apple directly infringes by making, using, selling, offering for sale, and/or importing its accused Xcode software and indirectly infringes by inducing each of its co-Defendants to use Apple's accused Xcode software in an infringing manner. Correspondingly, Plaintiffs allege that each of Apple's co-Defendants directly infringe by using Apple's accused Xcode software in an infringing manner.[19] These infringement allegations against each Defendant relate to the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, importing into the United States, offering for sale, or selling of the same accused product or process. Plaintiffs assert that they are entitled to relief against Defendants jointly, severally, and/or in the alternative with respect to or arising out of these acts of infringement. Questions of fact common to all Defendants will arise with respect to these acts of infringement. For example, many of the same questions of fact about the relevant features and functionality of Xcode, and much of the same evidence (including, for example, the same documents, source code, and testimony about Xcode), will be common to all Defendants in this lawsuit.

[19] As set forth in more detail below, Plaintiffs' infringement claims against Apple's co-Defendants include but are not limited to their use of Xcode. Plaintiffs further allege, for example, that each of those co-Defendants infringe through their use of additional software authoring tools, including Google's Android Studio.

FACTUAL ALLEGATIONS

Development of the Patented Inventions

44. The inspiration for the patented innovations described herein originates from application development work by the named inventor for live sporting events, including the 2006 FIFA World Cup. Through his development work associated with these international sporting events, the named inventor of the patents-in-suit developed and created a first-of-its-kind application performance engineering platform. He realized that developing applications to support widely viewed global events, such as the World Cup, presented unique challenges for application developers—these applications would be used by millions of users on a wide variety of devices having different attributes, and connecting to a wide variety of different networks with significantly different performance characteristics. To address these challenges, the named inventor invented an application authoring environment especially suited for creating applications for mobile devices. The invention enables developers to create the applications and ensure they will function correctly on a variety of mobile devices with varying device and network performance characteristics by emulating and monitoring specific characteristics of the devices and the networks to which they could connect. The named inventor realized that such flexibility would be necessary to create mobile applications that would work satisfactorily in the plethora of scenarios to which real users would subject them.

45. The named inventor filed his initial provisional application (No. 60/689,101) on June 10, 2005. He subsequently filed non-provisional patent applications claiming multiple different aspects of his application authoring platform, including applications which issued as U.S. Patent Nos. 8,924,192 (filed on November 9, 2012), 9,298,864 (filed on November 19, 2013), 9,971,678 (filed on December 23, 2014), 10,353,811 (filed on May 14, 2018), and 10,691,579 (filed on March 28, 2016).

46. These patented innovations have become core to modern mobile application development and have been cited as prior art against later patent applications from industry leaders including Google, Intel, HPE, and Microsoft. For example, on October 31, 2012, WIPO rejected the claims submitted in an HPE patent application (Patent Application Serial No. PCT/US2012/024087) based on Plaintiffs' invention and awarded the inventor patents with the highest prior art designation.

Authoring Mobile Applications

47. Mobile applications are now typically created in an authoring environment (also called an integrated development environment or "IDE") tailored to meet challenges specific to mobile application development. The two most popular modern authoring environments are Apple's Xcode (used to author mobile applications for iOS devices such as iPhones and iPads) and Google's Android Studio (used to author mobile applications for smart phones and tablets running Google's Android operating system).

48. Authoring environments include the tools needed to create a mobile application and then verify that it will function correctly on a variety of mobile devices and under a variety of network conditions. For example, Xcode and Android Studio include (1) an editor window where the developer will write the code, (2) a compiler that will transform the code into an application that will run on a mobile device, (3) tools to execute the compiled application on a variety of mobile devices or emulators so the application's performance can be verified on the selected devices and under a variety of network conditions, and (4) tools to monitor performance of the application while it is running.

<u>Xcode</u>

49. Apple's Xcode includes the features noted above, including the editor window reproduced below:

https://developer.apple.com/documentation/xcode/creating-organizing-and-editing-source-files (accessed December 8, 2023).

50. Xcode also includes a compiler that will transform the code into an application that will run on a mobile device:

Overview

Reducing build times by even a few seconds can have a significant impact over the course of development. Xcode does everything possible to build your code as fast as possible. It parallelizes build tasks and takes advantage of all available resources to output a finished product. However, you can help Xcode by making sure you're not creating unnecessary work for the compiler.

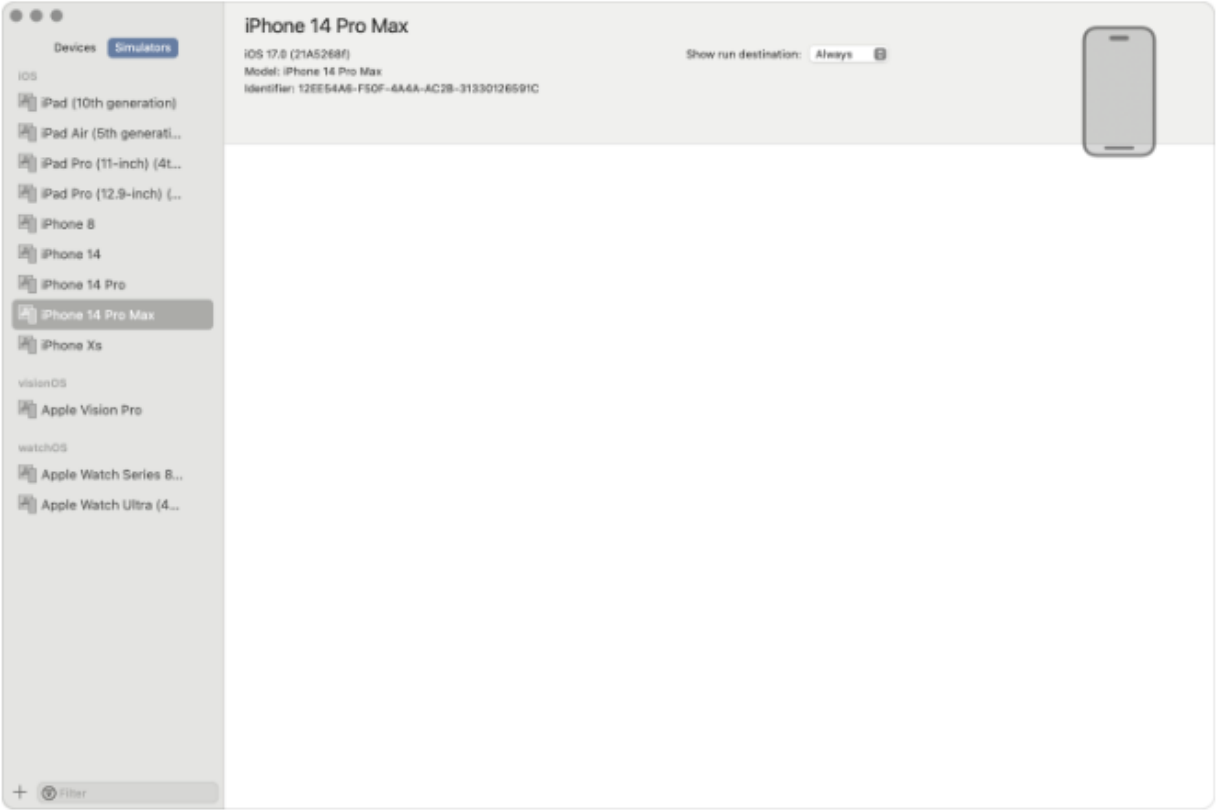
Over the years, Xcode's compiler has introduced optimizations to speed up compile times. Most of these optimizations are automatic, but some require you to make small changes to your code. In addition, projects that support both Objective-C code to Swift may require additional optimizations to ensure fast compile times.

https://developer.apple.com/documentation/xcode/improving-build-efficiency-with-good-coding-practices (accessed December 8, 2023).

51. Xcode further includes tools to execute the compiled application on a variety of mobile devices or emulators so the application's performance can be verified on the selected devices and under a variety of network conditions. Xcode provides the ability to transfer the compiled application to a physical device for verification. However, developers are unlikely to have access to a physical version of every device on which they wish to verify the mobile application. Therefore, Xcode also provides the ability to transfer the compiled application to an emulated/simulated device, running on a computer, which emulates characteristics of a physical device:

Configure the list of simulated devices

Manage real and simulated devices in the Devices and Simulators window in Xcode. To view this window, choose Window > Devices and Simulators. View and configure simulated devices from the Simulators tab.

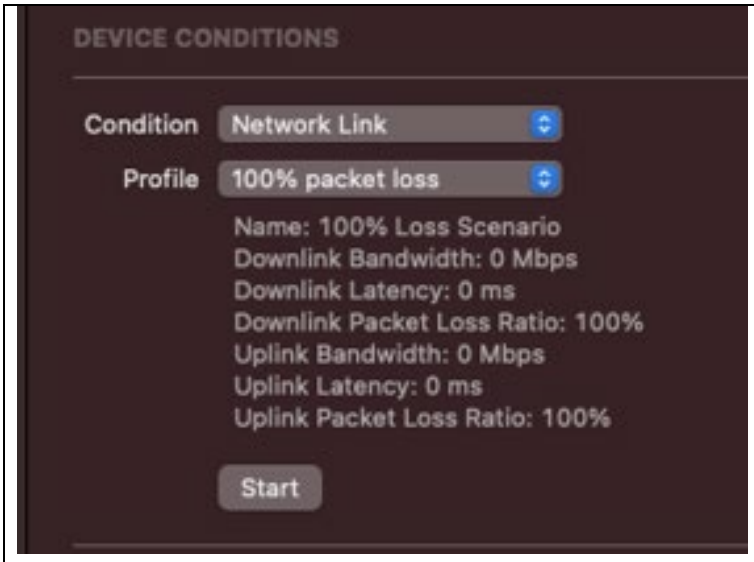


To add a new simulated device, click the plus (+) button at the bottom of the list of simulators and specify the configuration you want. You can add new simulators to specify a different device type or operating system version than the default set. To remove a simulator from the list, select it and press Delete.

https://developer.apple.com/documentation/xcode/running-your-app-in-simulator-or-on-a-device (accessed December 8, 2023).

52. Developers can verify the compiled applications under a variety of network conditions. Network properties such as bandwidth, packet loss, and latency can be simulated in order to verify the applications operate properly under a variety of network conditions to which they

may be subjected:

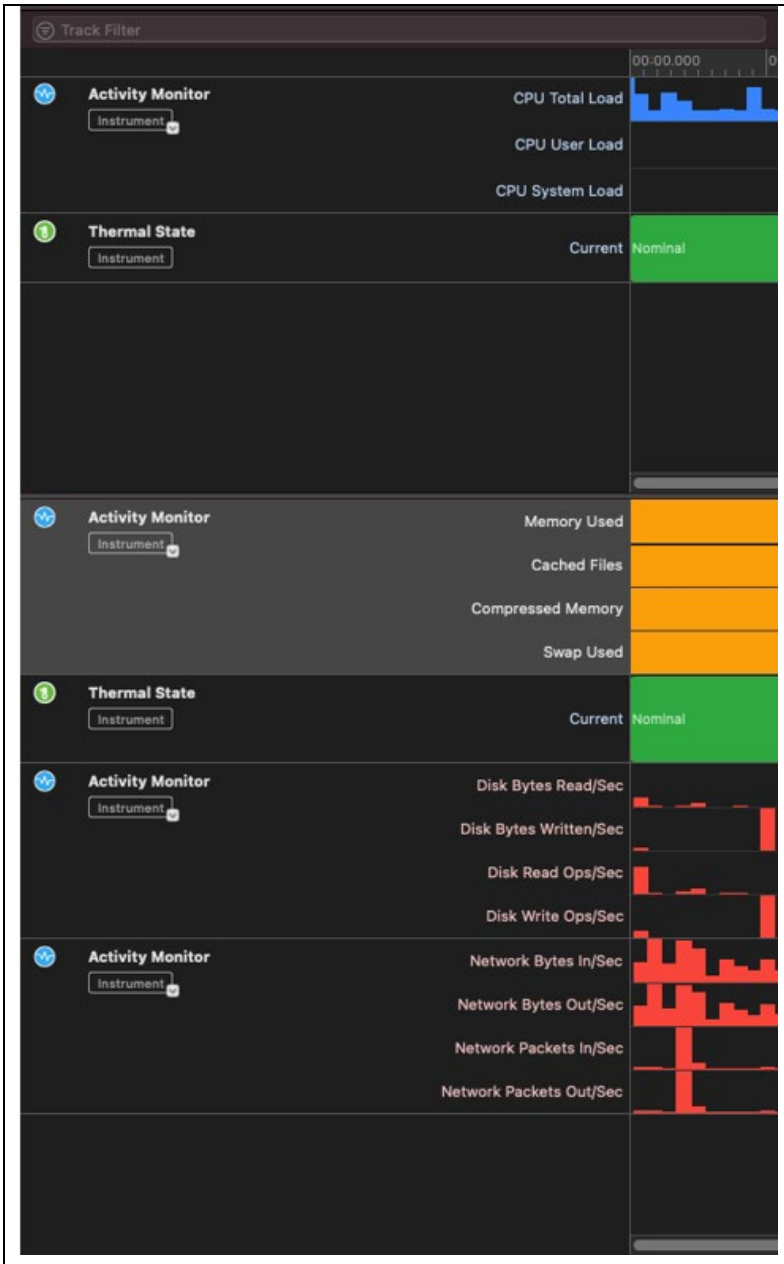


Xcode: Device Conditions

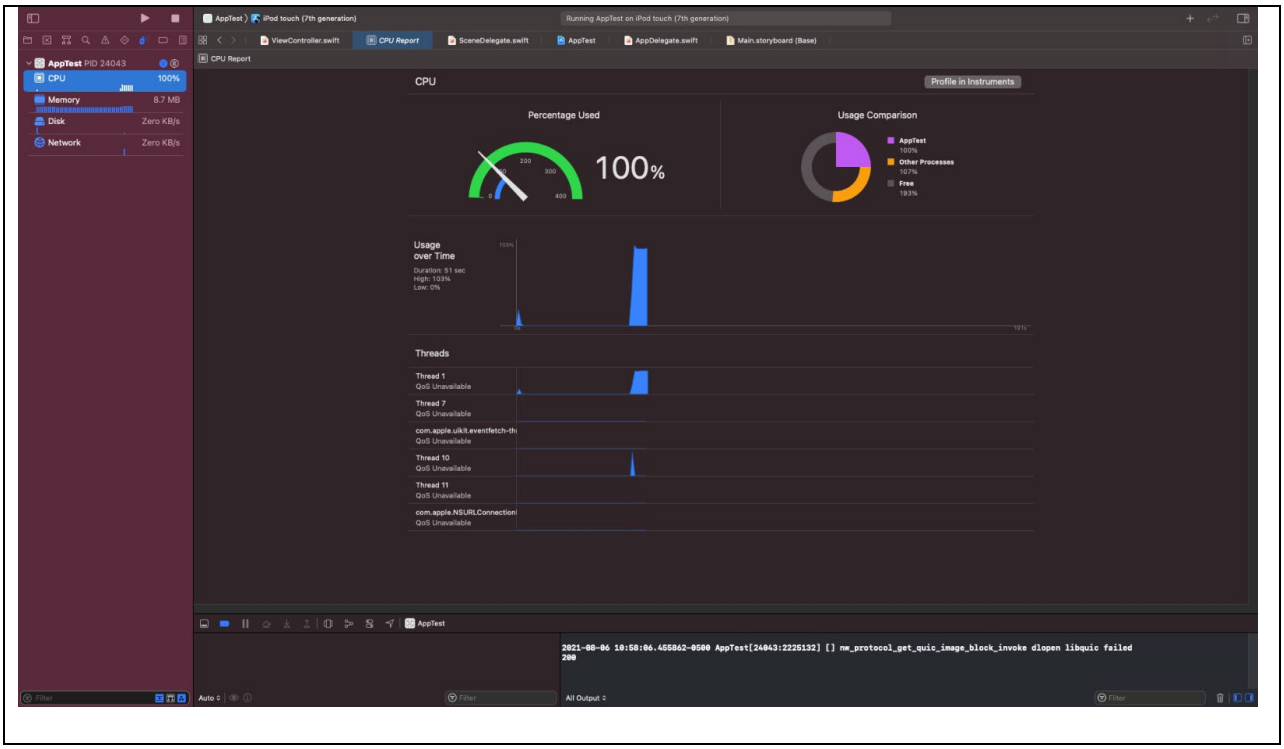
Xcode: Network Link Conditioner Utility

53. Xcode also includes tools to monitor the performance of an application while it is running. Xcode provides tools to monitor the mobile application, regardless of whether it is executing on a physical device or an emulated device. Properties such as network characteristics, processor usage, memory usage, and disk usage can be monitored and displayed to enable the

developer to optimize the performance of the mobile application:

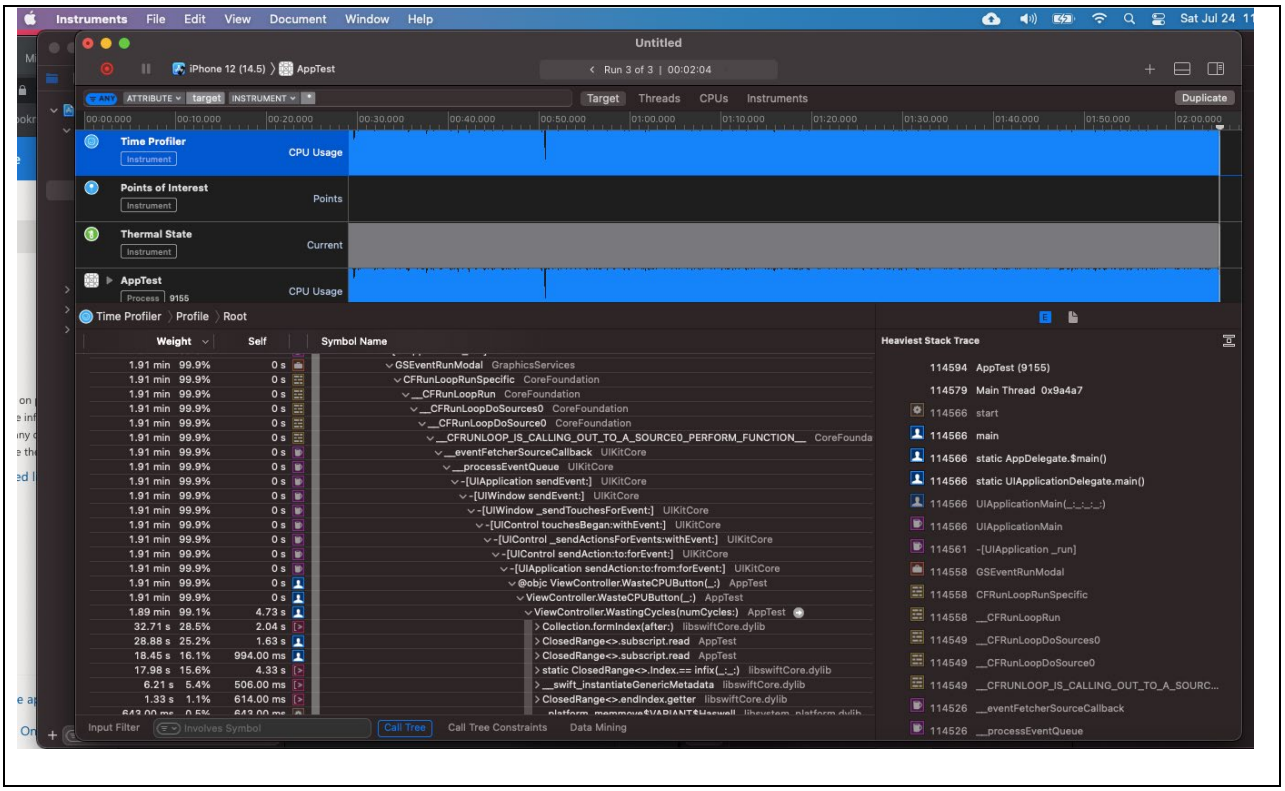


XCode: Instruments



Xcode: CPU Report

54. Xcode can also be used to correspond the utilization of the displayed resources with the functions of the application responsible for that utilization, for example by using the Time Profiler:

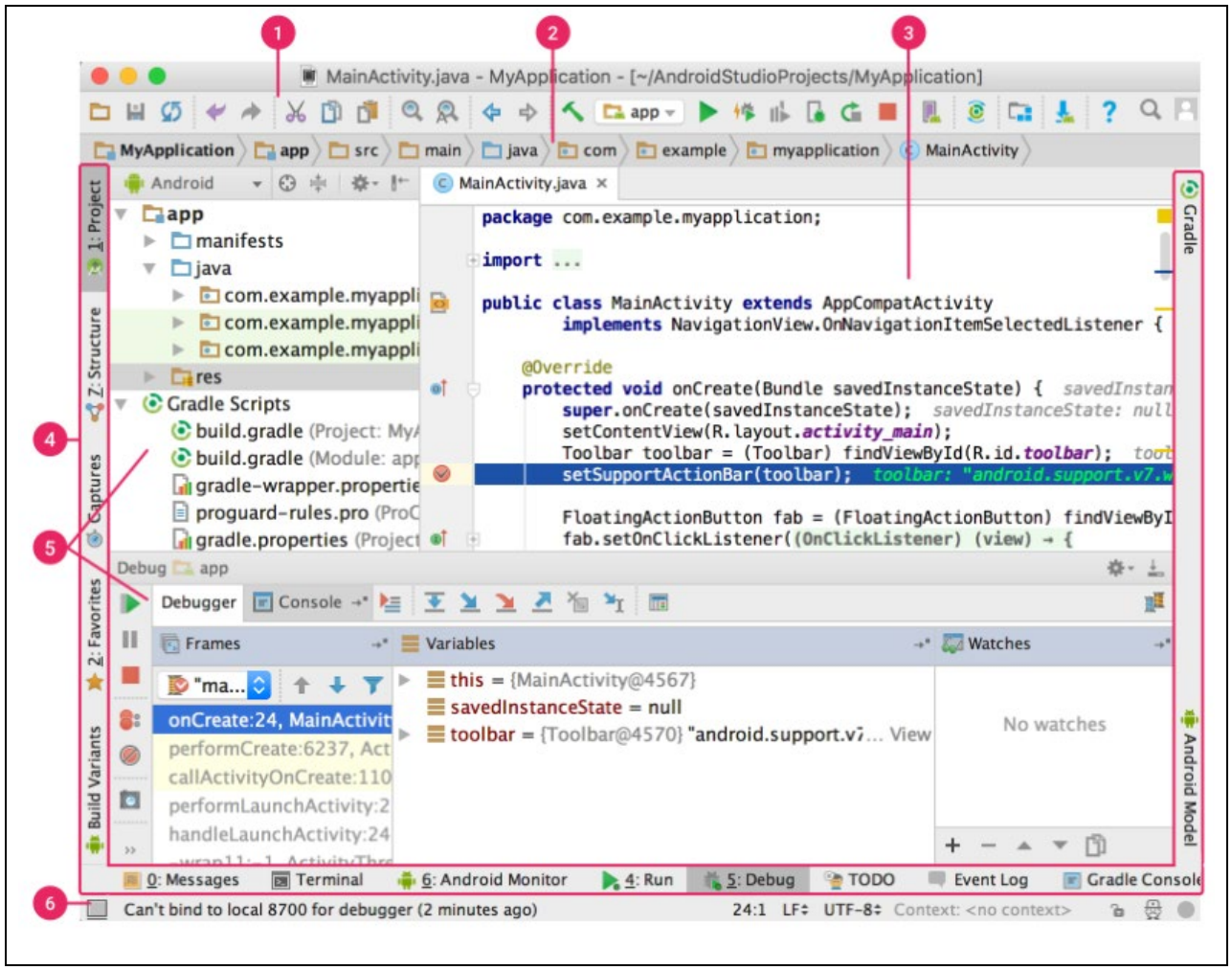


Xcode: Time Profiler

55. The above features allow a developer to write mobile application code targeting a variety of device models and verify its performance in an efficient manner.

Android Studio

56. Google's Android Studio includes the features noted above, including the editor window illustrated below:



https://developer.android.com/studio/intro/user-interface (accessed December 8, 2023).

57. Android Studio also includes a compiler that will transform the code into an application that will run on a mobile device:

Task	Description
Run External tool	Run an application that's external to Android Studio. In the External Tools dialog, select one or more applications that you want to run and then click **OK**. If the application isn't defined in Android Studio yet, add its definition in the Create Tools dialog. For more information, see Configuring Third-Party Tools and External Tools.
Run Another Configuration	Execute one of the existing run/debug configurations. In the **Choose Configuration to Execute** dialog, select a configuration to execute and then click **OK**.
Make	Compile the project or the module. Android Studio executes the Make Module command if the run/debug configuration specifies a particular module, or it executes the Make Project command if no modules are specified.
Make Project	Compile the project. Android Studio executes the Make Project command.

https://developer.android.com/studio/run/rundebugconfig (accessed December 8, 2023) (highlighting added).

58. Android Studio further includes tools to execute the compiled application on a variety of mobile devices or device models (Android Virtual Devices) so that the application's performance can be verified on the selected devices under a variety of network conditions. Android Studio provides the ability to transfer the compiled application to a physical device for verification. However, developers are unlikely to have access to a physical version of every device on which they wish to verify the mobile application. Therefore, Android Studio provides the ability to transfer the compiled application to an emulated device running on a computer, which emulates the characteristics of a physical device:

Run apps on the Android Emulator

On this page

Get started with the emulator
- Emulator system requirements
- Create an Android Virtual Device
- Run your app on the emulator
- Navigate the emulator

Update the emulator

The Android Emulator simulates Android devices on your computer so that you can test your application on a variety of devices and Android API levels without needing to have each physical device. The emulator offers these advantages:

- **Flexibility**: In addition to being able to simulate a variety of devices and Android API levels, the emulator comes with predefined configurations for various Android phone, tablet, Wear OS, and Android TV devices.
- **High fidelity**: The emulator provides almost all the capabilities of a real Android device. You can simulate incoming phone calls and text messages, specify the location of the device, simulate different network speeds, simulate rotation and other hardware sensors, access the Google Play Store, and much more.
- **Speed**: Testing your app on the emulator is in some ways faster and easier than doing so on a physical device. For example, you can transfer data faster to the emulator than to a device connected over USB.

In most cases, the emulator is the best option for your testing needs. This page covers the core emulator functionalities and how to get started with it.

Alternatively, you can deploy your app to a physical device. For more information, see Run apps on a hardware device.

https://developer.android.com/studio/run/emulator (accessed December 8, 2023).

Run apps on a hardware device

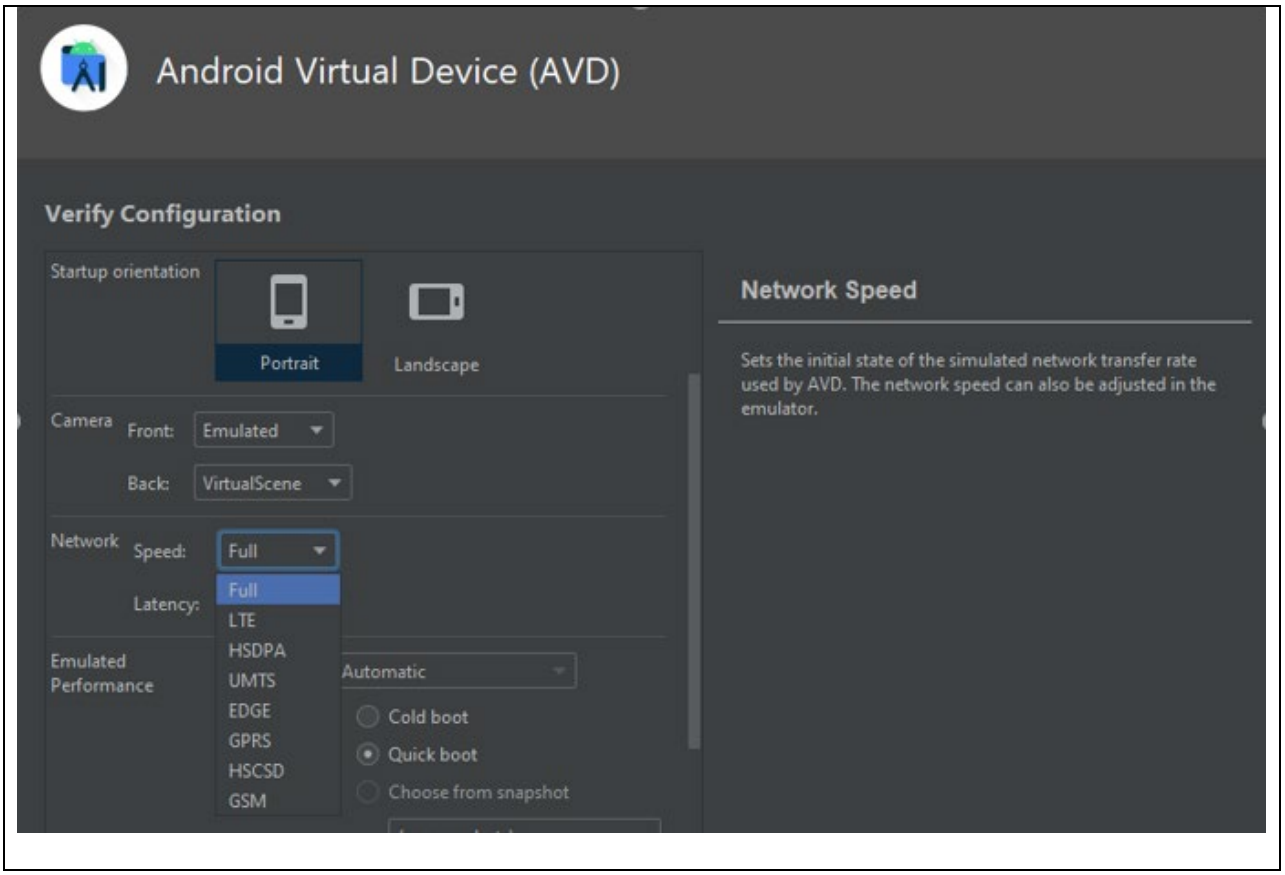
On this page

Set up a device for development
Connect to your device using USB
Connect to your device using Wi-Fi
Device mirroring
Known issues
Privacy notice
Troubleshoot device connection
Troubleshoot with the Connection Assistant
•••

Always test your Android app on a real device before releasing it to users. This page describes how to set up your development environment and Android device for testing and debugging over an Android Debug Bridge (ADB) connection.

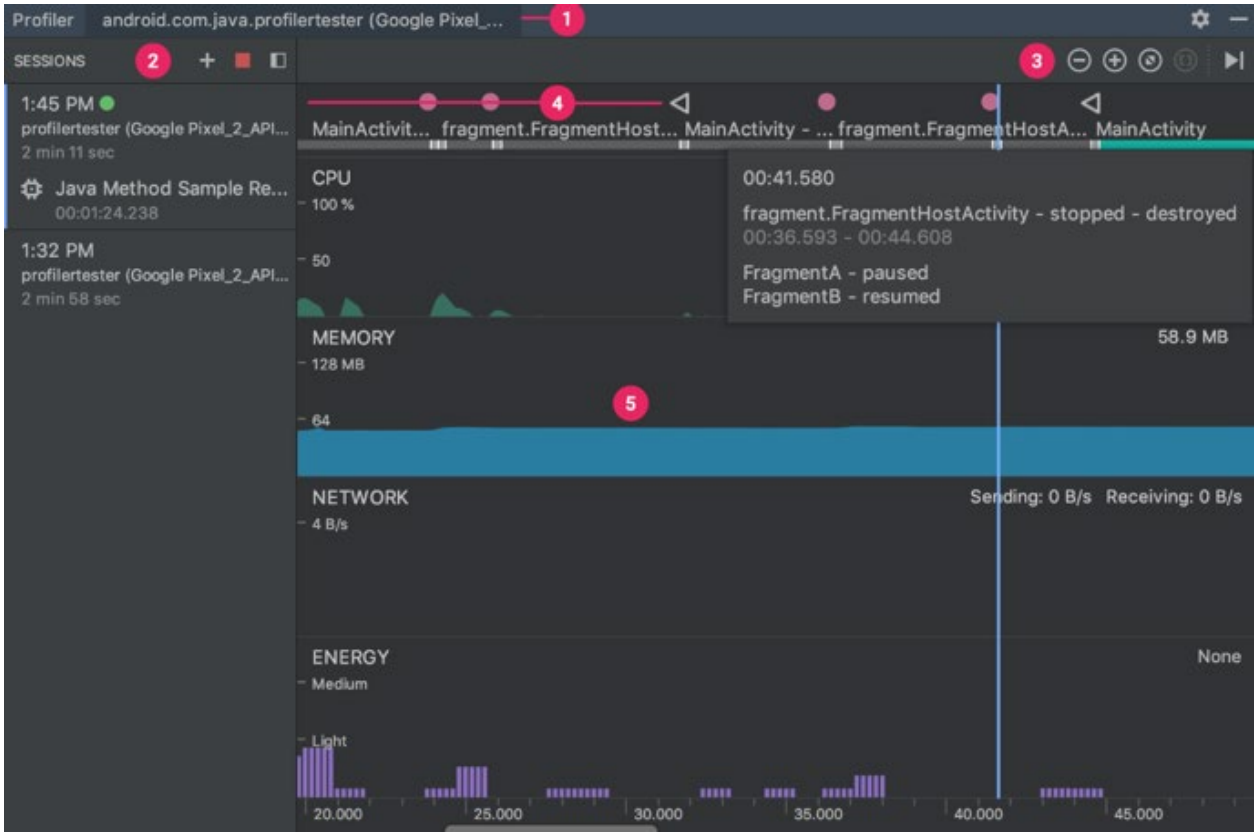
https://developer.android.com/studio/run/device (accessed December 8, 2023).

59. Developers can verify the compiled applications under a variety of network conditions. Network properties such as speed and latency can be simulated in order to better verify that the application performs appropriately under a variety of network conditions to which it may be subjected:



Android Studio: Android Virtual Device Manager (showing Network Speed options).

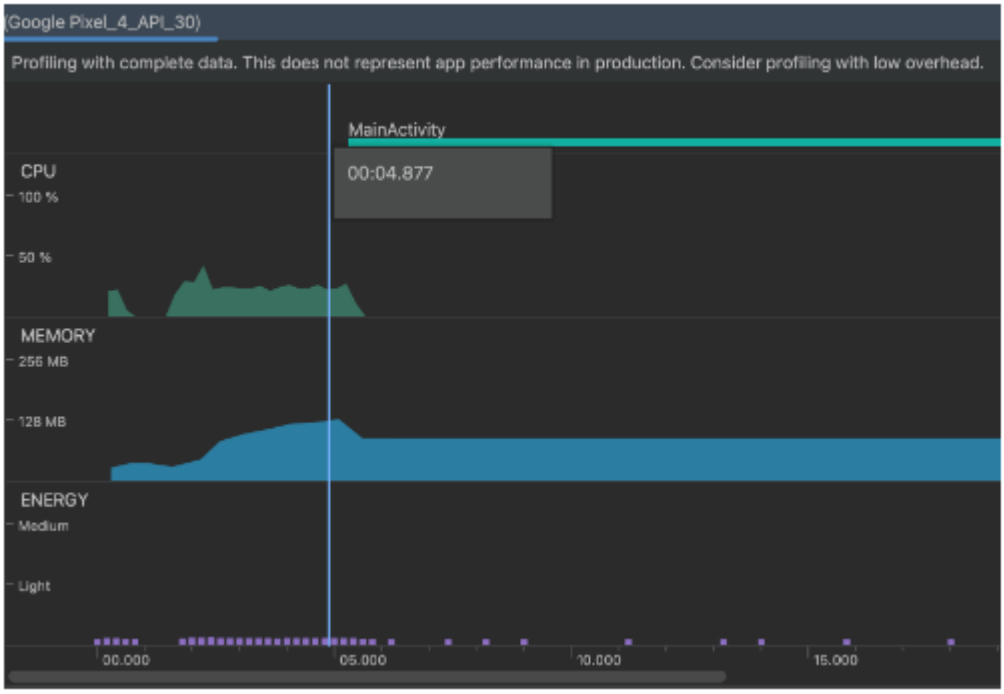
60. Android Studio includes tools (profilers) to monitor performance of the application while it is running. The pre-Bumblebee release of Android Studio provides tools to monitor the mobile application, regardless of whether it is executing on a physical device or an emulated device. Android Studio includes profilers providing such monitoring capabilities: CPU, Memory, Network, and Energy:



https://developer.android.com/studio/profile/android-profiler (accessed May 18, 2023).

61. In the Bumblebee release (and later releases), the Network Profiler functionality was moved to the Network Inspector window.

- **Profile 'app' with complete data** starts the CPU, Memory, and Energy profilers.



https://developer.android.com/studio/profile/android-profiler (accessed December 8, 2023).

Network Inspector overview

At the top of the Network Inspector window, you can see the event timeline. Click and drag to select a portion of the timeline and inspect the traffic.

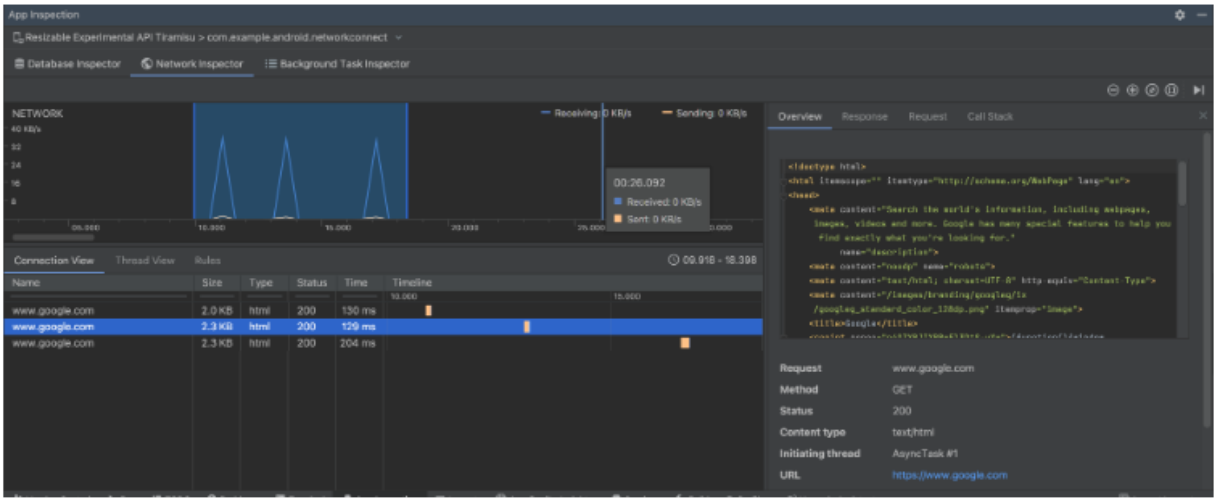


Figure 1. The Network Inspector window.

https://developer.android.com/studio/debug/network-profiler (accessed December 8, 2023).

62. Android Studio can also be used to correspond the utilization of the displayed resources with the functions of the application responsible for the utilization:

Inspect CPU activity with CPU Profiler

On this page

CPU Profiler overview

Optimizing your app's CPU usage has many advantages, such as providing a faster and smoother user experience and preserving device battery life.

You can use the CPU Profiler to inspect your app's CPU usage and thread activity in real time while interacting with your app, or you can inspect the details in recorded method traces, function traces, and system traces.

The detailed information that the CPU Profiler records and shows is determined by which recording configuration you choose:

- **System Trace:** Captures fine-grained details that allow you to inspect how your app interacts with system resources.
- **Method and function traces:** For each thread in your app process, you can find out which methods (Java) or functions (C/C++) are executed over a period of time, and the CPU resources each method or function consumes during its execution. You can also use method and function traces to identify *callers* and *callees*. A caller is a method or function that invokes another method or function, and a callee is one that is invoked by another method or function. You can use this information to determine which methods or functions are responsible for invoking particular resource-heavy tasks too often and optimize your app's code to avoid unnecessary work.

  When recording method traces, you can choose *sampled* or *instrumented* recording. When recording function traces, you can only use sampled recording.

https://developer.android.com/studio/profile/cpu-profiler (accessed December 8, 2023).

63. The above features allow a developer to write the application code and verify its performance in an efficient manner.

The Prevalence of Mobile Applications

64. Smartphones and tablets have become ubiquitous and have created demand for mobile applications tailored to run on those devices. There are more than 1 billion active iPhone users and more than 3 billion active Android users.[20] Apple and Google each provide their own app store, which enables users to easily find and download mobile applications developed by third parties.[21] Mobile applications developed on either Xcode (for Apple) or Android Studio (for Google) can be submitted to the respective app store *if* the applications meet certain performance criteria.[22] In order to develop mobile applications that meet the criteria set out by Apple and Google, developers must utilize the authoring tools in Xcode or Android Studio that were first pioneered by the named inventor. If the mobile applications do not satisfy certain performance and debugging standards, then both Apple and Google will reject the mobile application for distribution in their respective app stores.

65. The availability of mobile applications has also had a drastic impact on the banking industry. Retail bank branch usage declined by 35% overall from 2015 to 2020, while retail banking usage among 18 to 24 year-olds declined by nearly 50%.[23] At the same time, the number of digital banking interactions increased by 15%.[24] The COVID-19 pandemic also increased the importance of mobile banking—"[a]ccording to a 2020 Deloitte survey of 2,000 Americans, the most important factor influencing a client's likelihood of switching banks during COVID-

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[20] https://www.businessofapps.com/data/apple-statistics/ (accessed December 8, 2023); https://www.businessofapps.com/data/android-statistics/ (accessed December 8, 2023).
[21] https://www.apple.com/app-store/ (accessed December 8, 2023); https://play.google.com/store/apps/ (accessed December 8, 2023).
[22] https://developer.apple.com/app-store/review/guidelines/ (accessed December 8, 2023); https://play.google.com/console/about/guides/releasewithconfidence/ (accessed December 8, 2023).
[23] https://deloitte.wsj.com/articles/how-banks-can-redefine-the-digital-experience-01628093439 (accessed December 8, 2023).
[24] *Id.*

19 is a poorly designed mobile platform."[25] Overall, more than 90% of banking customers under the age of 40 utilize mobile banking.[26] Mobile banking app features are regarded as one of the "key attractions" for younger customers selecting a new bank.[27] Studies indicate that 33% of Millennials would consider completely abandoning traditional brick and mortar banking in favor of an app.[28] With Millennials graduating from college, becoming professionals and already making up more than a third of the American labor force,[29] the convergence of the above two factors will change the core model of banking for generations to come.

66. Given that mobile applications are now the primary method through which many customers interact with their bank, a bank's mobile application that is known to have "glitches" or "bugs" is likely to steer potential customers to other banks with better mobile application support.[30] Millennials, who make up an ever increasing percentage of all mobile users, are much less forgiving concerning their application experience and will unapologetically delete an app just because the logo is not appealing.[31] Similarly, a mobile banking application that performs slowly when trying to complete transactions is likely to steer potential customers

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[25] *Id.*
[26] https://www.forbes.com/sites/ronshevlin/2021/07/29/mobile-banking-adoption-has-skyrocketed-but-so-have-fraud-concerns-what-can-banks-do/ (accessed December 8, 2023).
[27] https://thefinancialbrand.com/119897/bank-of-america-grabbing-1-in-3-gen-zs-and-millennials-with-mobile/ (accessed December 8, 2023).
[28] https://www.temenos.com/news/2015/09/29/will-millennials-need-banks-in-the-future/ (accessed December 8, 2023).
[29] https://www.pewresearch.org/short-reads/2018/04/11/millennials-largest-generation-us-labor-force/ (accessed December 8, 2023).
[30] https://www.forbes.com/advisor/banking/how-to-choose-mobile-banking-personal-finance-app/ (accessed December 8, 2023).
[31] https://www.comscore.com/Insights/Blog/5-Interesting-Facts-About-Millennials-Mobile-App-Usage-from-The- 2017-US-Mobile-App-Report (accessed December 8, 2023).

away.[32] Even mobile application characteristics as simple as poor screen readability on a user's device can drive away potential customers.[33]

67. All of this underscores the need for companies to not only provide mobile applications, but to verify that those mobile applications will provide fast, bug-free performance on the wide variety of mobile devices used by customers and within a wide variety of environmental (*e.g.*, network) conditions presented by mobile customers. To accomplish that goal, mobile application developers must use specialized authoring tools that accommodate the unique demands presented by a wide variety of mobile devices across a vast array of global carriers and networks.

Patents-in-Suit

68. Defendants are infringing at least the following patents: (1) U.S. Patent No. 8,924,192; (2) U.S. Patent No. 9,298,864; (3) U.S. Patent No. 9,971,678; (4) U.S. Patent No. 10,353,811; and (5) U.S. Patent No. 10,691,579 (collectively the "Patents-in-Suit"). The Patents-in-Suit are attached hereto as Exhibits A-E.

U.S. Patent No. 8,924,192

69. On Dec. 30, 2014, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 8,924,192 ("the '192 Patent") entitled "Systems Including Network Simulation for Mobile Application Development and Online Marketplaces for Mobile Application Distribution, Revenue Sharing, Content Distribution, or Combinations thereof" on an application filed Nov. 9, 2012, United States Patent Application Ser. No.

[32] https://www.forbes.com/sites/ronshevlin/2021/03/29/new-research-identifies-the-most-critical-mobile-banking-features/ (accessed December 8, 2023); https://thefinancialbrand.com/108788/mobile-banking-app-customer-experience-user-security-click/ (accessed December 8, 2023).
[33] https://thefinancialbrand.com/108788/mobile-banking-app-customer-experience-user-security-click/ (accessed December 8, 2023).

13/673,692. The '192 Patent is a continuation of United States Patent Application Ser. No. 12/759,543, filed Apr. 13, 2010, which is a continuation of United States Patent Application Ser. No. 11/449,958, filed Jun. 9, 2006, and issued as United States Pat. No. 7,813,910, on Oct. 12, 2012, which application claims priority to United States Patent Application Ser. No. 60/689,101 filed Jun. 10, 2005.

70. The '192 Patent is presumed valid and enforceable.

71. Plaintiffs are the owners of the '192 Patent.

72. The '192 Patent describes systems that address technical problems related to authoring mobile applications and verifying their performance on a variety of devices and networks. *See, e.g.*, '192 Patent at Fig. 7, 9:46-10:29, 14:19-23.

73. Technological improvements described and claimed in the '192 Patent were not conventional, well-known, or routine at the time of their respective inventions but involved novel and non-obvious approaches to problems and shortcomings prevalent in the art at the time. *See, e.g.*, '192 Patent at 1:23-2:8.

74. The written description of the '192 Patent supports each of the elements of the claims, allowing a person of ordinary skill in the art ("POSITA") to understand what the elements cover and how the non-conventional and non-routine combination of claim elements differed markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, '192 Patent at Fig. 7, 9:46-10:29, 14:19-23.

75. The '192 Patent represents a substantial technical improvement in the area of authoring mobile applications, as demonstrated by its frequent citation. Plaintiffs' mobile authoring innovations have been cited against a number of industry-leading companies as prior art by the United States Patent and Trademark Office and the World Intellectual Property

Organization, including citations against Google.[34]

U.S. Patent No. 9,298,864

76. On March 29, 2016, the USPTO duly and legally issued United States Patent No. 9,298,864 (the "'864 Patent") entitled "System Including Network Simulation for Mobile Application Development" on an application filed Nov. 19, 2013, United States Patent Application Ser. No. 14/084,321. The '864 Patent is a divisional of United States Application Ser. No. 12/705,913, filed Feb. 15, 2010 (now United States Pat. No. 8,589,140), which claims priority to United States Application Ser. No. 61/152,934, filed Feb. 16, 2009, and is a continuation-in-part of United States Application Ser. No. 11/449,958, filed Jun. 9, 2006 (now U.S. Pat. No. 7,813,910), which claims priority to United States Application Ser. No. 60/689,101, filed Jun. 10, 2005.

77. The '864 Patent is presumed valid and enforceable.

78. Plaintiffs are the owners of the '864 Patent.

79. The '864 Patent describes systems that address technical problems related to authoring mobile applications and verifying their performance on a variety of devices and networks. *See, e.g.*, '864 Patent at Fig. 7, 9:23-10:7, 13:66-14:3.

80. Technological improvements described and claimed in the '864 Patent were not conventional, well-known, or routine at the time of their respective inventions but involved novel and non-obvious approaches to problems and shortcomings prevalent in the art at the time. *See, e.g.*, '864 Patent at 1:18-2:7.

81. The written description of the '864 Patent supports each of the elements of the claims, allowing a POSITA to understand what the elements cover and how the non-conventional and

[34] *See* https://patents.google.com/patent/US8924192B1/en (accessed December 8, 2023).

non-routine combination of claim elements differed markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, '864 Patent at Fig. 7, 9:23-10:7, 13:66-14:3.

82. The '864 Patent represents a substantial technical improvement in the area of authoring mobile applications, as demonstrated by its frequent citation. Plaintiffs' mobile authoring innovations have been cited against a number of industry-leading companies as prior art by the United States Patent and Trademark Office and the World Intellectual Property Organization.[35]

U.S. Patent No. 9,971,678

83. On May 15, 2018, the USPTO duly and legally issued United States Patent No. 9,971,678 (the "'678 Patent") entitled "Systems Including Device and Network Simulation for Mobile Application Development" on an application filed Dec. 23, 2014, United States Patent Application Ser. No. 14/581,475. The '678 Patent is a continuation of United States Patent Application Ser. No. 13/673,692, filed Nov. 9, 2012 and issued as United States Pat. No. 8,924,192, on Dec. 30, 2014, which is a continuation of United States Patent Application Ser. No. 12/759,543, filed April 13, 2010 and issued as United States Pat. No. 8,332,203, on Dec. 11, 2012, which is a continuation of United States Patent Application Ser. No. 11/449,958, filed Jun. 9, 2006 and issued as United States Pat. No. 7,813,910, on Oct. 12, 2010, which application claims priority to United States Patent Application Ser. No. 60/689,101 filed Jun. 10, 2005.

84. The '678 Patent is presumed valid and enforceable.

85. Plaintiffs are the owners of the '678 Patent.

[35] *See* https://patents.google.com/patent/US9298864B2/en (accessed December 8, 2023).

86. The ’678 Patent describes systems that address technical problems related to authoring mobile applications and verifying their performance on a variety of devices and networks. *See, e.g.*, ’678 Patent at Fig. 7, 9:64-10:48, 14:4-9, 14:48-52.

87. Technological improvements described and claimed in the ’678 Patent were not conventional, well-known, or routine at the time of their respective inventions but involved novel and non-obvious approaches to problems and shortcomings prevalent in the art at the time. *See, e.g.*, ’678 Patent at 1:22-2:9.

88. The written description of the ’678 Patent supports each of the elements of the claims, allowing a POSITA to understand what the elements cover and how the non-conventional and non-routine combination of claim elements differed markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, ’678 Patent at Fig. 7, 9:64-10:48, 14:4-9, 14:48-52.

89. The ’678 Patent represents a substantial technical improvement in the area of authoring mobile applications, as demonstrated by its frequent citation. Plaintiffs’ mobile authoring innovations have been cited against a number of industry-leading companies as prior art by the United States Patent and Trademark Office and the World Intellectual Property Organization, including citations against Amazon.[36]

U.S. Patent No. 10,353,811

90. On July 16, 2019, the USPTO duly and legally issued United States Patent No. 10,353,811 (“the ’811 Patent”) entitled “SYSTEM FOR DEVELOPING AND TESTING A MOBILE APPLICATION” on an application filed May 14, 2018, United States Patent Application Ser. No. 15/979,330. The ’811 Patent is a continuation of U.S. patent application Ser. No.

[36] *See* https://patents.google.com/patent/US9971678/en (accessed December 8, 2023).

14/581,475, filed Dec. 23, 2014, which is a continuation of U.S. patent application Ser. No. 13/673,692, filed Nov. 9, 2012, and issued as U.S. Pat. No. 8,924,192, on Dec. 30, 2014, which is a continuation of U.S. patent application Ser. No. 12/759,543, filed Apr. 13, 2010, and issued as U.S. Pat. No. 8,332,203, on Dec. 11, 2012, which is a continuation of U.S. patent application Ser. No. 11/449,958, filed Jun. 9, 2006, and issued as U.S. Pat. No. 7,813,910, on Oct. 12, 2010, which application claims priority to U.S. Patent Application No. 60/689,101 filed Jun. 10, 2005.

91. The ’811 Patent is presumed valid and enforceable.

92. Plaintiffs are the owners of the ’811 Patent.

93. The ’811 Patent describes systems that address technical problems related to authoring mobile applications and verifying their performance on a variety of devices and networks. *See, e.g.*, ’811 Patent at Fig. 7, 9:63-10:48, 14:4-9, 14:48-52.

94. Technological improvements described and claimed in the ’811 Patent were not conventional, well-known, or routine at the time of their respective inventions but involved novel and non-obvious approaches to problems and shortcomings prevalent in the art at the time. *See, e.g.*, ’811 Patent at 1:23-2:11.

95. The written description of the ’811 Patent supports each of the elements of the claims, allowing a POSITA to understand what the elements cover and how the non-conventional and non-routine combination of claim elements differed markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, ’811 Patent at Fig. 7, 9:63-10:48, 14:4-9, 14:48-52.

U.S. Patent No. 10,691,579

96. On June 23, 2020, the USPTO duly and legally issued United States Patent No. 10,691,579

("the '579 Patent") entitled "SYSTEMS INCLUDING DEVICE AND NETWORK SIMULATION FOR MOBILE APPLICATION DEVELOPMENT" on an application filed March 28, 2016, United States Patent Application Ser. No. 15/083,186. The '579 Patent is a division of U.S. application Ser. No. 14/084,321, filed Nov. 19, 2013 (now U.S. Pat. No. 9,298,864), which claims priority to U.S. application Ser. No. 12/705,913, filed Feb. 15, 2010 (now U.S. Pat. No. 8,589,140), which claims priority to U.S. Application No. 61/152,934, filed Feb. 16, 2009, and is a continuation-in-part of U.S. application Ser. No. 11/449,958, filed Jun. 9, 2006 (now U.S. Pat. No. 7,813,910), which claims priority to U.S. Application No. 60/689,101, filed Jun. 10, 2005.

97. The '579 Patent is presumed valid and enforceable.

98. Plaintiffs are the owners of the '579 Patent.

99. The '579 Patent describes systems that address technical problems related to authoring mobile applications and verifying their performance on a variety of devices and networks. *See, e.g.*, '579 Patent at Fig. 7, 9:42-10:26, 13:48-53, 14:25-29.

100. Technological improvements described and claimed in the '579 Patent were not conventional, well-known, or routine at the time of their respective inventions but involved novel and non-obvious approaches to problems and shortcomings prevalent in the art at the time. *See, e.g.*, '579 Patent at 1:20-2:11.

101. The written description of the '579 Patent supports each of the elements of the claims, allowing a POSITA to understand what the elements cover and how the non-conventional and non-routine combination of claim elements differed markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, '579 Patent at Fig. 7, 9:42-10:26, 13:48-53, 14:25-29.

WAPP's Prior Enforcement of the Patents-in-Suit

102. On July 2, 2018, Wapp filed a patent infringement lawsuit against Micro Focus International PLC (the "Micro Focus Suit").[37] The asserted patents in the Micro Focus Suit included the '192 Patent, '864 Patent, and '678 Patent. The jury trial in the Micro Focus Suit began on March 1, 2021.[38] At the conclusion of that trial, the jury awarded Wapp $172,554,269.00, which was 100% of Wapp's requested damages; the Court subsequently entered final judgment in favor of Wapp, confirming the jury's damages award, and granting Wapp's motion for judgment as a matter of law regarding validity.[39] The Micro Focus Suit ultimately settled for $67.5 million.

103. In parallel with the Micro Focus Suit, Wapp also filed lawsuits against Bank of America[40] on July 20, 2018 and Wells Fargo[41] on July 16, 2018 based on Wells Fargo's and Bank of America's infringing use of Micro Focus' Loadrunner software. Those lawsuits were subsequently stayed pursuant to a stipulation that Wells Fargo and Bank of America "hereby agree[] to be bound by any final judgment in the [Micro Focus] Suit as to both infringement and invalidity."[42]

104. On August 27, 2021, Wapp again filed suit against Wells Fargo (the "Wells Fargo Suit"), this time based on Wells Fargo's infringing use of software development tools including Apple's Xcode and Google's Android Studio.[43] The case proceeded to discovery and a claim

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[37] *Wapp Tech. Ltd. v. Micro Focus Int'l PLC*, No. 4:18-cv-469-ALM, Dkt. No. 1 (E.D. Tex., July 2, 2018).
[38] *Id.* at Dkt. 486 at 1.
[39] *Id.* at Dkt. 486 at 2; *id.* at Dkt. 487 at 1.
[40] *Wapp Tech. Ltd. v. Bank of America Corp..*, No. 4:18-cv-519-ALM, Dkt. No. 1 (E.D. Tex., July 20, 2018).
[41] *Wapp Tech. Ltd. v. Wells Fargo & Co.*, No. 4:18-cv-501-ALM, Dkt. No. 1 (E.D. Tex., July 16, 2018).
[42] *Id.* at Dkt. 137 at 8.
[43] *Wapp Tech. Ltd. v. Wells Fargo Bank, N.A.*, No. 4:21-cv-00671-ALM, Dkt. No. 1 (E.D. Tex.,

construction hearing and order in which the Court construed four disputed terms, giving three of those terms their plain meanings and finding one indefinite.[44] On September 2, 2022, Wapp issued a subpoena to Apple in connection with the Wells Fargo Suit. The subpoena identified the pending lawsuit and relevant versions of Xcode and informed Apple about Wapp's infringement allegations. Wapp and Wells Fargo entered into a settlement in the fall of 2022.

105. On August 27, 2021, Wapp again filed suit against Bank of America (the "BoA Suit"), this time based on Bank of America's infringing use of software development tools including Apple's Xcode and Google's Android Studio.[45] The case proceeded to discovery and a claim construction hearing and order in which the Court construed four disputed terms, giving three of those terms their plain meanings and finding one indefinite.[46] On September 2, 2022, Wapp issued a subpoena to Apple in connection with the BoA Suit. The subpoena identified the pending lawsuit and relevant versions of Xcode and informed Apple about Wapp's infringement allegations. Wapp and Bank of America entered into a settlement in late 2022.

106. On December 22, 2023 filed suit against JPMorgan Chase (the "Chase Suit") based on Chase's infringing use of software development tools including Apple's Xcode and Google's Android Studio.[47] The case proceeded to discovery and a claim construction hearing and order in which the Court construed nine disputed terms, resolving all nine claim construction disputes in Wapp's favor.[48] On July 23, 2024, Wapp issued a subpoena to Apple in connection with the Chase Suit. The subpoena identified the pending lawsuit and relevant versions of

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August 27, 2021).
[44] *Id.* at Dkt. 96.
[45] *Wapp Tech. Ltd. v. Bank of America N.A.*, No. 4:21-cv-00670-ALM, Dkt. No. 1 (E.D. Tex., August 27, 2021).
[46] *Id.* at Dkt. 110.
[47] *Wapp Tech. Ltd. v. Bank of America N.A.*, No. 4:23-cv-01137-ALM, Dkt. No. 1 (E.D. Tex., December 22, 2023).
[48] *Id.* at Dkt. 80.

Xcode and informed Apple about Wapp's infringement allegations. Wapp and Chase filed a notice of a settlement in principle in late 2024.

Infringement by Defendants

Apple

107. Apple derives a large portion of its revenue from sales of iOS devices, applications, and services.[49] Apple's Xcode Development Tools are used to develop the iOS applications that run on iOS devices (such as iPhones and iPads).[50] Those Xcode Development Tools are used by both Apple and third-party software developers to develop applications installed on iOS devices and distributed through the Apple App Store.

108. Apple has acknowledged that "[t]he Company's future performance depends in part on support from third-party software developers" because "decisions by customers to purchase its hardware products depend in part on the availability of third-party software applications and services."[51] Those third-party software applications and services are developed using Xcode Development Tools. Thus, the availability of the Xcode Development Tools practicing the claimed inventions is critical to the success of Apple's mobile devices and software.

109. Apple makes the Xcode Development Tools.[52] Apple sells, offers for sale, and distributes the Xcode Development Tools in multiple ways, including through its App Store and its website.[53] Apple customers—such as Apple's co-Defendants (discussed below)—use the Xcode Development Tools in an infringing manner to develop mobile applications for distribution in the Apple App Store. On information and belief, Apple uses the Xcode

[49] *See, e.g.,* Apple's 2024 Form 10-k at 35, https://d18rn0p25nwr6d.cloudfront.net/CIK-0000320193/c87043b9-5d89-4717-9f49-c4f9663d0061.pdf (accessed March 3, 2025).
[50] https://developer.apple.com/xcode/ (accessed March 3, 2025) ("Xcode enables you to develop, test, and distribute apps for all Apple platforms.").
[51] Apple's 2024 Form 10-k at 10.
[52] *See, e.g.,* https://developer.apple.com/xcode/ (accessed March 3, 2025)
[53] *See, e.g.,* https://apps.apple.com/us/app/xcode/id497799835?mt=12 (accessed March 3, 2025)

Development Tools in an infringing manner to develop its own mobile applications.[54]

110. Apple has made, used, offered for sale and sold Xcode Development Tools continuously for at least the six-year period preceding this complaint.

111. Apple further directly infringes by making, using, selling, offering for sale, and/or importing infringing mobile devices (such as iPhones) that come with the Photos app installed. An iPhone with the Photos app installed infringes at least '192 Patent Claim 60 because it constitutes a "system comprising an application configured to enable a user to modify a photo on a mobile device"[55] and because the Photos app was developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application."

112. Apple also indirectly infringes by actively inducing others, including Apple's co-Defendants, to directly infringe the Patents-in-Suit by using Xcode in an infringing manner. Apple has induced, caused, urged, encouraged, aided and abetted its direct and indirect customers to infringe the Patents-in-suit. Apple has done so by acts including but not limited to selling Xcode to its customers; marketing Xcode; and providing instructions, technical support, and other support and encouragement (available via https://developer.apple.com/documentation/xcode/, for instance) for the infringing use of Xcode. For example, Apple maintains web pages where it specifically instructs its customers how to use Xcode in an infringing manner.[56] Such conduct by Defendant Apple was intended

[54] *See* https://apps.apple.com/bj/developer/apple/id284417353?mt=12 (accessed March 3, 2025).
[55] *See, e.g.*, https://support.apple.com/guide/iphone/edit-photos-and-videos-iphb08064d57/18.0/ios/18.0 ("After you take a photo or video, use the tools in the Photos app to edit it on your iPhone.")
[56] *See, e.g.*, https://developer.apple.com/documentation/xcode/;

to and actually resulted in direct infringement, including the making, using, selling, offering for sale, and/or importation of Xcode and/or infringing mobile applications in the United States by Apple's customers (including Apple's co-Defendants).

Capital One and Frost

113. Capital One also offers multiple mobile applications that it distributes through Apple's App Store[57] and Google's Google Play Store.[58] As an example, Capital One's "Capital One Mobile" application has over 1.6M reviews and 10M+ downloads in the Google Play Store,[59] and more than 9M reviews in the Apple App Store.[60] On information and belief, the Capital One Mobile application was the most downloaded banking application in 2023.[61]

114. Frost also offers multiple mobile applications that it distributes through Apple's App Store[62] and Google's Google Play Store.[63] As an example, Frost's "Frost" application has over 11.8K reviews and 100K+ downloads in the Google Play Store, and more than 57.1K reviews in the Apple App Store.

115. On information and belief, Defendants Capital One and Frost use Apple's Xcode on an ongoing basis to author their respective mobile applications for Apple's App Store. On information and belief, Defendants Capital One and Frost use Google's Android Studio on an ongoing basis to author their respective mobile applications for Google's App Store.

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https://developer.apple.com/library/archive/navigation/

[57] https://apps.apple.com/us/developer/capital-one/id339644101 (accessed March 3, 2025).

[58] https://play.google.com/store/apps/developer?id=Capital+One+Services,+LLC (accessed March 3, 2025).

[59] https://play.google.com/store/apps/details?id=com.konylabs.capitalone&hl=en_US (accessed March 3, 2025).

[60] https://apps.apple.com/us/app/capital-one-mobile/id407558537 (accessed March 3, 2025).

[61] https://www.statista.com/statistics/1381325/us-leading-banking-apps-by-downloads/ (accessed on July 18, 2024)

[62] https://apps.apple.com/us/app/frost-bank/id605494138

[63] https://play.google.com/store/apps/details?id=com.frostbank.android

Defendants Capital One and Frost use both Xcode and Android Studio in a manner that infringes the Patents-in-Suit when they use them to author mobile applications. In addition, on information and belief, Defendants Capital One and Frost use other software tools to develop their mobile applications, and on information and belief, they potentially use those other tools in an infringing manner.

116. Defendants Capital One's and Frost's use of Xcode and Android Studio in an infringing manner is necessary to meet the performance and functionality guidelines identified by Apple and Google for admission to their respective app stores.[64] Defendants Capital One's and Frost's infringing use of Xcode and Android Studio is necessary to provide their large mobile application demographics with a satisfactory mobile application.

117. Defendants Capital One and Frost employ engineers and computer scientists who author and verify performance of mobile applications for them on an ongoing basis.

118. On information and belief, Defendants Capital One and Frost have continuously used Xcode and Android Studio in an infringing manner to create their respective mobile applications for at least the six-year period preceding this complaint.

119. In addition, as set forth above and below, Defendants Capital One and Frost infringe '192 claim 60 by virtue of their applications' functionality concerning photo modification.

COUNT I

Infringement of U.S. Patent No. 8,924,192

120. Plaintiffs incorporate the paragraphs above herein by reference.

121. Defendants without authorization have been and are directly infringing at least Claim 1 of the '192 Patent.

[64] https://developer.apple.com/app-store/review/guidelines/ (accessed December 8, 2023); https://play.google.com/console/about/guides/releasewithconfidence/ (accessed December 8, 2023).

122. Defendants Capital One and Frost infringe at least Claim 1 of the '192 Patent when their employees or agents use Apple's Xcode or Google's Android Studio (and potentially other software development tools) to author mobile applications.

123. Defendant Apple directly infringes at least Claim 1 of the '192 Patent when it makes, uses, offers to sell and sells its Xcode Development Tools. Apple also directly infringes at least Claim 60 of the '192 Patent by making, using, selling, offering for sale, and/or importing infringing mobile devices (such as iPhones) that come with the Photos app installed. An iPhone with the Photos app installed infringes at least '192 Patent Claim 60 because it constitutes a "system comprising an application configured to enable a user to modify a photo on a mobile device"[65] and because the Photos app was developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application."

124. In addition to direct infringement, Defendants Capital One and Frost also indirectly infringe the '192 Patent. On information and belief, Defendants Capital One and Frost have induced third parties to author mobile applications on their behalf using Apple's Xcode or Google's Android Studio. Defendants Capital One and Frost knowingly encourage and intend to induce infringement of the '192 Patent by instructing third parties to author applications compatible with Apple's iOS or Google's Android operating systems on these Defendants' behalf, knowing and specifically intending that Apple's Xcode or Google's Android Studio will be used in an infringing manner to author the mobile applications.

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[65] *See, e.g.*, https://support.apple.com/guide/iphone/edit-photos-and-videos-iphb08064d57/18.0/ios/18.0 ("After you take a photo or video, use the tools in the Photos app to edit it on your iPhone.")

125. Defendants Capital One and Frost also directly infringe at least Claim 60 of the '192 Patent by making, using, selling, offering for sale, and/or importing infringing mobile banking applications. The "Capital One Mobile" application and the "Frost" application are each a "system comprising an application configured to enable a user to modify a photo on a mobile device" and were developed using "a software authoring platform configured to simultaneously visually emulate, via one or more profile display windows, a plurality of hardware characteristics indicative of performance of the mobile device when executing the application."

126. In addition to direct infringement, Defendant Apple also indirectly infringes the '192 Patent. Apple has induced third parties, including its co-Defendants, to infringe the '192 Patent by using Xcode in an infringing manner and by making, using, selling, offering for sale, and/or importation of infringing mobile applications.

127. Defendants will continue to infringe unless this Court enjoins Defendants and their agents, servants, employees, representatives, and all others acting in active concert with Defendants from infringing the '192 Patent.

128. At least by the filing date of this Complaint, Defendants Capital One and Frost were aware of the infringement allegations regarding the '192 Patent contained herein.

129. At least by the filing date of this Complaint, Defendants Capital One and Frost have knowingly engaged in the willful destruction of WAPP's business as a whole, caused the loss of goodwill related to WAPP's business, diminished the viability of WAPP's business as a whole, and these Defendants' actions have had an injurious effect on the property of WAPP, including its intellectual property and the '192 Patent.

130. Defendants Capital One's and Frost's infringement of the '192 Patent, at least since the

filing of this Complaint, is deliberate and willful. These Defendants have had knowledge of the Patents-in-Suit and their infringement at least since the filing of this Complaint. These Defendants' continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs' patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

131. On information and belief, Defendant Apple has had knowledge of the '192 Patent since at least the date the '192 Patent issued and has known that Xcode infringes the '192 Patent since at least the date the '192 Patent issued. Apple was contacted on multiple occasions by persons representing Wapp between 2011 through 2014 regarding Wapp's patent portfolio, and based on those communications, on information and belief, Apple reviewed and continued to monitor Wapp's patent portfolio, thereby becoming aware of the '192 Patent when it issued. Apple was again made aware of the '192 Patent and was informed of Wapp's infringement allegations regarding Xcode by virtue of the multiple subpoenas served on Apple by Wapp in connection with the Wells Fargo Suit, the BoA Suit, and the Chase Suit. Accordingly, Apple knows of the '192 Patent and knows that it infringes the '192 Patent.

132. Apple has knowingly engaged in the willful destruction of WAPP's business as a whole, caused the loss of goodwill related to WAPP's business, diminished the viability of WAPP's business as a whole, and Apple's actions have had an injurious effect on the property of WAPP, including its intellectual property and the '192 Patent.

133. Apple's infringement of the '192 Patent is deliberate and willful. Apple's prior and continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs' patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

134. As a result of Defendants' infringement of the '192 Patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty with interest and costs.

COUNT II

Infringement of U.S. Patent No. 9,298,864

135. Plaintiffs incorporate the paragraphs above herein by reference.

136. Defendants without authorization have been and are directly infringing at least Claim 1 of the '864 Patent.

137. Defendants Capital One and Frost infringe at least Claim 1 of the '864 Patent when their employees or agents use Apple's Xcode or Google's Android Studio (and potentially other software development tools) to author mobile applications.

138. Defendant Apple directly infringes at least Claim 1 of the '864 Patent when it makes, uses, offers to sell and sells its Xcode Development Tools.

139. In addition to direct infringement, Defendants Capital One and Frost also indirectly infringe the '864 Patent. On information and belief, Defendants Capital One and Frost have induced third parties to author mobile applications on their behalf using Apple's Xcode or Google's Android Studio. Defendants Capital One and Frost knowingly encourage and intend to induce infringement of the '864 Patent by instructing third parties to author applications compatible with Apple's iOS or Google's Android operating systems on these Defendants' behalf, knowing and specifically intending that Apple's Xcode or Google's Android Studio will be used in an infringing manner to author the mobile applications.

140. In addition to direct infringement, Defendant Apple also indirectly infringes the '864 Patent. Apple has induced third parties, including its co-Defendants, to infringe the '864 Patent by using Xcode in an infringing manner.

141. Defendants will continue to infringe unless this Court enjoins Defendants and their agents, servants, employees, representatives, and all others acting in active concert with Defendants from infringing the ’864 Patent.

142. At least by the filing date of this Complaint, Defendants Capital One and Frost were aware of the infringement allegations regarding the ’864 Patent contained herein.

143. At least by the filing date of this Complaint, Defendants Capital One and Frost have knowingly engaged in the willful destruction of WAPP’s business as a whole, caused the loss of goodwill related to WAPP’s business, diminished the viability of WAPP’s business as a whole, and these Defendants’ actions have had an injurious effect on the property of WAPP, including its intellectual property and the ’864 Patent.

144. Defendants Capital One’s and Frost’s infringement of the ’864 Patent, at least since the filing of this Complaint, is deliberate and willful. Defendants Capital One and Frost have had knowledge of the Patents-in-Suit and their infringement at least since the filing of this Complaint. These Defendants’ continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs’ patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys’ fees pursuant to 35 U.S.C. §§ 284-285.

145. On information and belief, Defendant Apple has had knowledge of the ’864 Patent since at least the date the ’864 Patent issued and has known that Xcode infringes the ’864 Patent since at least the date the ’864 Patent issued. Apple was contacted on multiple occasions by persons representing Wapp between 2011 through 2014 regarding Wapp’s patent portfolio, and based on those communications, on information and belief, Apple reviewed and continued to monitor Wapp’s patent portfolio, thereby becoming aware of the ’864 Patent when it issued.

Apple was again made aware of the ’864 Patent and was informed of Wapp’s infringement allegations regarding Xcode by virtue of the multiple subpoenas served on Apple by Wapp in connection with the Wells Fargo Suit, the BoA Suit, and the Chase Suit. Accordingly, Apple knows of the ’864 Patent and knows that it infringes the ’864 Patent.

146. Apple has knowingly engaged in the willful destruction of WAPP’s business as a whole, caused the loss of goodwill related to WAPP’s business, diminished the viability of WAPP’s business as a whole, and Apple’s actions have had an injurious effect on the property of WAPP, including its intellectual property and the ’864 Patent.

147. Apple’s infringement of the ’864 Patent is deliberate and willful. Apple’s prior and continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs’ patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys’ fees pursuant to 35 U.S.C. §§ 284-285.

148. As a result of Defendants’ infringement of the ’864 Patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Defendants’ infringement, but in no event less than a reasonable royalty with interest and costs.

COUNT III

Infringement of U.S. Patent No. 9,971,678

149. Plaintiffs incorporate the paragraphs above herein by reference.

150. Defendants without authorization have been and are directly infringing at least Claim 1 of the ’678 Patent.

151. Defendants Capital One and Frost infringe at least Claim 1 of the ’678 Patent when their employees or agents use Apple’s Xcode or Google’s Android Studio (and potentially other software development tools) to author mobile applications.

152. Defendant Apple directly infringes at least Claim 1 of the ’678 Patent when it makes, uses,

offers to sell and sells its Xcode Development Tools.

153. In addition to direct infringement, Defendants Capital One and Frost also indirectly infringe the ’678 Patent. On information and belief, Defendants Capital One and Frost have induced third parties to author mobile applications on their behalf using Apple’s Xcode or Google’s Android Studio. Defendants Capital One and Frost knowingly encourage and intend to induce infringement of the ’678 Patent by instructing third parties to author applications compatible with Apple’s iOS or Google’s Android operating systems on these Defendants’ behalf, knowing and specifically intending that Apple’s Xcode or Google’s Android Studio will be used in an infringing manner to author the mobile applications.

154. In addition to direct infringement, Defendant Apple also indirectly infringes the ’678 Patent. Apple has induced third parties, including its co-Defendants, to infringe the ’678 Patent by using Xcode in an infringing manner.

155. Defendants will continue to infringe unless this Court enjoins Defendants and their agents, servants, employees, representatives, and all others acting in active concert with Defendants from infringing the ’678 Patent.

156. At least by the filing date of this Complaint, Defendants Capital One and Frost were aware of the infringement allegations regarding the ’678 Patent contained herein.

157. At least by the filing date of this Complaint, Defendants Capital One and Frost have knowingly engaged in the willful destruction of WAPP’s business as a whole, caused the loss of goodwill related to WAPP’s business, diminished the viability of WAPP’s business as a whole, and these Defendants’ actions have had an injurious effect on the property of WAPP, including its intellectual property and the ’678 Patent.

158. Defendants Capital One’s and Frost’s infringement of the ’678 Patent, at least since the

filing of this Complaint, is deliberate and willful. Defendants have had knowledge of the Patents-in-Suit and their infringement at least since the filing of this Complaint. These Defendants' continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs' patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

159. On information and belief, Defendant Apple has had knowledge of the '678 Patent since at least the date the '678 Patent issued and has known that Xcode infringes the '678 Patent since at least the date the '678 Patent issued. Apple was contacted on multiple occasions by persons representing Wapp between 2011 through 2014 regarding Wapp's patent portfolio, and based on those communications, on information and belief, Apple reviewed and continued to monitor Wapp's patent portfolio, thereby becoming aware of the '678 Patent when it issued. Apple was again made aware of the '678 Patent and was informed of Wapp's infringement allegations regarding Xcode by virtue of the multiple subpoenas served on Apple by Wapp in connection with the Wells Fargo Suit, the BoA Suit, and the Chase Suit. Accordingly, Apple knows of the '678 Patent and knows that it infringes the '678 Patent.

160. Apple has knowingly engaged in the willful destruction of WAPP's business as a whole, caused the loss of goodwill related to WAPP's business, diminished the viability of WAPP's business as a whole, and Apple's actions have had an injurious effect on the property of WAPP, including its intellectual property and the '678 Patent.

161. Apple's infringement of the '678 Patent is deliberate and willful. Apple's prior and continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs' patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

162. As a result of Defendants' infringement of the '678 Patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty with interest and costs.

COUNT IV

Infringement of U.S. Patent No. 10,353,811

163. Plaintiffs incorporate the paragraphs above herein by reference.

164. Defendants without authorization have been and are directly infringing at least Claim 1 of the '811 Patent.

165. Defendants Capital One and Frost infringe at least Claim 1 of the '811 Patent when their employees or agents use Apple's Xcode or Google's Android Studio (and potentially other software development tools) to author mobile applications.

166. Defendant Apple directly infringes at least Claim 1 of the '811 Patent when it makes, uses, offers to sell and sells its Xcode Development Tools.

167. In addition to direct infringement, Defendants Capital One and Frost also indirectly infringe the '811 Patent. On information and belief, Defendants Capital One and Frost have induced third parties to author mobile applications on their behalf using Apple's Xcode or Google's Android Studio. Defendants Capital One and Frost knowingly encourage and intend to induce infringement of the '811 Patent by instructing third parties to author applications compatible with Apple's iOS or Google's Android operating systems on these Defendants' behalf, knowing and specifically intending that Apple's Xcode or Google's Android Studio will be used in an infringing manner to author the mobile applications.

168. In addition to direct infringement, Defendant Apple also indirectly infringes the '811 Patent. Apple has induced third parties, including its co-Defendants, to infringe the '811 Patent by using Xcode in an infringing manner.

169. Defendants will continue to infringe unless this Court enjoins Defendants and their agents, servants, employees, representatives, and all others acting in active concert with Defendants from infringing the ’811 Patent.

170. At least by the filing date of this Complaint, Defendants Capital One and Frost were aware of the infringement allegations regarding the ’811 Patent contained herein.

171. At least by the filing date of this Complaint, Defendants Capital One and Frost have knowingly engaged in the willful destruction of WAPP’s business as a whole, caused the loss of goodwill related to WAPP’s business, diminished the viability of WAPP’s business as a whole, and these Defendants’ actions have had an injurious effect on the property of WAPP, including its intellectual property and the ’811 Patent.

172. Defendants Capital One’s and Frost’s infringement of the ’811 Patent, at least since the filing of this Complaint, is deliberate and willful. Defendants Capital One and Frost have had knowledge of the Patents-in-Suit and their infringement at least since the filing of this Complaint. These Defendants’ continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs’ patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys’ fees pursuant to 35 U.S.C. §§ 284-285.

173. On information and belief, Defendant Apple has had knowledge of the ’811 Patent since at least the date the ’811 Patent issued and has known that Xcode infringes the ’811 Patent since at least the date the ’811 Patent issued. Apple was contacted on multiple occasions by persons representing Wapp between 2011 through 2014 regarding Wapp’s patent portfolio, and based on those communications, on information and belief, Apple reviewed and continued to monitor Wapp’s patent portfolio, thereby becoming aware of the ’811 Patent when it issued.

Apple was again made aware of the ’811 Patent and was informed of Wapp’s infringement allegations regarding Xcode by virtue of the multiple subpoenas served on Apple by Wapp in connection with the Wells Fargo Suit, the BoA Suit, and the Chase Suit. Accordingly, Apple knows of the ’811 Patent and knows that it infringes the ’811 Patent.

174. Apple has knowingly engaged in the willful destruction of WAPP’s business as a whole, caused the loss of goodwill related to WAPP’s business, diminished the viability of WAPP’s business as a whole, and Apple’s actions have had an injurious effect on the property of WAPP, including its intellectual property and the ’811 Patent.

175. Apple’s infringement of the ’811 Patent is deliberate and willful. Apple’s prior and continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs’ patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys’ fees pursuant to 35 U.S.C. §§ 284-285.

176. As a result of Defendants’ infringement of the ’811 Patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Defendants’ infringement, but in no event less than a reasonable royalty with interest and costs.

COUNT V

Infringement of U.S. Patent No. 10,691,579

177. Plaintiffs incorporate the paragraphs above herein by reference.

178. Defendants without authorization have been and are directly infringing at least Claim 15 of the ’579 Patent.

179. Defendants Capital One and Frost infringe at least Claim 15 of the ’579 Patent when their employees or agents use Apple’s Xcode or Google’s Android Studio (and potentially other software development tools) to author mobile applications.

180. Defendant Apple directly infringes at least Claim 15 of the ’579 Patent when it makes,

uses, offers to sell and sells its Xcode Development Tools.

181. In addition to direct infringement, Defendants Capital One and Frost also indirectly infringe the ’579 Patent. On information and belief, Defendants Capital One and Frost have induced third parties to author mobile applications on their behalf using Apple’s Xcode or Google’s Android Studio. Defendants Capital One and Frost knowingly encourage and intend to induce infringement of the ’579 Patent by instructing third parties to author applications compatible with Apple’s iOS or Google’s Android operating systems on these Defendants’ behalf, knowing and specifically intending that Apple’s Xcode or Google’s Android Studio will be used in an infringing manner to author the mobile applications.

182. In addition to direct infringement, Defendant Apple also indirectly infringes the ’579 Patent. Apple has induced third parties, including its co-Defendants, to infringe the ’579 Patent by using Xcode in an infringing manner.

183. Defendants will continue to infringe unless this Court enjoins Defendants and their agents, servants, employees, representatives, and all others acting in active concert with Defendants from infringing the ’579 Patent.

184. At least by the filing date of this Complaint, Defendants Capital One and Frost were aware of the infringement allegations regarding the ’579 Patent contained herein.

185. At least by the filing date of this Complaint, Defendants Capital One and Frost have knowingly engaged in the willful destruction of WAPP’s business as a whole, caused the loss of goodwill related to WAPP’s business, diminished the viability of WAPP’s business as a whole, and these Defendants’ actions have had an injurious effect on the property of WAPP, including its intellectual property and the ’579 Patent.

186. Defendants Capital One’s, and Frost’s infringement of the ’579 Patent, at least since the

filing of this Complaint, is deliberate and willful. Defendants have had knowledge of the Patents-in-Suit and their infringement at least since the filing of this Complaint. These Defendants' continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs' patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

187. On information and belief, Defendant Apple has had knowledge of the '579 Patent since at least the date the '579 Patent issued and has known that Xcode infringes the '579 Patent since at least the date the '579 Patent issued. Apple was contacted on multiple occasions by persons representing Wapp between 2011 through 2014 regarding Wapp's patent portfolio and based on those communications, on information and belief, Apple reviewed and continued to monitor Wapp's patent portfolio, thereby becoming aware of the '579 Patent when it issued. Apple was again made aware of the '579 Patent and was informed of Wapp's infringement allegations regarding Xcode by virtue of the multiple subpoenas served on Apple by Wapp in connection with the Wells Fargo Suit, the BoA Suit, and the Chase Suit. Accordingly, Apple knows of the '579 Patent and knows that it infringes the '579 Patent.

188. Apple has knowingly engaged in the willful destruction of WAPP's business as a whole, caused the loss of goodwill related to WAPP's business, diminished the viability of WAPP's business as a whole, and Apple's actions have had an injurious effect on the property of WAPP, including its intellectual property and the '579 Patent.

189. Apple's infringement of the '579 Patent is deliberate and willful. Apple's prior and continued infringement is deliberate, wanton and egregious, with reckless disregard for Plaintiffs' patent rights. This is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284-285.

190. As a result of Defendants' infringement of the '579 Patent, Plaintiffs have suffered monetary damages, and seek recovery in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty with interest and costs.

PRAYER FOR RELIEF

WHEREFORE, WAPP prays for judgment against Defendants as follows:

191. A judgment in favor of WAPP that Defendants have infringed and are infringing, either literally and/or under the doctrine of equivalents, the Patents-in-Suit;

192. A judgment in favor of WAPP that Defendants' infringement has been and continues to be willful;

193. An Order permanently enjoining Defendants, their respective officers, agents, employees, and those acting in privity with them, from further infringement of the Patents-in-Suit;

194. An award of damages to WAPP arising out of Defendants' infringement of the Patents-in-Suit, including supplemental damages for any continuing post-verdict infringement up until entry of the final judgment, with an accounting, as needed, and enhanced damages pursuant to 35 U.S.C. § 284, together with prejudgment and post-judgment interest, in an amount according to proof;

195. An award of an ongoing royalty for Defendants' post-judgment infringement in an amount according to proof in the event that a permanent injunction preventing future acts of infringement is not granted;

196. An award of attorneys' fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law; and

197. Granting WAPP its costs and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

198. Pursuant to Federal Rule of Civil Procedure 38(b), WAPP hereby demands a trial by jury

on all issues triable by jury.

Dated: March 6, 2025

Respectfully submitted,

/s/ Leslie V. Payne

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