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

REALTIME DATA LLC d/b/a IXO, Plaintiff, v. ORACLE AMERICA, INC., HEWLETT-PACKARD COMPANY, and HP ENTERPRISE SERVICES, LLC, Defendants.	Case No. 6:15-cv-467 JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq.* in which Plaintiff Realtime Data LLC d/b/a IXO ("Plaintiff," "Realtime," or "IXO") makes the following allegations against Defendant Oracle America, Inc. ("Oracle"), Defendant Hewlett-Packard Company ("HP"), and Defendant HP Enterprise Services, LLC ("HPES") (collectively, "Defendants"):

PARTIES

1. Realtime is a New York limited liability company. Realtime has places of business at 1828 E.S.E. Loop 323, Tyler, Texas 75701 and 116 Croton Lake Road, Katonah, New York 10536. Since the 1990s, Realtime has researched and developed specific solutions for data compression, including, for example, those that increase the speeds at which data can be stored and accessed. As recognition of its innovations rooted in this technological field, Realtime holds over 40 United States patents and has numerous pending patent applications. Realtime has licensed patents in this portfolio to many of the world's leading technology companies. The patents-in-suit relate to Realtime's development of advanced systems and methods for fast and efficient data

compression using numerous innovative compression techniques based on, for example, particular attributes of the data.

2. On information and belief, Defendant Oracle America, Inc. ("Oracle") is a Delaware corporation with its principal office at 500 Oracle Parkway, Redwood City, California 94065. On information and belief, Oracle can be served through its registered agent, Corporation Service Company d/b/a CSC-Lawyers Inco, 211 E. 7th Street Suite 620, Austin, Texas 78701.

3. On information and belief, Defendant HP is a Delaware corporation, with its North American headquarters at 11445 Compaq Center West Drive, Houston, Texas 77070, and a worldwide headquarters at 3000 Hanover Street, Palo Alto, California 94304. On information and belief, HP can be served through its registered agent, CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, Texas 75201.

4. On information and belief, HPES is a Delaware limited liability company having a principal place of business at 5400 Legacy Drive, Plano, Texas 75024. On information and belief, HPES can be served through its registered agent, CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, Texas 75201.

5. On information and belief, Defendant HPES has made, used, sold, offered for sale, and/or imported a "joint solution" with Oracle consisting of the Oracle Solaris 11 OS (with integrated ZFS file system)[1] running on HP ProLiant servers[2] since 1996 pursuant to ongoing contractual agreements between them and continues to do so. As further explained below, ZFS infringes the asserted patents. Accordingly, each of the Defendants is properly joined in this action pursuant to 35 U.S.C. § 299.

[1] See https://blogs.oracle.com/zfs/

[2] See http://webcache.googleusercontent.com/search?q=cache:6iglxRqdm2EJ:www8.hp.com/us/en/products/servers/operating-systems/solaris/+&cd=1&hl=en&ct=clnk&gl=us

JURISDICTION AND VENUE

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

7. This Court has personal jurisdiction over Defendant Oracle in this action because Oracle has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Oracle would not offend traditional notions of fair play and substantial justice. Defendant Oracle, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the asserted patents. Oracle is registered to do business in the State of Texas and has appointed Corporation Service Company d/b/a CSC-Lawyers Inco, 211 E. 7th Street Suite 620, Austin, Texas 78701 as its agent for service of process.

8. This Court has personal jurisdiction over Defendants HP and HPES in this action because HP and HPES have committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over HP and HPES would not offend traditional notions of fair play and substantial justice. Defendants HP and HPES, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), have committed and continue to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the asserted patents. Moreover, both HP and HPES are registered to do business in the state of Texas, and each has appointed CT Corporation System, 1999 Bryan St., Suite 900, Dallas, TX, 75201-3136, as its agent for service of process. This Court also has personal jurisdiction over Defendants HP and HPES because HP and HPES each have a principal place of business in Texas.

9. Venue is proper in this district under 28 U.S.C. §§ 1391(b), 1391(c) and 1400(b). Each of Defendants Oracle, HP, and HPES is registered to do business in Texas, and upon information and belief, has transacted business in the Eastern District of Texas and has committed acts of direct and indirect infringement in the Eastern District of Texas. In addition, each of Defendants HP and HPES has a principal place of business in Texas.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 7,378,992

10. Plaintiff realleges and incorporates by reference paragraphs 1-9 above, as if fully set forth herein.

11. Plaintiff Realtime is the owner by assignment of United States Patent No. 7,378,992 ("the '992 patent") entitled "Content independent data compression method and system." The '992 patent was duly and legally issued by the United States Patent and Trademark Office on May 27, 2008. A true and correct copy of the '992 patent, including its reexamination certificates, is included as Exhibit A.

12. On information and belief, Oracle has used, offered for sale, sold and/or imported into the United States Oracle products that infringe various claims of the '992 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Oracle's compression products and services, such as, *e.g.*, Oracle Database 11g Release 2 ("11g") and Oracle Solaris 11 OS (with integrated ZFS file system ("ZFS")) ("Solaris with ZFS") and all versions and variations thereof since the issuance of the '992 patent ("accused products").

Oracle Database 11g Release 2

13. On information and belief, Oracle has directly infringed and continues to infringe the '992 patent, for example, through its own use and testing of the accused products to practice compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least

one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. On information and belief, use of the accused products in their ordinary and customary fashion results in infringement of the methods claimed by the '992 patent.

14. On information and belief, Oracle has had knowledge of the '992 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Oracle knew of the '992 patent and knew of its infringement, including by way of this lawsuit.

15. Oracle's affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce users of the accused products to use the accused products in their normal and customary way to infringe the '992 patent by practicing compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data

within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, in Oracle's White Paper entitled, "Hybrid Columnar Compression (HCC) on Exadata," [3] Oracle explains that HCC reduces I/O demands during typical Data Warehouse queries.[4] Oracle specifically intended and was aware that the normal and customary use of the accused products would infringe the '992 patent. Oracle performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '992 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Oracle engaged in such inducement to promote the sales of the accused products, *e.g.*, through Oracle's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '992 patent. Accordingly, Oracle has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '992 patent, knowing that such use constitutes infringement of the '992 patent.

16. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, Oracle has injured Realtime and is liable to Realtime for infringement of the '992 patent pursuant to 35 U.S.C. § 271.

17. As a result of Oracle's infringement of the '992 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Oracle's infringement, but in no event less than a reasonable royalty for the use made of the

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[3] http://www.oracle.com/technetwork/database/exadata/ehcc-twp-131254.pdf

[4] The Oracle Exadata Database Machine is a specialized appliance designed to run Oracle Database software, including 11g. See, e.g. http://www.oracle.com/technetwork/database/exadata/exadata-x5-2-ds-2406241.pdf ("Exadata is the most thoroughly tested and tuned platform for running Oracle Database").

invention by Oracle, together with interest and costs as fixed by the Court.

ZFS File System on Oracle Solaris 11 OS (including on HP ProLiant servers)

18. On information and belief, Oracle and HP and/or HPES have made, used, offered for sale, sold and/or imported into the United States a "joint solution" consisting of the Oracle Solaris 11 OS (with integrated ZFS file system ("ZFS")) ("Solaris with ZFS")[5] running on HP ProLiant servers[6] since 1996 pursuant to ongoing contractual agreements between them and continue to do so.

19. On information and belief, Oracle and HP and/or HPES have directly infringed and continue to infringe the '992 patent, for example, through their own use and testing of the accused products to practice compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. On information and belief, use of the accused products in their ordinary and customary fashion results in infringement of the methods claimed by the '992 patent.

20. On information and belief, HP and/or HPES have had knowledge of the

[5] See https://blogs.oracle.com/zfs/

[6] See http://webcache.googleusercontent.com/search?q=cache:6iglxRqdm2EJ:www8.hp.com/us/en/products/servers/operating-systems/solaris/+&cd=1&hl=en&ct=clnk&gl=us

'992 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, HP and/or HPES knew of the '992 patent and knew of their infringement, including by way of this lawsuit.

21. Upon information and belief, HP and/or HPES's affirmative acts of installing the accused products into HP and/or HPES's own compatible hardware such as HP ProLiant servers, selling such systems, and providing instructions and technical support to users of the accused products, for example, through the Solaris 11 on HP ProLiant Servers - Support Guide,[7] have induced and continue to induce users of the accused products to use the accused products with HP and/or HPES's own compatible hardware such as HP ProLiant servers in their normal and customary way to infringe the '992 patent. HP and/or HPES specifically intended and were aware that these normal and customary activities would infringe the '992 patent. HP and/or HPES performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '992 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, HP and/or HPES engaged in such inducement to promote the sales of its own compatible hardware that can be used in conjunction with the accused products, including HP ProLiant servers, *e.g.*, through HP and/or HPES's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '992 patent. Accordingly, HP and/or HPES have induced and continue to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '992 patent, knowing that such use constitutes infringement of the '992 patent.

22. On information and belief, Oracle has had knowledge of the '992 patent

[7] See https://h20565.www2.hp.com/hpsc/swd/public/detail?swItemId=MTX_6d9cb72603774312b5fd3dceed

since at least the filing of this Complaint or shortly thereafter, and on information and belief, Oracle knew of the '992 patent and knew of its infringement, including by way of this lawsuit.

23. Oracle's affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce users of the accused products to use the accused products in their normal and customary way to infringe the '992 patent by practicing compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, in a web article, "How to Optimize Your Enterprise Storage with Oracle Solaris ZFS",[8] Oracle explains the benefits of using the LZJB compression algorithm with ZFS compression to reduce storage footprint. Oracle also explains the benefits of de-duplication, which removes duplicate data blocks as they are written to disk,[9] on a block level (not on a file level).[10] Oracle specifically intended and was aware that the normal

[8] See http://www.oracle.com/technetwork/articles/servers-storage-admin/howto-optimize-storage-zfs-2241782.html#1
[9] See *id.*; https://docs.oracle.com/cd/E36784_01/html/E36835/gazsd.html#ZFSADMINgjhav
[10] See http://www.oracle.com/technetwork/articles/servers-storage-admin/howto-optimize-storage-zfs-2241782.html#1

and customary use of the accused products would infringe the '992 patent. Oracle performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '992 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Oracle engaged in such inducement to promote the sales of the accused products, *e.g.*, through Oracle's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '992 patent. Accordingly, Oracle has induced and continues to induce end users of the accused products to use the accused products in their ordinary and customary way to infringe the '992 patent, knowing that such use constitutes infringement of the '992 patent.

24. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, Oracle and HP and/or HPES have injured Realtime and are liable to Realtime for infringement of the '992 patent pursuant to 35 U.S.C. § 271.

25. As a result of Oracle's and HP and/or HPES's infringement of the '992 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Oracle's and HP and/or HPES's infringement, but in no event less than a reasonable royalty for the use made of the invention by Oracle and HP and/or HPES, together with interest and costs as fixed by the Court.

Other HP Products

26. On information and belief, HP has used, offered for sale, sold and/or imported into the United States HP products that infringe various claims of the '992 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, HP Vertica, and all versions and variations thereof since the issuance of the '992 patent ("accused products").

27. On information and belief, HP has directly infringed and continues to

infringe the ‘992 patent, for example, through its own use and testing of the accused products to practice compression methods claimed by the ‘992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. On information and belief, use of the accused products in their ordinary and customary fashion results in infringement of the methods claimed by the ‘992 patent.

28. On information and belief, HP has had knowledge of the ‘992 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, HP knew of the ‘992 patent and knew of its infringement, including by way of this lawsuit.

29. HP’s affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce users of the accused products to use the accused products in their normal and customary way to infringe the ‘992 patent by practicing compression methods claimed by the ‘992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first

data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, in the HP Vertica 7.1.x ConceptsGuide,[11] HP explains that HP Vertica uses several different compression methods and automatically chooses the best one for the data being compressed. HP specifically intended and was aware that the normal and customary use of the accused products would infringe the '992 patent. HP performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '992 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, HP engaged in such inducement to promote the sales of the accused products, *e.g.*, through HP's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '992 patent. Accordingly, HP has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '992 patent, knowing that such use constitutes infringement of the '992 patent.

30. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, HP has injured Realtime and is liable to Realtime for infringement of the '992 patent pursuant to 35 U.S.C. § 271.

31. As a result of HP's infringement of the '992 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for HP's infringement, but in no event less than a reasonable royalty for the use made of the

[11] https://my.vertica.com/docs/7.1.x/PDF/HP_Vertica_7.1.x_ConceptsGuide.pdf

invention by HP, together with interest and costs as fixed by the Court.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 7,415,530

32. Plaintiff Realtime realleges and incorporates by reference paragraphs 1-31 above, as if fully set forth herein.

33. Plaintiff Realtime is the owner by assignment of United States Patent No. 7,415,530 ("the '530 Patent") entitled "System and methods for accelerated data storage and retrieval." The '530 Patent was duly and legally issued by the United States Patent and Trademark Office on August 19, 2008. A true and correct copy of the '530 Patent, including its reexamination certificate, is included as Exhibit B.

34. On information and belief, Oracle has used, offered for sale, sold and/or imported into the United States Oracle products that infringe various claims of the '530 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Oracle's compression products and services, such as, *e.g.*, 11g, the Oracle Exadata Database Machine ("Exadata") running 11g, and Solaris with ZFS running on HP ProLiant servers or other compatible systems and all versions and variations thereof since the issuance of the '530 patent ("accused products").

Oracle Database 11g Release 2

35. On information and belief, Oracle has directly infringed and continues to infringe the '530 patent, for example, through its own use, testing,[12] sale, offer for sale, and/or importation of the accused products, which when used as designed and intended, constitutes a system comprising: a memory device; and a data accelerator, wherein said

[12] See, e.g., http://www.oracle.com/technetwork/database/exadata/exadata-x5-2-ds-2406241.pdf ("Customer machines are also identical to the machines Oracle Support uses for problem identification and resolution, and the machines Oracle Engineering uses for development and testing of Oracle Database. Hence, Exadata is the most thoroughly tested and tuned platform for running Oracle Database and is also the most supportable platform.")

data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block.

36. On information and belief, Oracle has had knowledge of the ‘530 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Oracle knew of the ‘530 patent and knew of its infringement, including by way of this lawsuit.

37. Oracle’s affirmative acts of making, using, selling, offering for sale, and/or importing the accused products has induced and continues to induce users of the accused products to use the accused products in their normal and customary way on compatible systems, including Exadata, to infringe the ‘530 patent, knowing that when the accused products are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different,

said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the '530 patent. For example, in Oracle's White Paper entitled, "Hybrid Columnar Compression (HCC) on Exadata,"[13] Oracle explains that HCC reduces I/O demands during typical Data Warehouse queries.[14] In addition, in Oracle's Database SecureFiles and Large Objects Developer's Guide,[15] explains that SecureFiles Intelligent Deduplication enables 11g to automatically detect duplicate LOB data within a LOB column or partition, and conserve space by storing only one copy of the data. Oracle specifically intended and was aware that the normal and customary use of the accused products on compatible systems, including Exadata, would infringe the '530 patent. Oracle performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '530 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Oracle engaged in such inducement to promote the sales of the accused products, *e.g.*, through Oracle's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '530 patent. Accordingly, Oracle has induced and continues to induce end

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[13] http://www.oracle.com/technetwork/database/exadata/ehcc-twp-131254.pdf

[14] The Oracle Exadata Database Machine is a specialized appliance designed to run Oracle Database software, including 11g. See, e.g. http://www.oracle.com/technetwork/database/exadata/exadata-x5-2-ds-2406241.pdf ("Exadata is the most thoroughly tested and tuned platform for running Oracle Database").

[15] http://docs.oracle.com/cd/E11882_01/appdev.112/e18294/adlob_smart.htm#ADLOB4444

users of the accused products to use the accused products in their ordinary and customary way with compatible systems, including Exadata, to make and/or use systems infringing the ‘530 patent, knowing that such use of the accused products with compatible systems, including Exadata, will result in infringement of the ‘530 patent.

38. Oracle also indirectly infringes the ‘530 patent by manufacturing, using, selling, offering for sale, and/or importing the accused products, with knowledge that the accused products were and are especially manufactured and/or especially adapted for use in infringing the ‘530 patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use. On information and belief, the accused products are designed to function with compatible hardware, including Exadata, to create systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the ‘530 patent. Because all software must run on corresponding compatible hardware that necessarily includes a memory device, and the functions of the claimed data accelerator are performed by the accused products when executed on such hardware, including Exadata, the most compelling inference is that the accused products have no substantial non-infringing uses, and that any other uses would be unusual, far-fetched, illusory, impractical, occasional,

aberrant, or experimental. Oracle's manufacture, use, sale, offering for sale, and/or importation of the accused products constitutes contributory infringement of the '530 patent.

39. Oracle also indirectly infringes the '530 patent by manufacturing, using, selling, offering for sale, and/or importing Exadata, with knowledge that Exadata was and is especially manufactured and/or especially adapted for use in infringing the '530 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. On information and belief, Exadata is designed to function with Oracle Database software, including 11g,[16] to create systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the '530 patent. Because Exadata necessarily includes a memory device to run Oracle Database software, including 11g, as it is designed to do, and the functions of the claimed data

[16] The Oracle Exadata Database Machine is a specialized appliance designed to run Oracle Database software, including 11g. See, e.g. http://www.oracle.com/technetwork/database/exadata/exadata-x5-2-ds-2406241.pdf ("Exadata is the most thoroughly tested and tuned platform for running Oracle Database").

accelerator are performed by the 11g software when executed on Exadata, the most compelling inference is that Exadata, an Oracle appliance specifically designed to run Oracle Database software, including 11g,[17] has no substantial non-infringing uses, and that any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Oracle's manufacture, use, sale, offering for sale, and/or importation of Exadata constitutes contributory infringement of the '530 patent.

40. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, Oracle has injured Realtime and is liable to Realtime for infringement of the '530 patent pursuant to 35 U.S.C. § 271.

41. As a result of Oracle's infringement of the '530 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Oracle's infringement, but in no event less than a reasonable royalty for the use made of the invention by Oracle, together with interest and costs as fixed by the Court.

ZFS File System on Oracle Solaris 11 OS (including on HP ProLiant servers)

42. On information and belief, Oracle and HP and/or HPES have made, used, offered for sale, sold and/or imported into the United States a "joint solution" consisting of the Oracle Solaris 11 OS (with integrated ZFS file system ("ZFS")) ("Solaris with ZFS")[18] running on HP ProLiant servers[19] since 1996 pursuant to ongoing contractual agreements between them and continue to do so.

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[17] See, e.g., http://www.oracle.com/technetwork/database/exadata/exadata-x5-2-ds-2406241.pdf ("Customer machines are also identical to the machines Oracle Support uses for problem identification and resolution, and the machines Oracle Engineering uses for development and testing of Oracle Database. Hence, Exadata is the most thoroughly tested and tuned platform for running Oracle Database and is also the most supportable platform.")

[18] See https://blogs.oracle.com/zfs/

[19] See http://webcache.googleusercontent.com/search?q=cache:6iglxRqdm2EJ:www8.hp.com/us/en/products/servers/operating-systems/solaris/+&cd=1&hl=en&ct=clnk&gl=us

43. On information and belief, Oracle and HP and/or HPES have directly infringed and continue to infringe the '530 patent, for example, through their own use, testing,[20] sale, offer for sale, and/or importation of the accused products on compatible systems, including HP ProLiant servers, which when used as designed and intended, constitutes a system comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block.

44. On information and belief, HP and HPES have had knowledge of the '530 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, HP and HPES knew of the '530 patent and knew of their infringement, including by way of this lawsuit.

45. Upon information and belief, HP and/or HPES's affirmative acts of installing the accused products into HP and/or HPES's own compatible hardware such as

[20] See, e.g., http://www.oracle.com/technetwork/database/exadata/exadata-x5-2-ds-2406241.pdf ("Customer machines are also identical to the machines Oracle Support uses for problem identification and resolution, and the machines Oracle Engineering uses for development and testing of Oracle Database. Hence, Exadata is the most thoroughly tested and tuned platform for running Oracle Database and is also the most supportable platform.")

HP ProLiant servers, selling such systems, and providing instructions and technical support to users of the accused products, for example, through the Solaris 11 on HP ProLiant Servers - Support Guide,[21] have induced and continue to induce users of the accused products to use the accused products with HP and/or HPES's own compatible hardware such as HP ProLiant servers in their normal and customary way to infringe the '530 patent. HP and/or HPES specifically intended and was aware that these normal and customary activities would infringe the '530 patent. HP and/or HPES performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '530 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, HP and/or HPES engaged in such inducement to promote the sales of their own compatible hardware that can be used in conjunction with the accused products, including HP ProLiant servers, *e.g.*, through HP and/or HPES's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '530 patent. Accordingly, HP and/or HPES have induced and continue to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '530 patent, knowing that such use constitutes infringement of the '530 patent.

46. On information and belief, Oracle has had knowledge of the '530 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Oracle knew of the '530 patent and knew of its infringement, including by way of this lawsuit.

47. Oracle's affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce users of the

[21] See https://h20565.www2.hp.com/hpsc/swd/public/detail?swItemId=MTX_6d9cb72603774312b5fd3dceed

accused products to use the accused products in their normal and customary way on compatible systems to infringe the '530 patent, knowing that when the accused products are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the '530 patent. For example, in a web article, "How to Optimize Your Enterprise Storage with Oracle Solaris ZFS",[22] Oracle explains the benefits of using the LZJB compression algorithm with ZFS compression to reduce storage footprint. Oracle also explains the benefits of de-duplication, which removes duplicate data blocks as they are written to disk,[23] on a block level (not on a file level).[24] Oracle specifically intended and was aware that the normal and customary use of the accused products on compatible systems would infringe the '530 patent. Oracle performed the acts that constitute induced infringement, and would

[22] See http://www.oracle.com/technetwork/articles/servers-storage-admin/howto-optimize-storage-zfs-2241782.html#1
[23] See *id*.; https://docs.oracle.com/cd/E36784_01/html/E36835/gazsd.html#ZFSADMINgjhav
[24] See http://www.oracle.com/technetwork/articles/servers-storage-admin/howto-optimize-storage-zfs-2241782.html#1

induce actual infringement, with the knowledge of the '530 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Oracle engaged in such inducement to promote the sales of the accused products, *e.g.*, through Oracle's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '530 patent. Accordingly, Oracle has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way with compatible systems to make and/or use systems infringing the '530 patent, knowing that such use of the accused products with compatible systems will result in infringement of the '530 patent.

48. Oracle also indirectly infringes the '530 patent by manufacturing, using, selling, offering for sale, and/or importing the accused products, with knowledge that the accused products were and are especially manufactured and/or especially adapted for use in infringing the '530 patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use. On information and belief, the accused products are designed to function with compatible hardware to create systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said

first data block, thereby infringing the '530 patent. Because all software must run on corresponding compatible hardware that necessarily includes a memory device, and the functions of the claimed data accelerator are performed by the accused products when executed on such hardware, the most compelling inference is that the accused products have no substantial non-infringing uses, and that any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Oracle's manufacture, use, sale, offering for sale, and/or importation of the accused products constitutes contributory infringement of the '530 patent.

49. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, Oracle and HP and/or HPES have injured Realtime and are liable to Realtime for infringement of the '530 patent pursuant to 35 U.S.C. § 271.

50. As a result of Oracle's and HP and/or HPES's infringement of the '530 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Oracle's and HP and/or HPES's infringement, but in no event less than a reasonable royalty for the use made of the invention by Oracle and HP and/or HPES, together with interest and costs as fixed by the Court.

Other HP Products

51. On information and belief, HP has used, offered for sale, sold and/or imported into the United States HP products that infringe various claims of the '530 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, HP Vertica, and all versions and variations thereof since the issuance of the '530 patent ("accused products").

52. On information and belief, HP has directly infringed and continues to infringe the '530 patent, for example, through its own use, testing, sale, offer for sale, and/or importation of the accused products, which when used as designed and intended with compatible systems, constitutes a system comprising: a memory device; and a data

accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block.

53. On information and belief, HP has had knowledge of the ‘530 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, HP knew of the ‘530 patent and knew of its infringement, including by way of this lawsuit.

54. HP’s affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continues to induce users of the accused products to use the accused products in their normal and customary way on compatible systems to infringe the ‘530 patent, knowing that when the accused products are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream

is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the '530 patent. For example, in the HP Vertica 7.1.x ConceptsGuide,[25] HP explains that HP Vertica uses several different compression methods and automatically chooses the best one for the data being compressed. HP specifically intended and was aware that the normal and customary use of the accused products on compatible systems would infringe the '530 patent. HP performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '530 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, HP engaged in such inducement to promote the sales of the accused products, *e.g.*, through HP's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '530 patent. Accordingly, HP has induced and continues to induce end users of the accused products to use the accused products in their ordinary and customary way with compatible systems to make and/or use systems infringing the '530 patent, knowing that such use of the accused products with compatible systems will result in infringement of the '530 patent.

55. HP also indirectly infringes the '530 patent by manufacturing, using, selling, offering for sale, and/or importing the accused products, with knowledge that the accused products were and are especially manufactured and/or especially adapted for use in infringing the '530 patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use. On information and belief, the accused

[25] https://my.vertica.com/docs/7.1.x/PDF/HP_Vertica_7.1.x_ConceptsGuide.pdf

products are designed to function with compatible hardware to create systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the '530 patent. Because all software must run on corresponding compatible hardware that necessarily includes a memory device, and the functions of the claimed data accelerator are performed by the accused products when executed on such hardware, the most compelling inference is that the accused products have no substantial non-infringing uses, and that any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. HP's manufacture, use, sale, offering for sale, and/or importation of the accused products constitutes contributory infringement of the '530 patent.

56. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, HP has injured Realtime and is liable to Realtime for infringement of the '530 patent pursuant to 35 U.S.C. § 271.

57. As a result of HP's infringement of the '530 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Oracle's infringement, but in no event less than a reasonable royalty for the use made of the

invention by HP, together with interest and costs as fixed by the Court.

COUNT III

INFRINGEMENT OF U.S. PATENT NO. 8,643,513

58. Plaintiff realleges and incorporates by reference paragraphs 1-57 above, as if fully set forth herein.

59. Plaintiff Realtime is the owner by assignment of United States Patent No. 8,643,513 ("the '513 patent") entitled "Data compression systems and methods." The '513 patent was duly and legally issued by the United States Patent and Trademark Office on February 4, 2014. A true and correct copy of the '513 patent is included as Exhibit C.

60. On information and belief, Oracle has used, offered for sale, sold and/or imported into the United States Oracle products that infringe various claims of the '513 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Oracle's compression products and services, such as, *e.g.*, 11g and Solaris with ZFS and all versions and variations thereof since the issuance of the '513 patent ("accused products").

Oracle Database 11g Release 2

61. On information and belief, Oracle has used, offered for sale, sold and/or imported into the United States products that infringe various claims of the '513 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, 11g, and all versions and variations thereof since the issuance of the '513 patent ("accused products").

62. On information and belief, Oracle has directly infringed and continues to infringe the '513 patent, for example, through its own use and testing of the accused products to practice compression methods claimed by the '513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent

data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. On information and belief, use of the accused products in their ordinary and customary fashion results in infringement of the methods claimed by the '513 patent.

63. On information and belief, Oracle has had knowledge of the '513 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Oracle knew of the '513 patent and knew of its infringement, including by way of this lawsuit.

64. Oracle's affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce end-users of the accused products to use the accused products in their normal and customary way to infringe the '513 patent by practicing compression methods claimed by the '513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or

parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. For example, in Oracle's White Paper entitled, "Hybrid Columnar Compression (HCC) on Exadata,"[26] Oracle explains that HCC reduces I/O demands during typical Data Warehouse queries.[27] In addition, in Oracle's Database SecureFiles and Large Objects Developer's Guide,[28] explains that SecureFiles Intelligent Deduplication enables 11g to automatically detect duplicate LOB data within a LOB column or partition, and conserve space by storing only one copy of the data. Oracle specifically intended and was aware that the normal and customary use of the accused products would infringe the '513 patent. Oracle performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '513 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Oracle engaged in such inducement to promote the sales of the accused products, *e.g.*, through Oracle's user manuals, product support, marketing

[26] http://www.oracle.com/technetwork/database/exadata/ehcc-twp-131254.pdf

[27] The Oracle Exadata Database Machine is a specialized appliance designed to run Oracle Database software, including 11g. See, e.g. http://www.oracle.com/technetwork/database/exadata/exadata-x5-2-ds-2406241.pdf ("Exadata is the most thoroughly tested and tuned platform for running Oracle Database").

[28] http://docs.oracle.com/cd/E11882_01/appdev.112/e18294/adlob_smart.htm#ADLOB4444

materials, and training materials to actively induce the users of the accused products to infringe the '513 patent. Accordingly, Oracle has induced and continues to induce end users of the accused products to use the accused products in their ordinary and customary way to infringe the '513 patent, knowing that such use constitutes infringement of the '513 patent.

65. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, Oracle has injured Realtime and is liable to Realtime for infringement of the '513 patent pursuant to 35 U.S.C. § 271.

66. As a result of Oracle's infringement of the '513 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Oracle's infringement, but in no event less than a reasonable royalty for the use made of the invention by Oracle, together with interest and costs as fixed by the Court.

ZFS File System on Oracle Solaris 11 OS (including on HP ProLiant servers)

67. On information and belief, Oracle and HP and/or HPES have made, used, offered for sale, sold and/or imported into the United States a "joint solution" consisting of the Oracle Solaris 11 OS (with integrated ZFS file system ("ZFS")) ("Solaris with ZFS")[29] running on HP ProLiant servers[30] since 1996 pursuant to ongoing contractual agreements between them and continue to do so.

68. On information and belief, Oracle and HP and/or HPES have directly infringed and continue to infringe the '513 patent, for example, through their own use and testing of the accused products to practice compression methods claimed by the '513 patent, including a method of compressing a plurality of data blocks, comprising:

[29] See https://blogs.oracle.com/zfs/
[30] See http://webcache.googleusercontent.com/search?q=cache:6iglxRqdm2EJ:www8.hp.com/us/en/products/servers/operating-systems/solaris/+&cd=1&hl=en&ct=clnk&gl=us

analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. On information and belief, use of the accused products in their ordinary and customary fashion results in infringement of the methods claimed by the '513 patent.

69. On information and belief, HP and HPES have had knowledge of the '513 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, HP and HPES knew of the '513 patent and knew of their infringement, including by way of this lawsuit.

70. Upon information and belief, HP and/or HPES's affirmative acts of installing the accused products into HP and/or HPES's own compatible hardware such as HP ProLiant servers, selling such systems, and providing instructions and technical support to users of the accused products, for example, through the Solaris 11 on HP ProLiant Servers - Support Guide,[31] have induced and continue to induce users of the

[31] See https://h20565.www2.hp.com/hpsc/swd/public/detail?swItemId=MTX_6d9cb72603774312b5fd3dceed

accused products to use the accused products with HP and/or HPES's own compatible hardware such as HP ProLiant servers in their normal and customary way to infringe the '513 patent. HP and/or HPES specifically intended and were aware that these normal and customary activities would infringe the '513 patent. HP and/or HPES performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '513 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, HP and/or HPES engaged in such inducement to promote the sales of their own compatible hardware that can be used in conjunction with the accused products, including HP ProLiant servers, *e.g.*, through HP and/or HPES's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '513 patent. Accordingly, HP and/or HPES have induced and continue to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '513 patent, knowing that such use constitutes infringement of the '513 patent.

71. On information and belief, Oracle has had knowledge of the '513 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Oracle knew of the '513 patent and knew of its infringement, including by way of this lawsuit.

72. Oracle's affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce end-users of the accused products to use the accused products in their normal and customary way to infringe the '513 patent by practicing compression methods claimed by the '513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality

of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. For example, in a web article, "How to Optimize Your Enterprise Storage with Oracle Solaris ZFS",[32] Oracle explains the benefits of using the LZJB compression algorithm with ZFS compression to reduce storage footprint. Oracle also explains the benefits of deduplication, which removes duplicate data blocks as they are written to disk,[33] on a block level (not on a file level).[34] Oracle specifically intended and was aware that the normal and customary use of the accused products would infringe the '513 patent. Oracle performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '513 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Oracle engaged in such inducement to promote the sales of the accused products, *e.g.*, through Oracle's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to

[32] See http://www.oracle.com/technetwork/articles/servers-storage-admin/howto-optimize-storage-zfs-2241782.html#1
[33] See *id.*; https://docs.oracle.com/cd/E36784_01/html/E36835/gazsd.html#ZFSADMINgjhav
[34] See http://www.oracle.com/technetwork/articles/servers-storage-admin/howto-optimize-storage-zfs-2241782.html#1

infringe the ‘513 patent. Accordingly, Oracle has induced and continues to induce end users of the accused products to use the accused products in their ordinary and customary way to infringe the ‘513 patent, knowing that such use constitutes infringement of the ‘513 patent.

73. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products’ compression features, Oracle and HP and/or HPES have injured Realtime and are liable to Realtime for infringement of the ‘513 patent pursuant to 35 U.S.C. § 271.

74. As a result of Oracle’s and HP and/or HPES’s infringement of the ‘513 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Oracle’s and HP and/or HPES’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Oracle and HP and/or HPES, together with interest and costs as fixed by the Court.

Other HP Products

75. On information and belief, HP has used, offered for sale, sold and/or imported into the United States HP products that infringe various claims of the ‘513 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, HP Vertica, and all versions and variations thereof since the issuance of the ‘513 patent (“accused products”).

76. On information and belief, HP has directly infringed and continues to infringe the ‘513 patent, for example, through its own use and testing of the accused products to practice compression methods claimed by the ‘513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of

data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. On information and belief, use of the accused products in their ordinary and customary fashion results in infringement of the methods claimed by the '513 patent.

77. On information and belief, HP has had knowledge of the '513 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, HP knew of the '513 patent and knew of its infringement, including by way of this lawsuit.

78. HP's affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce end-users of the accused products to use the accused products in their normal and customary way to infringe the '513 patent by practicing compression methods claimed by the '513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm

to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. For example, in the HP Vertica 7.1.x ConceptsGuide,[35] HP explains that HP Vertica uses several different compression methods and automatically chooses the best one for the data being compressed. HP specifically intended and was aware that the normal and customary use of the accused products would infringe the '513 patent. HP performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '513 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, HP engaged in such inducement to promote the sales of the accused products, *e.g.*, through HP's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '513 patent. Accordingly, HP has induced and continues to induce end users of the accused products to use the accused products in their ordinary and customary way to infringe the '513 patent, knowing that such use constitutes infringement of the '513 patent.

79. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, HP has injured Realtime and is liable to Realtime for infringement of the '513 patent pursuant to 35 U.S.C. § 271.

80. As a result of HP's infringement of the '513 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for HP's

[35] https://my.vertica.com/docs/7.1.x/PDF/HP_Vertica_7.1.x_ConceptsGuide.pdf

infringement, but in no event less than a reasonable royalty for the use made of the invention by HP, together with interest and costs as fixed by the Court.

COUNT IV

INFRINGEMENT OF U.S. PATENT NO. 6,597,812

81. Plaintiff realleges and incorporates by reference paragraphs 1-80 above, as if fully set forth herein.

82. Plaintiff Realtime is the owner by assignment of United States Patent No. 6,597,812 ("the '812 patent") entitled "System and method for lossless data compression and decompression." The '812 patent was duly and legally issued by the United States Patent and Trademark Office on July 22, 2003. A true and correct copy of the '812 patent is included as Exhibit D.

83. On information and belief, HP has used, offered for sale, sold and/or imported into the United States HP products that infringe various claims of the '812 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, HP Vertica, and all versions and variations thereof since the issuance of the '812 patent ("accused products").

84. On information and belief, HP has directly infringed and continues to infringe the '812 patent, for example, through its own use and testing of the accused products to practice compression methods claimed by the '812 patent, including a method for compressing input data comprising a plurality of data blocks, the method comprising the steps of: detecting if the input data comprises a run-length sequence of data blocks; outputting an encoded run-length sequence, if a run-length sequence of data blocks is detected; maintaining a dictionary comprising a plurality of code words, wherein each code word in the dictionary is associated with a unique data block string; building a data block string from at least one data block in the input data that is not part of a run-length sequence; searching for a code word in the dictionary having a unique data block string

associated therewith that matches the built data block string; and outputting the code word representing the built data block string. On information and belief, use of the accused products in their ordinary and customary fashion results in infringement of the methods claimed by the '812 patent.

85. On information and belief, HP has had knowledge of the '812 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, HP knew of the '812 patent and knew of its infringement, including by way of this lawsuit.

86. HP's affirmative acts of making, using, selling, offering for sale, and/or importing the accused products have induced and continue to induce end-users of the accused products to use the accused products in their normal and customary way to infringe the '812 patent by practicing compression methods claimed by the '812 patent, including a method for compressing input data comprising a plurality of data blocks, the method comprising the steps of: detecting if the input data comprises a run-length sequence of data blocks; outputting an encoded run-length sequence, if a run-length sequence of data blocks is detected; maintaining a dictionary comprising a plurality of code words, wherein each code word in the dictionary is associated with a unique data block string; building a data block string from at least one data block in the input data that is not part of a run-length sequence; searching for a code word in the dictionary having a unique data block string associated therewith that matches the built data block string; and outputting the code word representing the built data block string. For example, in the HP Vertica 7.1.x ConceptsGuide,[36] HP explains that HP Vertica uses several different compression methods and automatically chooses the best one for the data being compressed. And in the web article, "Optimizing Big Data Storage in HP Vertica",[37] HP

[36] https://my.vertica.com/docs/7.1.x/PDF/HP_Vertica_7.1.x_ConceptsGuide.pdf
[37] http://www.vertica.com/2014/04/29/17761/

explains that run-length encoding is one of the encoding types considered by HP Vertica when optimizing the encoding. HP specifically intended and was aware that the normal and customary use of the accused products would infringe the '812 patent. HP performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '812 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, HP engaged in such inducement to promote the sales of the accused products, *e.g.*, through HP's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '812 patent. Accordingly, HP has induced and continues to induce end users of the accused products to use the accused products in their ordinary and customary way to infringe the '812 patent, knowing that such use constitutes infringement of the '812 patent.

87. By making, using, offering for sale, selling and/or importing into the United States the accused products, and touting the benefits of using the accused products' compression features, HP has injured Realtime and is liable to Realtime for infringement of the '812 patent pursuant to 35 U.S.C. § 271.

88. As a result of HP's infringement of the '812 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for HP's infringement, but in no event less than a reasonable royalty for the use made of the invention by HP, together with interest and costs as fixed by the Court.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Realtime respectfully requests that this Court enter:

a. A judgment in favor of Plaintiff that Oracle, HP, and HPES have infringed, either literally and/or under the doctrine of equivalents, the '992 patent, the '530 patent, and the '513 patent, and a judgment in favor of Plaintiff that HP has infringed, either literally and/or under the doctrine of equivalents, the '812 patent;

b. A permanent injunction prohibiting Oracle, HP, and HPES from further

acts of infringement of the '992 patent, the '530 patent, and the '513 patent, and prohibiting HP from further acts of infringement of the '812 patent;

c. A judgment and order requiring Oracle, HP, and HPES to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for their infringement of the '992 patent, the '530 patent, and the '513 patent, and a judgment and order requiring HP to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for its infringement of the '812 patent, as provided under 35 U.S.C. § 284; and

d. A judgment and order requiring Oracle, HP, and HPES to provide an accounting and to pay supplemental damages to Realtime, including without limitation, prejudgment and post-judgment interest;

e. 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 against Defendants; and

f. Any and all other relief as the Court may deem appropriate and just under the circumstances.

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.

Dated: May 8, 2015

Respectfully submitted,

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