

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
TYLER DIVISION**

**CUMBERLAND SYSTEMS LLC,**

Plaintiff,

v.

**VERIZON COMMUNICATIONS INC.,**

Defendant.

**CIVIL ACTION NO 6:17-cv-278**

**JURY TRIAL DEMANDED**

**ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT**

1. This is an action for patent infringement in which Cumberland Systems LLC makes the following allegations against Verizon Communications Inc.

**PARTIES**

2. Plaintiff Cumberland Systems LLC (“Plaintiff”) is a Texas limited liability company with its principal place of business at 6800 Weiskopf Avenue, Suite 150, McKinney, TX 75070.

3. On information and belief, Verizon Communications Inc. (“Defendant” or “Verizon”) is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York.

**JURISDICTION AND VENUE**

4. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. Venue is proper in this district under 28 U.S.C. §§ 1391(c) and 1400(b). On information and belief, Defendant has transacted business in this district, and has committed and/or induced acts of patent infringement in this district.

6. On information and belief, Defendant is 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 its substantial business in this forum, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in Texas and in this Judicial District.

**COUNT I**  
**INFRINGEMENT OF U.S. PATENT NO. 8,023,647**

7. Plaintiff is the owner of United States Patent No. 8,023,647 ("the '647 patent") entitled "Password self encryption method and system and encryption by keys generated from personal secret information." The '647 Patent issued on September 20, 2011. A true and correct copy of the '647 Patent is attached as Exhibit A.

8. Defendant owns, uses, operates, advertises, controls, sells, and otherwise provides products and/or services that infringe the '647 patent. The '647 patent provides, among other things, "A method comprising: submitting a user identification for a user from a user computer to a server computer; receiving a set of information at the user computer from the server computer, in response to the submission of the user identification for the user; wherein the set of information includes a parameter of a key; and further comprising using the user computer to convert user confidential information to a number  $x$ , wherein the number  $x$  is dependent on the user confidential information; using the user computer to compute a number  $e$  which is a function of  $x$  and which is a function of the user confidential information; using the user computer to pad the number  $x$  to convert  $x$  to  $X_p$ ; using the user computer to encrypt  $x_p$  by using the parameter of the key and the number  $e$  to form a cipher  $C$ , wherein  $C$  is a function of the user confidential information; and submitting the cipher  $C$  from the user computer to the server computer."

9. Defendant directly and/or through intermediaries, made, has made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or services that infringed one or more claims of the '647 patent, including at least Claim 1, in this district and elsewhere in the United States. Particularly, the Defendant's use of Keeper Security software infringes the '647 patent. By making, using, importing, offering for sale, and/or selling such

products and services, and all like products and services, Defendant has injured Plaintiff and is thus liable for infringement of the '647 patent pursuant to 35 U.S.C. § 271.

10. Based on present information and belief, Verizon submits a user identification for a user from a user computer to a server computer. For example, Verizon employees utilize Keeper password manager and digital vault software for storing, managing and sharing passwords amongst its employees. While using Keeper for sharing confidential information, including passwords stored as Keeper Records, Verizon's employees submit user identification from a user computer to a server computer. This user identification is submitted in the form of user email address and a hash of the user's Master Password. Further, upon information and belief, Verizon may use a multi-factor authentication supported by Keeper, where a Verizon employee submits a user identification from a user computer, the user identification being a combination of user email address, hash of user Master Password and a time-based one-time-password (TOTP). Further, upon information and belief, Verizon owns both the user computer(s) and the server computer(s).

11. Based on present information and belief, Verizon receives a set of information at the user computer, wherein the set of information includes a parameter of a key. For example, Verizon employees use Keeper to store, manage and share Keeper Records containing one or more passwords. Further, when a Verizon employee signs into Keeper and receives access to a shared folder containing Keeper Records, the Verizon employee receives a set of information including a shared folder key and/or a team key.

12. Based on information and belief, Verizon uses a user computer to convert user confidential information to a number  $x$ , which is dependent on the user confidential information. For example, Verizon employees use the Keeper application on their computers to create, store, manage and share user confidential information such as usernames and passwords. Specifically, Keeper allows users to create Keeper Records, wherein each Keeper Record stores at least a username and password. Further, Keeper encrypts each Keeper Record using the user's data key. Keeper also encrypts the user's data key with the user's Master Password. Encryption techniques used by Keeper (including PBKDF2, AES and RSA) necessarily include converting information being encrypted into a number dependent on the information being encrypted. For example, PBKDF2 requires that an HMAC be calculated for the user confidential information.

13. Based on present information and belief, Verizon uses the user computer to compute a number  $e$  which is a function of  $x$  and which is a function of the user confidential information. For example, Verizon employees use the user computer to encrypt Keeper Records with a data key using AES-256 and PBKDF2 encryption algorithms – wherein these algorithms involve computing a number  $e$  which is a function of the number  $x$  above. For example, in the specifications for the PBKDF2 algorithm, numbers such as  $T_i$  and  $mk$  are computed from the HMAC calculations (that from the claimed number  $x$ ).

14. Based on present information and belief, Verizon uses the user computer to pad the number  $x$  to convert  $x$  to  $x_p$ . For example, Verizon employees use their user computer to pad the MAC of the Keeper Record up to 256 bits as required by the AES-256 encryption and PBKDF2 with HMAC-SHA256 algorithms.

15. Based on present information and belief, Verizon uses the user computer to encrypt  $x_p$  by using the parameter of the key and the number  $e$  to form a cipher  $C$ , wherein  $C$  is a function of the user confidential information. For example, Verizon employees use their user computer to encrypt the data key by using the shared folder key and/or team key (claimed parameter of a key) and the PBKDF2 derived key (claimed number  $e$ ) to form an encrypted shared Keeper Record (claimed cipher  $C$ ).

16. Based on present information and belief, Verizon submits the cipher  $C$  from the user computer to the server computer. For example, Verizon employees submit the encrypted shared Keeper Record and the encrypted data key to the server computer so that it could be shared amongst the team members.

17. In the alternative, because the manner of use by Defendant differs in no substantial way from language of the claims, if Defendant is not found to literally infringe, Defendant infringes under the doctrine of equivalents.

18. Defendant's aforesaid activities have been without authority and/or license from Plaintiff.

19. In addition to what is required for pleadings in patent cases, and to the extent any marking was required by 35 U.S.C. § 287, Plaintiff and all predecessors in interest to the '647 Patent complied with all marking requirements under 35 U.S.C. § 287.

20. Plaintiff is entitled to recover from Defendant the damages sustained by Plaintiff as a result of the Defendant's wrongful acts in an amount subject to proof at trial, which, by law,

cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff respectfully requests that this Court enter:

1. A judgment in favor of Plaintiff that Defendant has infringed the '647 Patent;
2. A judgment and order requiring Defendant to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for Defendant's infringement of the '647 Patent as provided under 35 U.S.C. § 284;
3. An award to Plaintiff for enhanced damages resulting from the knowing, deliberate, and willful nature of Defendant's prohibited conduct with notice being made at least as early as the date of the filing of this Complaint, as provided under 35 U.S.C. § 284;
4. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff its reasonable attorneys' fees; and
5. Any and all other relief to which Plaintiff may show itself to be entitled.

**DEMAND FOR JURY TRIAL**

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

Respectfully Submitted,

**CUMBERLAND SYSTEMS LLC**

*/s/ Papool S. Chaudhari*

By: \_\_\_\_\_

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**ATTORNEY FOR PLAINTIFF  
CUMBERLAND SYSTEMS LLC**

Dated: May 8, 2017