

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

WAPP TECH LIMITED
PARTNERSHIP and
WAPP TECH CORP.,

Plaintiffs

v.

BANK OF AMERICA CORP.,

Defendant

Civil Action No.: 4:18-cv-519

JURY TRIAL DEMANDED

PLAINTIFFS' ORIGINAL COMPLAINT

Plaintiffs Wapp Tech Limited Partnership and Wapp Tech Corp. (“Plaintiffs”) file this Complaint against Defendant Bank of America Corp. (“Defendant” or “Bank of America”) seeking damages and other relief for patent infringement, and allege with knowledge of their own acts, and on information and belief as to all other matters, as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. §§ 1, et seq.
2. Plaintiffs seek damages for Defendant’s infringement of the Patents-in-Suit, as defined below.
3. The Patents-in-Suit and their underlying patent applications have been cited by over 30 issued United States patents and published patent applications. Moreover, the World Intellectual Property Association (hereafter “WIPO”) has also cited Plaintiffs’ Patent Portfolio,

see details below, giving it the highest prior art designation, in rejecting Hewlett-Packard Company's ("HPE" or "HP") patent application filing related to mobile application development.

PARTIES

4. 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.

5. Plaintiff Wapp Tech Corp. ("WTC") 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.

6. Defendant Bank of America Corp. is a corporation organized under the laws of the state of Delaware and maintains its principal place of business in Charlotte, North Carolina.

7. Defendant does business in Texas, directly or through intermediaries, and offers products or services to customers and potential customers located in Texas, including in the Eastern District of Texas.

JURISDICTION AND VENUE

8. On information and belief, Defendant is registered to do business in the State of Texas, with a Texas Taxpayer Number of 15609066095.

9. On information and belief, Defendant conducts business operations throughout the State of Texas, and within the Eastern District of Texas. Defendant has multiple locations through the State of Texas, and within the Eastern District of Texas, including banking facilities located at:

- 5701 Legacy Drive, Plano, TX 75024
- 5952 West Parker Road, Plano, TX 75093
- 1925 Dallas Parkway, Plano, TX 75093
- 3760 Highway 121, Plano, TX 75025
- 3260 Preston Road, Plano, TX 75093
- 7001 Independence Parkway, Plano, TX 75025
- 2015 Coit Road, Plano, TX 75075
- 2400 North Central Expressway, Plano, TX 75074
- 113 East FM 544, Plano, TX 75094

10. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a). Venue is proper under 28 U.S.C. §§ 1391(a) & (c), and 1400(b).

INTRODUCTION

11. The inspiration for the pioneering patented innovations described herein originates from application development work associated with the 2006 FIFA World Cup sponsored by Adobe and Nokia. The FIFA World Cup is the largest single-event sporting competition in the world with fans simultaneously accessing the World Cup app from millions of mobile devices around the globe. Through its development work associated with this international sporting event, the principal inventor of the Patents-in-Suit developed and created its patented performance engineering platform. Application performance engineering enables software design and testing before it is published to a consumer by simulating real-world conditions for app developers while in the development phase, including device and network virtualization, virtual user modeling and the ability to virtually perform stress and load tests based on modeling human interaction (hereafter “Performance Engineering Innovations”).

12. Licensed products incorporating the Performance Engineering Innovations have won numerous industry awards for mobile application development, including multiple JOLT Awards and other industry leading awards for market breakout products.

13. Patents related to the Performance Engineering Innovations have been licensed by a Fortune 500 leader in enterprise software in a multi-million-dollar license.

14. In addition, patents in the Plaintiffs' Patent Portfolio, defined below, have been cited against a number of industry-leading companies as prior art by the United States Patent and Trademark Office (hereafter "USPTO") and WIPO. These companies include:

- Hewlett-Packard
- Apple
- Samsung
- Microsoft
- Google
- Vodafone
- Intuit
- Avaya
- Intel
- Amazon
- HTC
- Nextbit Systems
- CA
- Facebook
- Barco
- Razor
- Adobe

MICRO FOCUS & HPE

15. Certain Micro Focus software products that are used by Defendant are alleged herein to infringe the Patents-in-Suit.

16. On information and belief, Micro Focus and HPE completed a spin-out merger of a software group on September 1, 2017. Following the spin-out merger, the term "Micro Focus" replaced the term "HPE" in the names of various software products. For example, HPE

LoadRunner became Micro Focus LoadRunner, HPE Performance Center became Micro Focus Performance Center, etc.

17. On information and belief, functionality of relevant software products remained consistent following the spin-out merger. Consequently, where HPE documentation is cited below, it is to be understood that, on information and belief, the referenced functionality also exists in the corresponding Micro Focus software products.

18. HPE filed Patent Application Ser. No. PCT/US2012/024087 with WIPO on February 7, 2012.

19. HPE filed Patent Application Ser. No. PCT/US2012/024087 with WIPO in an apparent attempt to protect its soon to be released HP 2012 software suite that included mobile application testing.

20. On October 31, 2012, WIPO rejected all of the claims in HPE's Patent Application Ser. No. PCT/US2012/024087 as being anticipated solely by U.S. Patent No. 7,813,910 ("the '910 Patent," which is a part of Plaintiffs' Patent Portfolio and a parent of the Patents-in-Suit) after conducting a patent search, and in the process awarded the '910 Patent the highest prior art designation (hereafter "WIPO Patent Rejection"). *See* Exhibit H (Written Opinion of the International Searching Authority for International Patent Application Ser. No. PCT/US2012/024087, rejecting all claims over the '910 Patent (which WIPO designated as reference "D1.")).

21. On June 12, 2014, WIPO sent an additional supplementary notice to HPE under Rule 47.1(c)) stating that under Article 22(1) that the communication of the international

application will be affected across all 185 member states, including the United States Patent and Trademark Office.¹

22. Based on the global WIPO Patent Rejection of HPE's patent application filing in October of 2012, and the repeated and supplemental notices from WIPO under Article 22(1) regarding HPE's rejected WIPO patent application, HPE has had actual notice of Plaintiffs' Patent Portfolio.

23. Notwithstanding the aforementioned WIPO Patent Rejection of HPE's patent application based on the '910 Patent, the initial and supplemental WIPO notices and its actual knowledge of Plaintiffs' prior patent rights in the mobile performance engineering space, HPE proceeded with commercialization and sales of the HP LoadRunner and HP Performance Center 11.50 offerings in 2012, and with the follow up launch of HP LoadRunner and HP Performance Center 12.0 offerings for "Mobile and Cloud-based Application Testing" in March of 2014, including the subsequent release of HP StormRunner Load in September of 2014 as part of the HP Performance Testing Suite² and the follow up release of HP Mobile Center in October of 2014³, among other additional mobile product offerings. As noted above, after the HPE-Micro Focus spin-out merger, these product offerings were renamed using the term Micro Focus, and therefore they are hereafter referred to as "Micro Focus Software Suite".⁴

¹https://patentscope.wipo.int/search/docservicepdf_pct/id00000025143112/IB308/WO2013119205.pdf?psAuth=mMniZixkvHdFvRyOgxrg3IdDA3uV2jaWveIbtORTsgg (accessed June 27, 2018).

² PALO ALTO, Calif. In a Press Release dated September 15, 2014 the Defendant stated the following: "HP today expanded the HP Performance Testing Suite with a new software solution focused on helping Agile development teams accelerate application quality and delivery via a simple, intuitive and scalable cloud-based platform.

HP StormRunner Load joins HP's existing performance testing solutions, which include HP LoadRunner and HP Performance Center. The modern enterprise faces a perfect storm of changes that are driving the need for a completely new approach to application delivery and testing. Businesses must develop applications that can instantly operate across a wide variety of platforms including thousands, or millions, of mobile devices." Source: <http://www8.hp.com/us/en/hp-news/press-release.html?id=1791344#.WyqigFVKguU> (accessed June 27, 2018)

³ <http://www8.hp.com/ca/en/hp-news/press-release.html?id=1825600#.Wy0Um1VKguU> (accessed June 27, 2018)

⁴ <https://web.archive.org/web/20141205174207/http://www8.hp.com/us/en/software-solutions/mobile-testing/> (accessed June 27, 2018)

24. On information and belief, Defendant has been and continues to be a customer of HPE and/or Micro Focus.

25. Defendant is currently seeking a “Performance Test Engineer” in Plano, Texas. Among the “Required Skills” for this position is “[s]trong experience in LoadRunner.” Exhibit I.

26. Defendant has been making and/or using (including for testing purposes) and continues to make and/or use (including for testing purposes) systems for testing an application for a mobile device, the system for testing (“Accused System”) including and not limited to the Micro Focus Software Suite, which includes LoadRunner. *See* attached Claim Chart for the ’678 Patent at Exhibit 4, citing Exhibits A–G; attached Claim Chart for the ’864 Patent at Exhibit 5, citing Exhibits A–G; attached Claim Chart for the ’192 Patent at Exhibit 6, citing Exhibits A–G.

TECHNOLOGY BACKGROUND

NETWORK VIRTUALIZATION

27. On information and belief, to simulate mobile networks from any geographic location worldwide for mobile application testing (hereafter “Network Virtualization”), Defendant’s use of the Accused System enables performance engineers “to virtualize real-world network conditions, analyze test results to detect and remediate performance bottlenecks before deployment and gain custom performance optimization recommendations.”⁵ Regarding predecessor versions of Micro Focus software product(s), HPE stated that “integrating [Network Virtualization] with your continuous integration testing process takes your automated CI [continuous integration] tests way beyond traditional functional testing and load testing, delivering to your developers timely actionable analytics and optimization recommendations.”⁶ Additionally,

⁵ <https://www.youtube.com/watch?v=IUznCBjocYw> (accessed June 25, 2018).

⁶ *Id.*⁷ *Id.*⁸ Micro Focus Network Virtualization for Mobile Data Sheet, Page 1 https://www.microfocus.com/media/data-sheet/network_virtualization_for_mobile_ds.pdf (accessed June 27, 2018).

HPE stated that “[Network Virtualization] is a vital tool for performance engineers...[and] is fully integrated with HPE LoadRunner, HPE Performance Center and HPE StormRunner Load...[and] HPE Mobile Center.”⁷

NETWORK PROFILES

28. On information and belief, as part of the Micro Focus Software Suite, Micro Focus provides a library of real-world mobile and broadband network conditions (hereafter “Network Profiles”), enabling its customers (including Defendant) to have access to a library of real-world data points of point-to-point network conditions recorded around the world. Micro Focus “provides a library of real-world mobile and broadband network conditions.”⁸ Further, “Network Virtualization for Mobile allows tests to be managed and results analyzed from any laptop or Wi-Fi-connected mobile device. The software can import real-world mobile network profiles captured by Micro Focus Network Capture or provided by the Micro Focus Network Virtualization Library of mobile and broadband network conditions.”⁹ Network Profiles and cloud-enabled technology has been described as bridging “the gap between development and deployment by enabling your mobile application development team to fully and accurately assess the behavior and impact of the network on mobile apps before they are introduced to end users. By virtualizing real-world mobile network conditions within testing environments, your test results are more reliably predictive of how an application will behave for end users.”¹⁰

⁷ *Id.*⁸ Micro Focus Network Virtualization for Mobile Data Sheet, Page 1 https://www.microfocus.com/media/data-sheet/network_virtualization_for_mobile_ds.pdf (accessed June 27, 2018).

⁸ Micro Focus Network Virtualization for Mobile Data Sheet, Page 1 https://www.microfocus.com/media/data-sheet/network_virtualization_for_mobile_ds.pdf (accessed June 27, 2018).

⁹ *Id.*

¹⁰ *Id.*

VuGEN AND THE VIRTUAL EVENT GENERATOR

29. On information and belief, to simulate virtual users to load test mobile applications (hereafter “Virtual Users” or “Vuser”) within the Micro Focus Software Suite, Micro Focus has offered and continues to offer a virtual event generator (hereafter “Virtual Event Generator”). The Virtual Event Generator is the “primary tool for creating testing scripts that emulate the behavior of real users on your system.”¹¹ A Virtual User is defined as scripts that replace “real users with virtual users...to emulate the actions of a human user”¹² for load testing. On information and belief, from a single workstation, Micro Focus has offered and continues to offer a controller to distribute “each Vuser in the scenario to a load generator. The load generator is the machine that executes the Vuser script, enabling the Vuser to emulate the actions of a human user.”¹³ The Vuser operates as a single thread process, enabling a single server or computer to emulate the actions of several 100 users to create load against a mobile application.

30. In March of 2014, HPE migrated its long-standing license model from a standard license to a cloud-based monetization model¹⁴ wherein customers (including Defendant) of an HPE Software Suite (and, subsequently, the Micro Focus Software Suite) would be charged on a per Virtual User basis over a 24-hour time period.¹⁵ The Micro Focus Software Suite has been offered for sale and is offered for sale based on a cloud-based monetization model.

¹¹ Micro Focus LoadRunner Help Center, https://admhelp.microfocus.com/lr/en/12.56-12.57/help/WebHelp/Content/VuGen/tocs/toc_MainVuGen.htm (accessed June 27, 2018)

¹² Micro Focus LoadRunner Help Center, https://admhelp.microfocus.com/lr/en/12.56-12.57/help/WebHelp/Content/Controller/c_terms_lr.htm (accessed June 27, 2018)

¹³ Micro Focus LoadRunner Help Center, *Id.*

¹⁴ <http://www8.hp.com/us/en/hp-news/press-release.html?id=1601722#.WzQUBdVKguV> (accessed June 27, 2018)

¹⁵ <https://software.microfocus.com/en-us/products/loadrunner-load-testing/pricing>; <https://software.microfocus.com/en-us/products/performance-center/pricing>; <https://software.microfocus.com/en-us/products/stormrunner-load-agile-cloud-testing/pricing> (accessed June 27, 2018)

TRUCLIENT AND SCRIPTED USER EVENT MODELING

31. On information and belief, to create Virtual Users to interact with scripted events to model human interaction with a native mobile application (hereafter “Scripted User Event Modeling”) within the Micro Focus Software Suite, Micro Focus has offered and continues to offer TruClient as a native mobile protocol that provided a way “to record and replay native mobile applications on both Android and iOS devices” to enable “the developer or DevOps engineer to record user interactions on the mobile application and create a TruClient script”¹⁶ (hereafter “Scripted User Event Modeling”) to simulate “multiple virtual users (Vusers)” during the load test’s execution.¹⁷ Additionally, “the script can be enhanced using standard TruClient functionality including parameterization, transactions and JavaScript coding.”¹⁸ Together with the [Micro Focus] Virtual User Suite of Products, this “protocol is meant for end-user performance testing...[and] completes the LoadRunner mobile performance testing suite.”¹⁹

STORMRUNNER LOAD

32. On information and belief, Micro Focus’s StormRunner product provides the ability to create a “real-world scenario by generating load from global cloud regions to emulate real networks during load tests.”²⁰ “StormRunner Load initializes on demand load generation machines in the private or public cloud”²¹ to dynamically “Scale from 1 tester to 2,000,000 or more geographically distributed”²² Virtual Users (hereafter “Cloud-based Load Server

¹⁶ <https://community.softwaregrp.com/t5/LoadRunner-and-Performance/Introduction-to-LoadRunner-s-new-TruClient-Native-Mobile/ba-p/269441#Wyg06FVKguV>

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ <https://software.microfocus.com/en-us/products/stormrunner-load-agile-cloud-testing/overview> (accessed June 27, 2018)

²¹ *Id.*

²² *Id.*

Modeling”). StormRunner provides a cloud-based performance testing solution that enables Agile development teams to ensure app scalability up to millions of distributed mobile users.²³

MICRO FOCUS MOBILE CENTER AND DEVELOPMENT SERVER

33. On information and belief, Defendant has used and continues to use Micro Focus Mobile Center, “a standalone server that provides mobile device access to different test applications. [Micro Focus] Mobile Center supports a distributed architecture where different test clients can all interact with the same Mobile Center server instance.”²⁴ On information and belief, Defendant has used and continues to use Micro Focus Mobile Center to gain an “accurate picture of the end-to-end mobile performance” by combining “virtual users and real devices” to run “elastic, and realistic tests from multiple geographies across various real-world network conditions”²⁵ and “mediates between the testing-tool client calls to mobile devices” by providing “a user interface within the testing tool for recording and running tests on real mobile devices”²⁶ (hereafter “Cloud-based Mobile Center”).

34. On information and belief, “Mobile Center is a core component of [the] mobile app development lifecycle” and is integrated with “Application Lifecycle Management (ALM), AppPulse Mobile, Business Process Monitoring, Business Process Testing, Fortify On Demand, LoadRunner, Network Virtualization (NV), Performance Center, Sprinter, StormRunner Load, UFT and UFT Pro”²⁷ (hereafter “Micro Focus Mobile Center Suite of Products”).²⁸

²³ *Id.*

²⁴ http://mobilecenterhelp.saas.hpe.com/docs/en/2.20/mobilecenter_help/Content/HPMC_architecture.htm (accessed June 27, 2018)

²⁵ <https://software.microfocus.com/en-us/products/mobile-testing/overview> (accessed June 27, 2018)

²⁶ http://mobilecenterhelp.saas.hpe.com/docs/en/2.20/mobilecenter_help/Content/HPMC_architecture.htm (accessed June 27, 2018)

²⁷ https://community.softwaregrp.com/t5/Quality-and-Testing-Blog/Introducing-Mobile-Center-2-5-improve-your-mobile-testing/ba-p/1593254#.Wyg_71VKguU (accessed June 27, 2018)

²⁸ <https://www.youtube.com/watch?v=6QyrWGSgq-c> (accessed June 27, 2018) and https://www.youtube.com/watch?v=FkJkIe1H_rM (accessed June 27, 2018)

FACTUAL ALLEGATIONS

PATENTS-IN-SUIT

35. Plaintiffs are the owner of all right, title and interest in and to U.S. Patent No. 9,971,678 (the “’678 Patent”, attached as Exhibit 1), entitled “Systems including device and network simulation for mobile application development,” issued on May 15, 2018.

36. Plaintiffs are the owner of all right, title and interest in and to U.S. Patent No. 9,298,864 (the “’864 Patent”, attached as Exhibit 2), entitled “System Including Network Simulation for Mobile Application Development,” issued on March 29, 2016.

37. Plaintiffs are the owner of all right, title and interest in and to U.S. Patent No. 8,924,192 (the “’192 Patent”, attached as Exhibit 3), entitled “Systems including network simulation for mobile application development and online marketplaces for mobile application distribution, revenue sharing, content distribution, or combinations thereof,” issued on December 30, 2014.

38. Together, the foregoing patents are referred to as the “Patents-in-Suit”. Plaintiffs are the assignee of the Patents-in-Suit and have all substantial rights to sue for infringement and collect past and future damages for the infringement thereof.

39. The foregoing patents, and any related patents in the family, are herein referred to collectively and individually as the “Plaintiffs’ Patent Portfolio” respectively.

DAMAGES, PLAINTIFFS’ PORTFOLIO, AND THE APP ECONOMY

40. Mobile apps and the tools to develop and test mobile apps have become paramount to the U.S. economy. According to a 2012 white paper released by renowned Dr. Michael Mandel titled the ‘App Economy’, the App Developer community represented the second largest IT segment in the United States in 2012 with over 466,000 jobs created in the U.S. economy alone,

up from nearly zero in 2008 when the App Store was initially launched (hereafter “App Economy”).²⁹

41. Plaintiffs’ goal has been to democratize app development for a new generation of developers by mitigating performance risks and reducing application development cycles from months down to minutes by virtue of new performance engineering modeling. At the time of Plaintiffs’ provisional patent filing in June of 2005, Apple had not launched the iPhone (June of 2007), there was no App Store (July of 2008), Google’s Android platform had not been released (September of 2008), the Samsung Galaxy family of devices had not been released (June of 2009) and the mobile app ecosystem that we know today was still in its infancy.

42. In Dr. Mandel’s App Economy white paper, the renowned economist contributes two driving innovations behind the App Economy: (a) the ease of app development; and (b) the ease of app delivery. With respect to the former, Plaintiffs’ Patent Portfolio describes many of the core innovations in modern application development that accelerate the development of applications and enhances the mobile device consumer experience on the client side.

43. In alignment with Dr. Mandel’s thesis concerning the importance of facilitating application development, the Plaintiffs’ patented technologies, with a focus on accelerating application development for performance engineers, helped to enable a new generation of app developers to lay the foundation for the emerging App Economy (hereafter “App Developers”).

44. App Developers play an integral role in the app ecosystem, and Plaintiffs’ patented innovations, with a focus on accelerating application development for performance engineers, have ushered in a new generation of smart developer tools and contributed significantly to the growth of the App Economy.

²⁹ <http://business.time.com/2012/02/08/the-app-economy-estimated-to-contribute-nearly-half-a-million-jobs-to-the-u-s/> (accessed June 27, 2018)

45. Application performance and access to data in the cloud are paramount to the user experience for a new generation of data hungry applications. Supporting this premise is a quote from HPE's Paul Whiten, Applications Business Unit Lead, stating that "We now live in a mobile and app-centric world, and the ability to deliver a consistent and enjoyable app experience has never been more important."³⁰ If a mobile application fails, 48% of users are less likely to ever use the app again. 34% of users will simply switch to a competitor's application and 31% of users will tell friends about their poor experience, which eliminates future customers.³¹ A change in latency from 2ms (broadband) to 400ms (3G network) can cause a mobile page load to go from 1 second to 30 seconds.³² Google reported that a mere 0.5 to 1.0-second increase in page load time resulted in a 20% decrease in traffic and revenue. The average U.S. retail mobile site loaded in 6.9 seconds in July of 2016, and according to the most recent data presented by Google, 40% of consumers will leave a page that takes longer than three seconds to load.³³

46. According to HPE's studies, "over 70% of the performance of a mobile app is dependent on the network,"³⁴ and in another study HPE further stated that "80% of the costs associated with application development occur in remediating failed or underperforming applications after deployment, when the ineffective application has already had a negative impact on the end user or customer experience."³⁵

47. In 2018, 52.2 percent of all website traffic worldwide was generated through a mobile device.³⁶ In the United States, not even Black Friday was immune from the influence of

³⁰ <http://www8.hp.com/ca/en/hp-news/press-release.html?id=1825600#.W0z1-tVKguV> (accessed July 16, 2018)

³¹ <https://www.marketingcharts.com/digital-27846> (accessed June 27, 2018)

³² <https://www.slideshare.net/xbosoft/mobile-network-performance-testing> (accessed June 27, 2018)

³³ <https://www.thinkwithgoogle.com/marketing-resources/experience-design/mobile-page-speed-load-time/> (accessed June 27, 2018)

³⁴ Exhibit A

³⁵ <http://media.shunra.com/datasheets/Shunra-NetworkCatcher.pdf> (accessed June 27, 2018)

³⁶ <https://www.statista.com/statistics/241462/global-mobile-phone-website-traffic-share/> (accessed June 27, 2018)

mobile as nearly 40% of sales on the traditional brick and mortar shopping day came from a mobile device. With 30% of all online shopping happening on mobile phones and with 89% of executives believing that customer experience will be their primary mode of competition, the consumer experience via a company's mobile app has never been so prevalent.³⁷

48. In a recent study released by Micro Focus, over 50 percent of respondents indicated the need to remediate at least four application production incidents per month and the average days required to resolve a production incident was six.³⁸ Micro Focus further stated that the average remediation cost per incident was \$88,000 USD and the highest reported cost was \$500,000 USD per incident.³⁹ Micro Focus stated that "it is important to note that this is the remediation cost alone; it is not an accounting of the total impact on the business."⁴⁰ A single security breach of a customer's financial banking information via a mobile app can cause a massive client exodus.

49. Millennials, in particular, are much less forgiving concerning their application experience and will unapologetically delete an app just because the logo is not appealing.⁴¹ It is safe to assume that a customer's bank finances are much more important to them than a logo. These facts suggests a shrinking margin of error for performance issues especially when it is considered that 67% of Millennials now use mobile banking as their primary engagement with their bank compared to 18% for those consumers aged 60 or over.⁴² In a recent study in the UK, Millennials now trust their App more than a teller at a brick and mortar bank, and 27% of

³⁷ <https://www.outerboxdesign.com/web-design-articles/mobile-ecommerce-statistics> (accessed June 27, 2018)

³⁸ Micro Focus The Value of Proactive Application Performance, <http://files.asset.microfocus.com/4aa6-6409/en/4aa6-6409.pdf> (accessed June 27, 2018)

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ <https://www.comscore.com/Insights/Blog/5-Interesting-Facts-About-Millennials-Mobile-App-Usage-from-The-2017-US-Mobile-App-Report> (accessed June 27, 2018)

⁴² https://www.federalreserve.gov/consumerscommunities/mobile_finance.htm

Millennials are now completely reliant on a mobile Banking App.⁴³ In the next 3-4 years, 33% of Millennials may choose to completely abandon traditional brick and mortar Banking in lieu of a mobile app.⁴⁴ With over 50% of the United States workforce projected to be made up of 'App First Millennials' by 2020,⁴⁵ it is clear why Micro Focus entered into the spin-out merger with HPE to move into the Mobile-first product model. The vast majority of Micro Focus's downstream clients (including Defendant) have also initiated a 'Mobile-First' strategy to 'mobilize' their customer base to engage a new era of app users and as a result, have relied on the mobile testing products offered by Micro Focus.

50. Defendant reported more than 25 million mobile active users in its most recent quarterly earnings statement attached hereto as Exhibit J.⁴⁶ Mobile banking users therefore represent over half of its approximately 46 million customers globally.⁴⁷ With this many users and with up to 90 percent of financial transactions now taking place online or through mobile banking, it is safe to assume that many users access the Defendant's bank app simultaneously (i.e., to check balances, make deposits or use a digital wallet), making stress testing crucial to application performance and to maintain user trust.⁴⁸ For banks, maintenance of trust is especially critical since a recent UK study determined that millennials now trust their banking application

⁴³ <https://www.salesforce.com/blog/2016/03/stats-about-millennials-mobile-banking.html> (accessed June 27, 2018)

⁴⁴ <https://www.temenos.com/en/market-insight/universal-insight/33-of-millennials-believe-they-wont-need-a-bank-at-all-in-5-years-we-think-different/> (accessed June 27, 2018)

⁴⁵ <https://www.forbes.com/workforce-2020/> (accessed June 27, 2018)

⁴⁶ Bank of America Quarterly Earnings Statement (2nd Qtr, 2018), <http://investor.bankofamerica.com/phoenix.zhtml?c=71595&p=irol-newsArticle&ID=2358330#fbid=GpPC4aTZy7Z> (accessed July 18, 2018)

⁴⁷ https://en.wikipedia.org/wiki/Bank_of_America, (accessed July 18, 2018)

⁴⁸ Millennials Help Accelerate Banking Evolution, <https://www.businessnhmagazine.com/article/millennials-help-accelerate-bankingamp39s-evolution>, (accessed July 16, 2018), see also <https://www.forbes.com/sites/forbestechcouncil/2017/05/16/mobile-banking-exploring-trends-for-market-leadership/#23643afe6962> (accessed July 16, 2018)

more than a teller at a brick and mortar bank, and 27% of millennials are now completely reliant on a mobile banking app.⁴⁹

ROYALTY DEMAND BY PLAINTIFFS

51. Banks, by the sheer volume and number of active daily users, would appear to have a significant need for virtual user and network virtualization testing now and in the future. With 72% of millennials now active users of mobile banking,⁵⁰ bringing with them their particular sensitivity around application performance, ensuring proper performance through testing to maintain trust is critical.

52. Further, with mobile phone sales expected to reach 2.1 billion units by 2019, or approximately one-third of the world's population,⁵¹ the pace of the growth in the number of mobile banking users driving this already unprecedented mobile demand will likely continue.

53. In light of the collective facts herein, specifically the network virtualization testing, the large number of simultaneous active daily users necessitating the virtual user testing that we believe Defendant is executing in violation of Plaintiff's Patent Portfolio, the high growth of overall financial transactions on mobile applications, the high percentage of millennials using mobile applications, and the steady growth of mobile phone sales, using a reasonable royalty rate, the patent royalties owed by Defendant to Plaintiffs are significant.

COUNT I

(Infringement of United States Patent No. 9,971,678)

54. Plaintiffs incorporate the paragraphs above herein by reference.

⁴⁹ <https://www.salesforce.com/blog/2016/03/stats-about-millennials-mobile-banking.html>, (accessed July 16, 2018)

⁵⁰ <https://www.temenos.com/en/market-insight/universal-insight/33-of-millennials-believe-they-wont-need-a-bank-at-all-in-5-years-we-think-different/> (accessed July 16, 2018)

⁵¹ *Id.*

55. On May 15, 2018, the United States Patent and Trademark Office (“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.

56. The ’678 Patent is presumed valid and enforceable.

57. Plaintiffs are the sole owner of the ’678 Patent.

58. Defendant without authorization has been and is directly infringing at least Claim 1 of the ’678 Patent, including making and/or using (including for testing purposes) and continues to make and/or use (including for testing purposes) the Accused System. *See* attached Claim Chart for the ’678 Patent at Exhibit 4, citing Exhibits A–G.

59. The ’678 Patent describes systems that address technical problems related to simulating network systems to determine performance of the mobile device. *See, e.g.*, ’678 Patent at col. 10, lines 34-44 [simulated network environment] to col. 13, line 47 [includes Figures 8 through 13].

60. The ’678 Patent describes systems that enable a performance engineer to view application performance data to mitigate performance risks. *See, e.g.*, ’678 Patent at col. 7, lines

29-40 and col. 8, lines 45-56 [profile data 110 is stored or displayed to identify performance of the application].

61. The '678 Patent describes systems that include providing a network model library of real-world mobile network characteristics, *see, e.g.*, '678 Patent at col. 2, lines 5-9 [geographical markets], col. 11, lines 49-59 and col. 12, lines 3-25 [Figure 9 and geographical map] to enable a user to import the network profiles, *see, e.g.*, '678 Patent at col. 12, lines 50-53 [import network profiles] into the testing environment, *see, e.g.*, '678 Patent at col. 10, lines 59-66 to col. 11, lines 1-14 [download network profiles].

62. 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 col. 2, lines 5-9, col. 11, lines 60-67 and col. 12, line 2.

63. The written description of the '678 Patent supports each of the elements of the claims, allowing a person of ordinary skill in the technical art ("POSITA") to understand what the elements cover and how the non-conventional and non-routine combination of claim elements differ markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, '678 Patent at col. 10, lines 34-44 [simulated network environment] to col. 13, line 47 [includes Figures 8 through 13].

64. The '678 Patent represents a substantial technical improvement in the area of simulating network systems to determine performance of the mobile device. As demonstrated by its frequent citation, Plaintiff's Performance Engineering Innovations have been cited over thirty times 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

Apple, Intel, Google, Adobe and Amazon. *See* <https://patents.google.com/patent/US9971678/en> (last accessed June 28, 2018). A larger listing of companies whose patents have cited Plaintiffs' Patent Portfolio is provided above in ¶ 15.

65. Viewed in light of the specification of the '678 Patent, the claims are *not directed* to basic tools of scientific and technological work, nor are they directed to a fundamental economic practice.

66. The '678 Patent claims are *not directed* to the use of an abstract mathematical formula on any general-purpose computer, or a purely conventional computer implementation of a mathematical formula, or generalized steps to be performed on a computer using conventional activity.

67. The '678 Patent claims are *not directed* to a method of organizing human activity or to a fundamental economic practice long prevalent in our system of commerce.

68. The '678 Patent *does not* take a well-known or established business method or process and apply it to a general-purpose computer.

69. As noted by United States Patents, foreign patent documents, and other publications cited by the '678 Patent, the '678 Patent *does not* preempt the field of its invention or preclude use of other methods and systems of simulating network systems to determine performance of the mobile device.

70. As a result of Defendant's infringement of the '678 Patent, Plaintiffs have suffered and will continue to suffer damages.

71. Defendant will continue to infringe unless this Court enjoins Defendant and its agents, servants, employees, representatives, and all others acting in active concert with Defendant from infringing the '678 Patent.

COUNT II

(Infringement of United States Patent No. 9,298,864)

72. Plaintiffs incorporate the paragraphs above herein by reference.

73. On March 29, 2016, the United States Patent and Trademark Office (“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.

74. The ’864 Patent is presumed valid and enforceable.

75. Plaintiffs are the sole owner of the ’864 Patent.

76. Defendant without authorization has been and is directly infringing at least Claim 1 of the ’864 Patent, including making and/or using (including for testing purposes) and continues to make and/or use (including for testing purposes) the Accused System. *See* attached Claim Chart for the ’864 Patent at Exhibit 5, citing Exhibits A–G.

77. The ’864 Patent describes systems that address technical problems related to simulating network systems to determine performance of the mobile device. *See, e.g.*, ’864 Patent at col. 9, line 60 through col. 10, line 3 [simulated network environment] to col. 13, line 4 [includes Figures 8 through 13].

78. The '864 Patent describes systems that simulate virtual users to load test mobile applications by using an event generator to create scripts to emulate and model human behavior to determine performance of either the network or the mobile application. *See, e.g.*, '864 Patent at col. 10, lines 57-65 [event generator + scripted effects], col 11, lines 7-17 [event generator + bandwidth], col. 11, lines 51-67 [scripted events + human interaction]. The '864 Patent further describes systems that enable the performance engineer to simulate real-world scenarios by generating load from multiple geographies to emulate real networks during load tests. *See, e.g.*, '864 Patent at col. 11, lines 51-67 [scripted events + consumer events + performance], Figures 9, 10, 11, 12 and 13, col. 12, lines 8-11 [storage 134] and col. 12, lines 18-22 [geographic locations].

79. The '864 Patent describes systems that enable the performance engineer to interact with the virtual users by providing scripts to record and replay user interactions on the mobile device to emulate real networks during load tests. *See, e.g.*, '864 Patent at col. 11, lines 51-67 [scripted events + consumer events + performance], Figures 12 [Load Server] and 13, col. 12, lines 8-11 [storage 134] and col. 12, lines 18-22 [geographic locations].

80. The '864 Patent describes systems that include a developer server that provides a library of mobile devices to enable the performance engineer to combine virtual users and real devices to run tests from multiple geographies across real-world network conditions. *See, e.g.*, '864 Patent at col. 2, lines 3-7 [mobile devices in geographical markets], col. 3, lines 4-7 [development server + Internet], col. 9, line 60 to col. 10, line 3 [developer server + mobile device, figures 8-13], col. 11, lines 18-27 [developer server + networks worldwide], and col. 12, lines 8-11 [storage 134].

81. The '864 Patent describes systems that enable a performance engineer to view application performance data to mitigate performance risks. *See, e.g.*, '864 Patent at col. 6, lines 46-57 [profile data 110 is stored or displayed to identify performance of the application].

82. 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 col. 2, lines 3-7 and col. 11, lines 18-27.

83. The written description of the '864 Patent supports each of the elements of the claims, allowing a person of ordinary skill in the technical art ("POSITA") to understand what the elements cover and how the non-conventional and non-routine combination of claim elements differ markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, '864 Patent at col. col. 9, line 60 to col. 10, line 3 [simulated network environment] to col. 13, line 3 [includes Figures 8 through 13].

84. The '864 Patent represents a substantial technical improvement in the area of mobile performance engineering. As demonstrated by its frequent citation, Plaintiff's Performance Engineering Innovations have been cited over thirty times 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 Apple, Intel, Adobe, Facebook, Ca, Amazon, Vodafone and Telecom Italia S.p.A. *See* <https://patents.google.com/patent/US9298864B2/en> (last accessed June 26, 2018). A larger listing of companies whose patents have cited Plaintiffs' Patent Portfolio is provided above in ¶ 15.

85. Viewed in light of the specification of the '864 Patent, the claims are *not directed* to basic tools of scientific and technological work, nor are they directed to a fundamental economic practice.

86. The '864 Patent claims are *not directed* to the use of an abstract mathematical formula on any general-purpose computer, or a purely conventional computer implementation of a mathematical formula, or generalized steps to be performed on a computer using conventional activity.

87. The '864 Patent claims are *not directed* to a method of organizing human activity or to a fundamental economic practice long prevalent in our system of commerce.

88. The '864 Patent *does not* take a well-known or established business method or process and apply it to a general-purpose computer.

89. As noted by United States Patents, foreign patent documents, and other publications cited by the '864 Patent, the '864 Patent *does not* preempt the field of its invention or preclude use of other methods and systems of simulating network systems in the area of mobile performance engineering.

90. As a result of Defendant's infringement of the '864 Patent, Plaintiffs have suffered and will continue to suffer damages.

91. Defendant will continue to infringe unless this Court enjoins Defendant and its agents, servants, employees, representatives, and all others acting in active concert with Defendant from infringing the '864 Patent.

COUNT III

(Infringement of United States Patent No. 8,924,192)

92. Plaintiffs incorporate the paragraphs above herein by reference.

93. 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. 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.

94. The ’192 Patent is presumed valid and enforceable.

95. Plaintiffs are the sole owner of the ’192 Patent.

96. Defendant without authorization has been and is directly infringing at least Claim 1 of the ’192 Patent, including making and/or using (including for testing purposes) and continues to make and/or use (including for testing purposes) the Accused System. *See* attached Claim Chart for the ’192 Patent at Exhibit 6, citing Exhibits A–G.

97. The ’192 Patent describes systems that address technical problems related to simulating network systems to determine performance of the mobile device. *See, e.g.*, ’192 Patent at col. 10, lines 15-25 [simulated network environment] to col. 13, line 23 [includes Figures 8 through 13].

98. The ’192 Patent describes systems that enable a performance engineer to view application performance data to mitigate performance risks. *See, e.g.*, ’192 Patent at col. 7, lines

14-25 and col. 8, lines 27-38 [profile data 110 is stored or displayed to identify performance of the application].

99. The '192 Patent describes systems that include providing a network model library of real-world mobile network characteristics, *see, e.g.*, '192 Patent at col. 2, lines 4-8 [geographical markets], col. 11, lines 28-38 and col. 11, line 49 to col. 12, line 2 [Figure 9] to enable a user to import the network profiles, *see, e.g.*, '192 Patent at col. 12, lines 28-31 [import network profiles] into the testing environment, *see, e.g.*, '192 Patent at col. 10, lines 40-47 to col. 10, lines 51-62 [download network profiles].

100. 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 col. 2, lines 4-8 and col. 11, lines 39-48.

101. The written description of the '192 Patent supports each of the elements of the claims, allowing a person of ordinary skill in the technical art ("POSITA") to understand what the elements cover and how the non-conventional and non-routine combination of claim elements differ markedly from and improved upon what may have been considered conventional, generic, or routine. *See, e.g.*, '192 Patent at col. 10, lines 15-25 [simulated network environment] to col. 13, line 23 [includes Figures 8 through 13].

102. The '192 Patent represents a substantial technical improvement in the area of simulating network systems to determine performance of the mobile device. As demonstrated by its frequent citation, Plaintiff's Performance Engineering Innovations have been cited over thirty times 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, Apple, Adobe, Amazon, and Intel. *See* <https://patents.google.com/patent/US8924192B1/en> (last accessed June 26, 2018). A larger listing of companies whose patents have cited Plaintiffs' Patent Portfolio is provided above in ¶ 15.

103. Viewed in light of the specification of the '192 Patent, the claims are *not directed* to basic tools of scientific and technological work, nor are they directed to a fundamental economic practice.

104. The '192 Patent claims are *not directed* to the use of an abstract mathematical formula on any general-purpose computer, or a purely conventional computer implementation of a mathematical formula, or generalized steps to be performed on a computer using conventional activity.

105. The '192 Patent claims are *not directed* to a method of organizing human activity or to a fundamental economic practice long prevalent in our system of commerce.

106. The '192 Patent *does not* take a well-known or established business method or process and apply it to a general-purpose computer.

107. As noted by United States Patents, foreign patent documents, and other publications cited by the '192 Patent, the '192 Patent *does not* preempt the field of its invention or preclude use of other methods and systems of simulating network systems to determine performance of the mobile device.

108. As a result of Defendant's infringement of the '192 Patent, Plaintiffs have suffered and will continue to suffer damages.

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

RELIEF REQUESTED

WHEREFORE, Plaintiffs respectfully request that the Court:

- A. Enter judgment that Defendant has infringed and continues to infringe one or more claims of the '678 Patent literally or under the doctrine of equivalents;
- B. Enter judgment that Defendant has infringed and continues to infringe one or more claims of the '864 Patent literally or under the doctrine of equivalents;
- C. Enter judgment that Defendant has infringed and continues to infringe one or more claims of the '192 Patent literally or under the doctrine of equivalents;
- D. Award Plaintiffs past damages, to be paid by Defendant, in an amount no less than a reasonable royalty and adequate to compensate Plaintiffs for such damages, together with pre-judgment and post-judgment interest for Defendant's infringement of the '678 Patent, the '864 Patent and the '192 Patent through the date that such judgment is entered in accordance with 35 U.S.C. §284, and increase such award by up to three times the amount found or assessed in accordance with 35 U.S.C. §284;
- E. Enjoin Defendant from continuing to infringe the '678 Patent, the '864 Patent, and the '192 Patent;
- F. Declare this case exceptional under 35 U.S.C. §285; and
- G. Award Plaintiffs their costs, disbursements, attorneys' fees, and such further and additional relief as is deemed appropriate by this Court.

JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiffs hereby demand a trial by jury on all issues so triable.

Dated: July 20, 2018

Respectfully Submitted,

/s/ Jeffrey G. Toler

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