UNITED STATES DISTRICT COURT
DISTRICT OF DELAWARE

REALTIME DATA LLC d/b/a IXO, Plaintiff, v. NIMBUS DATA, INC., Defendant.	C.A. No. _____ **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT AGAINST NIMBUS DATA, INC.

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 Nimbus Data, Inc. ("Nimbus Data" or "Defendant"):

PARTIES

1. Realtime is a limited liability company organized under the laws of the State of New York. Realtime has places of business at 5851 Legacy Circle, Plano, Texas 75024, 1828 E.S.E. Loop 323, Tyler, Texas 75701, and 66 Palmer Avenue, Suite 27, Bronxville, NY 10708. 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 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, Nimbus Data is a Delaware corporation with its principal place of business at 5151 Delaware Ave, Ste. 100, Irvine, CA 92617. Nimbus Data can be served through its registered agent, The Company Corporation, 251 Little Falls Drive, Wilmington, Delaware, 19808 .

JURISDICTION AND VENUE

3. 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).

4. This Court has personal jurisdiction over Defendant Nimbus Data in this action because Nimbus Data is incorporated in Delaware and has committed acts within the District of Delaware giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Nimbus Data would not offend traditional notions of fair play and substantial justice. Nimbus Data, directly and through subsidiaries or intermediaries, 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.

5. Venue is proper in this district under 28 U.S.C. § 1400(b). Upon information and belief, Nimbus Data is incorporated in Delaware, has transacted business in the District of Delaware, and has committed acts of direct and indirect infringement in this District.

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 10,019,458

6. Plaintiff realleges and incorporates by reference the foregoing paragraphs, as if fully set forth herein. Plaintiff Realtime is the owner by assignment of United States Patent No. 10,019,458 ("the '458 Patent") entitled "System and methods for accelerated data storage and retrieval." The '458 Patent was duly and legally issued by the United States Patent and Trademark Office on July 10, 2018. A true and correct copy of the '458 Patent is included as Exhibit A.

7. On information and belief, Nimbus Data has offered for sale, sold and/or imported into the United States Nimbus Data products and services that infringe the '458 patent, and continues to do so. By way of illustrative example, these infringing products and services include, without limitation, Nimbus Data products and services, *e.g.*, ExaFlash Operating System, ExaFlash Vantage, Nimbus HALO, ExaFlash Array family such as A-series, B-series, C-series, D-series, S-class series, Gemini F400, Gemini F600, ExaDrive, and the system hardware on which they operate, and all versions and variations thereof since the issuance of the '458 Patent ("Accused Instrumentalities").

8. On information and belief, Nimbus Data has directly infringed and continues to infringe the '458 Patent, for example, by making, selling, offering for sale, and/or importing the Accused Instrumentalities, and through its own use and testing of the Accused Instrumentalities, which constitute performing a method for accelerating data storage claimed by Claim 9 of the '458 Patent, comprising: analyzing a first data block to determine a parameter of the first data block; applying a first encoder associated with the determined parameter of the first data block to create a first encoded data block, wherein the first encoder utilizes a lossless dictionary compression technique; analyzing a second

data block to determine a parameter of the second data block; applying a second encoder associated with the determined parameter of the second data block to create a second encoded data block, wherein the second encoder utilizes a lossless compression technique different than the lossless dictionary compression technique; and storing the first and second encoded data blocks on a memory device, wherein encoding and storage of the first encoded data block occur faster than the first data block is able to be stored on the memory device in unencoded form. Upon information and belief, Nimbus Data uses the Accused Instrumentalities, which perform the infringing method, for its own internal non-testing business purposes, while testing the Accused Instrumentalities, and while providing technical support and repair services for the Accused Instrumentalities to its customers.

9. Nimbus Data also indirectly infringes the ’458 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 ’458 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use. On information and belief, the Accused Instrumentality is designed to function with compatible hardware to perform a method for accelerating data storage comprising: analyzing a first data block to determine a parameter of the first data block; applying a first encoder associated with the determined parameter of the first data block to create a first encoded data block, wherein the first encoder utilizes a lossless dictionary compression technique; analyzing a second data block to determine a parameter of the second data block; applying a second encoder associated with the determined parameter of the second data block to create a second encoded data block, wherein the second encoder utilizes a lossless compression technique different than the

lossless dictionary compression technique; and storing the first and second encoded data blocks on a memory device, wherein encoding and storage of the first encoded data block occur faster than the first data block is able to be stored on the memory device in unencoded form. Because the Accused Instrumentality is designed to operate as the claimed method for accelerating data storage, the Accused Instrumentality has no substantial non-infringing uses, and any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Nimbus Data's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '458 Patent.

10. On information and belief, Nimbus Data has had knowledge of the '458 Patent since at least the filing of the original Complaint in this action, or shortly thereafter, and on information and belief, Nimbus Data knew of the '458 Patent and knew of its infringement, including by way of this lawsuit.

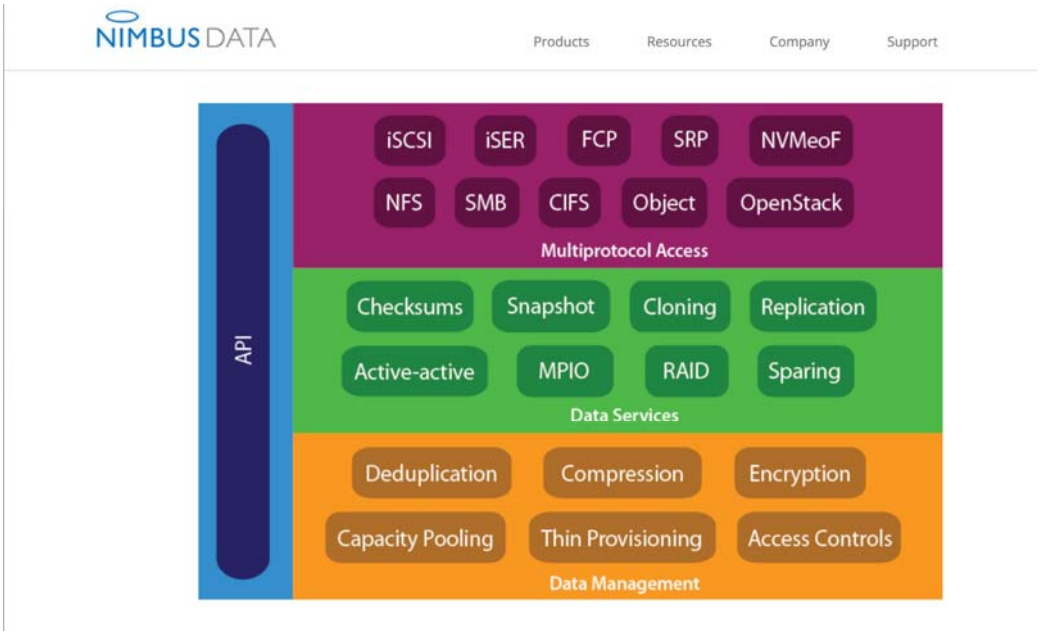
11. Nimbus Data's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe claims of the '458 Patent. Use of the Accused Instrumentalities in their ordinary and customary manner results in infringement of claims of the '458 Patent.

12. For example, Nimbus Data explains to customers the benefits of using the Accused Instrumentalities, such as by touting their performance advantages: "[E]xaFlash all-flash arrays offer virtually infinite on-demand scalability, up to 95% lower energy consumption, unmatched multiprotocol support, and up to 50x greater rack density, all at less than half the cost of competing solutions." *See* e.g., "Infinite scale. Infinite

possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/. Moreover, Accused Instrumentalities advertise support for "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/. For similar reasons, Nimbus Data also induces its customers to use the Accused Instrumentalities to infringe other claims of the '458 Patent. Nimbus Data specifically intended and was aware that the normal and customary use of the Accused Instrumentalities on compatible systems would infringe the '458 Patent. Nimbus Data performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '458 Patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Nimbus Data engaged in such inducement to promote the sales of the Accused Instrumentalities, *e.g.,* through Nimbus Data's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '458 Patent. Accordingly, Nimbus Data 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 '458 Patent, knowing that such use of the Accused Instrumentalities with compatible systems will result in infringement of the '458 Patent.

13. The Accused Instrumentalities analyze a first data block to determine a parameter of the first data block. For example, the Accused Instrumentalities support both LZ4 data compression and deduplication techniques (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite

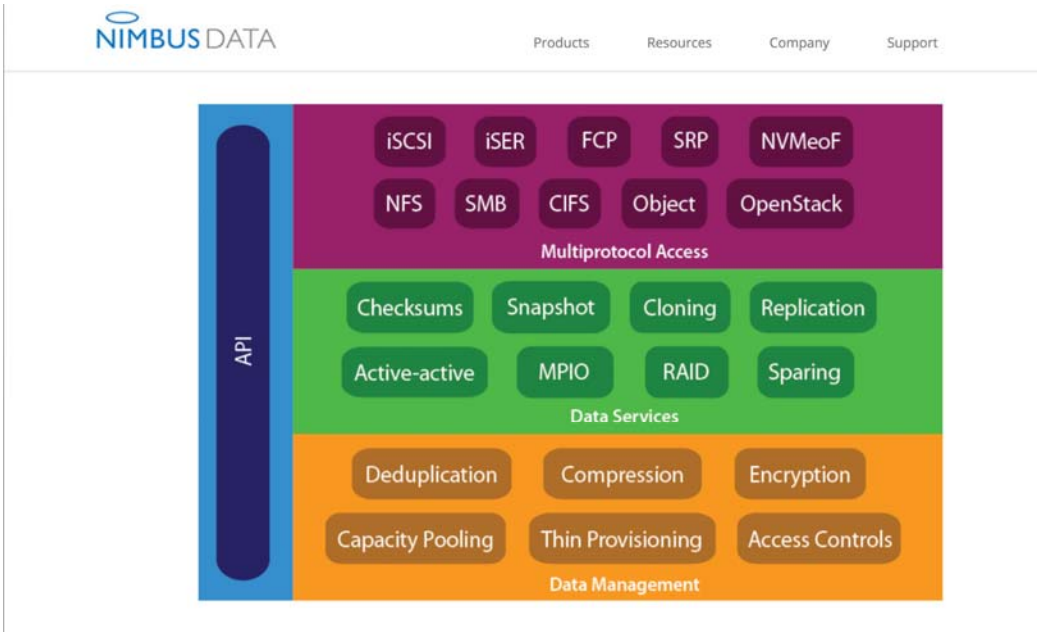
possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use deduplication and compression techniques (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



As such, the Accused Instrumentalities analyze data blocks to detect duplicate data blocks. In particular, deduplication technique divides incoming data flow "into chunks and a collision-resistant hash (e.g., SHA-1) is used as each chunk's identity. The dedup system maintains a global index of all hashes and uses it to detect duplicates." *See* "Online Deduplication for Databases" available at http://www.pdl.cmu.edu/PDL-FTP/Database/xu-sigmod17.pdf.

14. The Accused Instrumentalities apply a first encoder associated with the determined parameter of the first data block to create a first encoded data block, wherein the first encoder utilizes a lossless dictionary compression technique. For example, the

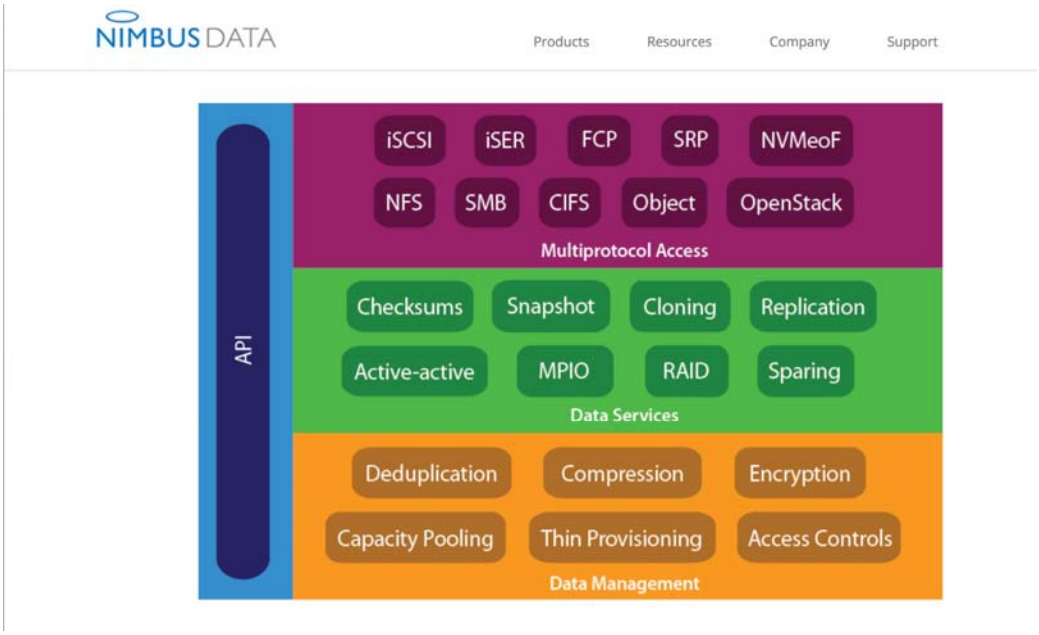
Accused Instrumentalities support LZ4 data compression (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use data compression technique (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



In this regard, LZ4 is a lossless dictionary data compression algorithm that is part of LZ77 family of compression schemes (e.g., "LZ4 is lossless compression algorithm, providing compression speed at 400 MB/s per core (0.16 Bytes/cycle." "LZ4 is also compatible with dictionary compression, and can ingest any input file as dictionary." *See* e.g., https://lz4.github.io/lz4/). As such, if the first data block is not the duplicate of previously

stored data block, the Accused Instrumentalities use LZ4 lossless dictionary based data compression technique to address redundancy across said first data block.

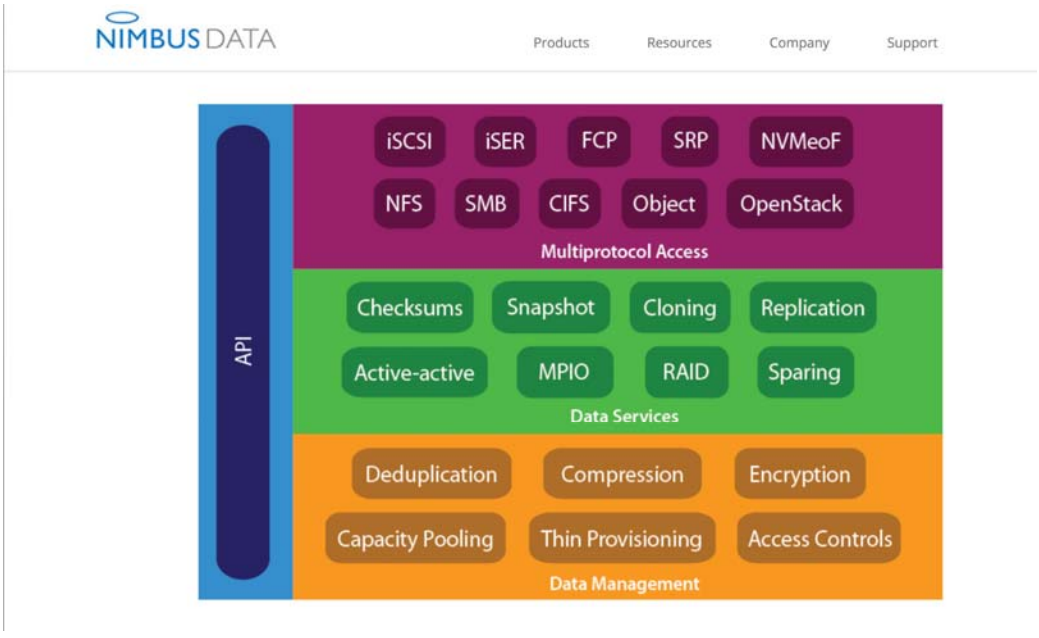
15. The Accused Instrumentalities analyze a second data block to determine a parameter of the second data block. For example, the Accused Instrumentalities support data deduplication (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use data deduplication technique (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



The Accused Instrumentalities analyze the incoming data flow to detect duplicate data blocks. As such, data deduplication technique divides the backup stream "into chunks and a collision-resistant hash (e.g., SHA-1) is used as each chunk's identity. The dedup system maintains a global index of all hashes and uses it to detect duplicates." *See* "Online

Deduplication for Databases" available at http://www.pdl.cmu.edu/PDL-FTP/Database/xu-sigmod17.pdf.

16. The Accused Instrumentalities apply a second encoder associated with the determined parameter of the second data block to create a second encoded data block, wherein the second encoder utilizes a lossless compression technique different than the lossless dictionary compression technique. For example, the Accused Instrumentalities support data deduplication (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use data deduplication technique (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



As such, if a duplicate block is found, the Accused Instrumentalities use deduplication technique to eliminate redundancy across data blocks. Moreover, data deduplication is a

lossless data compression technique (e.g., "[D]ata deduplication is a lossless compression technology that has been widely used in storage systems for space optimization." *See* "Multi_objective Metrics to Evaluate Deduplication Approaches" IEEE Access available at https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7907281).

17. The Accused Instrumentalities store the first and second encoded data blocks on a memory device, wherein encoding and storage of the first encoded data block occur faster than the first data block is able to be stored on the memory device in unencoded form. For example, Accused Instrumentalities store compressed data blocks in a memory device (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, Accused Instrumentalities disclose that "[N]earline HDDs are too slow to support inline deduplication and compression, but SSDs most definitely can, multiplying the effective capacity even further." *See* e.g., https://nimbusdata.com/products/exadrive-platform/tco-benefits/. Due to the data reduction and acceleration features of the specific compression algorithms used, the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form. As such, Accused Instrumentalities provide efficient deduplication that "reduces the amount of CPU resources and DRAM require to perform deduplication with exceptional speed, enabling such all-flash arrays to offer a distinct competitive advantage in power consumption, rack density, and cost. *See* e.g., https://nimbusdata.com/press/nimbus-data-granted-patent-for-ultra-efficient-deduplication-algorithm/.

18. Nimbus Data also infringes other claims of the ’458 Patent, directly and through inducing infringement and contributory infringement.

19. On information and belief, use of the Accused Instrumentalities in their ordinary and customary fashion results in infringement of the methods claimed by the ’458 Patent.

20. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ data storage accelerating features, Nimbus Data has injured Realtime and is liable to Realtime for infringement of the ’458 Patent pursuant to 35 U.S.C. § 271.

21. As a result of Nimbus Data’s infringement of the ’458 Patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Nimbus Data’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Nimbus Data, together with interest and costs as fixed by the Court.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 9,667,751

22. Plaintiff realleges and incorporates by reference the foregoing paragraphs, as if fully set forth herein.

23. Plaintiff Realtime is the owner by assignment of United States Patent No. 9,667,751 (“the ’751 Patent”) entitled “Data feed acceleration.” The ’751 Patent was duly and legally issued by the United States Patent and Trademark Office on May 30, 2017. A true and correct copy of the ’751 Patent is included as Exhibit B.

24. On information and belief, Nimbus Data has offered for sale, sold and/or imported into the United States Nimbus Data products and services that infringe the ’751

patent, and continues to do so. By way of illustrative example, these infringing products and services include, without limitation, Nimbus Data products and services, *e.g.*, ExaFlash Operating System, ExaFlash Vantage, Nimbus HALO, ExaFlash Array family such as A-series, B-series, C-series, D-series, S-class series, Gemini F400, Gemini F600, ExaDrive, and the system hardware on which they operate, and all versions and variations thereof since the issuance of the '751 Patent ("Accused Instrumentalities").

25. On information and belief, Nimbus Data has directly infringed and continues to infringe the '751 Patent, for example, through its own use and testing of the Accused Instrumentalities, which in the ordinary course of their operation perform a method for compressing data claimed by Claim 1 of the '751 Patent, comprising: analyzing content of a data block to identify a parameter, attribute, or value of the data block that excludes analyzing based solely on reading a descriptor; selecting an encoder associated with the identified parameter, attribute, or value; compressing data in the data block with the selected encoder to produce a compressed data block, wherein the compressing includes utilizing a state machine; and storing the compressed data block; wherein the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form. Upon information and belief, Nimbus Data uses the Accused Instrumentalities, which perform the infringing method, for its own internal non-testing business purposes, while testing the Accused Instrumentalities, and while providing technical support and repair services for the Accused Instrumentalities to Nimbus Data's customers.

26. On information and belief, Nimbus Data has had knowledge of the '751 Patent since at least the filing of the original Complaint in this action, or shortly thereafter,

and on information and belief, Nimbus Data knew of the '751 Patent and knew of its infringement, including by way of this lawsuit.

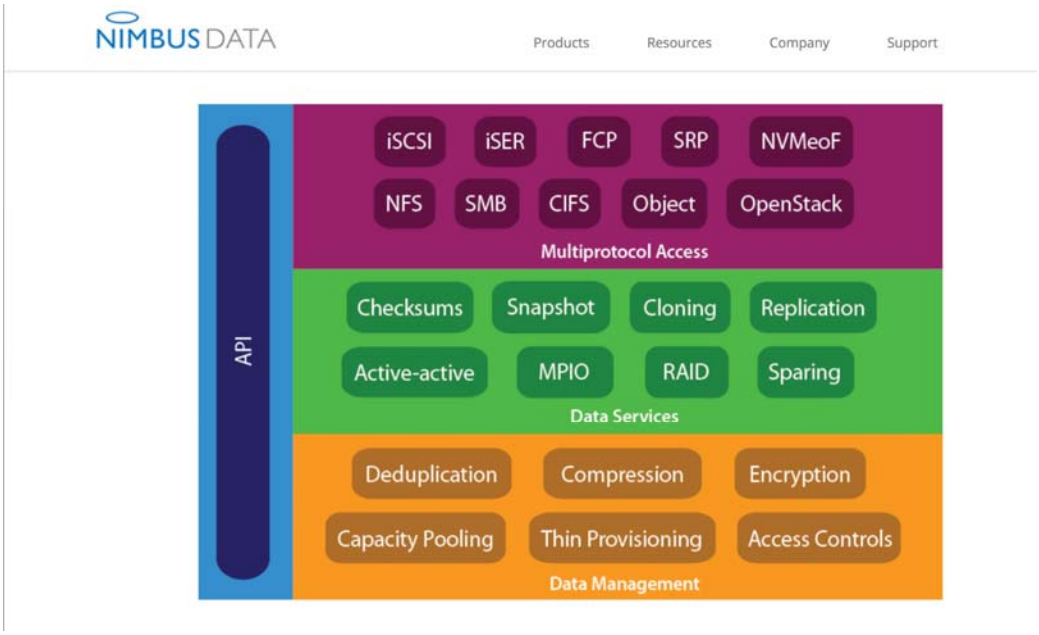
27. Upon information and belief, Nimbus Data's affirmative acts of making, using, and selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe Claim 1 of the '751 Patent by analyzing content of a data block to identify a parameter, attribute, or value of the data block that excludes analyzing based solely on reading a descriptor; selecting an encoder associated with the identified parameter, attribute, or value; compressing data in the data block with the selected encoder to produce a compressed data block, wherein the compressing includes utilizing a state machine; and storing the compressed data block; wherein the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form. For example, Nimbus Data explains to customers the benefits of using the Accused Instrumentalities, such as by touting their efficiency: "[E]xaFlash all-flash arrays offer virtually infinite on-demand scalability, up to 95% lower energy consumption, unmatched multiprotocol support, and up to 50x greater rack density, all at less than half the cost of competing solutions." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/. Moreover, Accused Instrumentalities advertise support for "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/. For similar reasons, Nimbus Data also induces its customers to use the Accused

Instrumentalities to infringe other claims of the '751 Patent. Nimbus Data specifically intended and was aware that these normal and customary activities would infringe the '751 Patent. Nimbus Data performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '751 Patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Nimbus Data engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Nimbus Data 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 '751 Patent, knowing that such use constitutes infringement of the '751 Patent.

28. Nimbus Data also indirectly infringes the '751 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 '751 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use. On information and belief, the Accused Instrumentality is designed to perform a method for compressing data comprising: analyzing content of a data block to identify a parameter, attribute, or value of the data block that excludes analyzing based solely on reading a descriptor; selecting an encoder associated with the identified parameter, attribute, or value; compressing data in the data block with the selected encoder to produce a compressed data block, wherein the compressing includes utilizing a state machine; and storing the compressed data block; wherein the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form. Because the

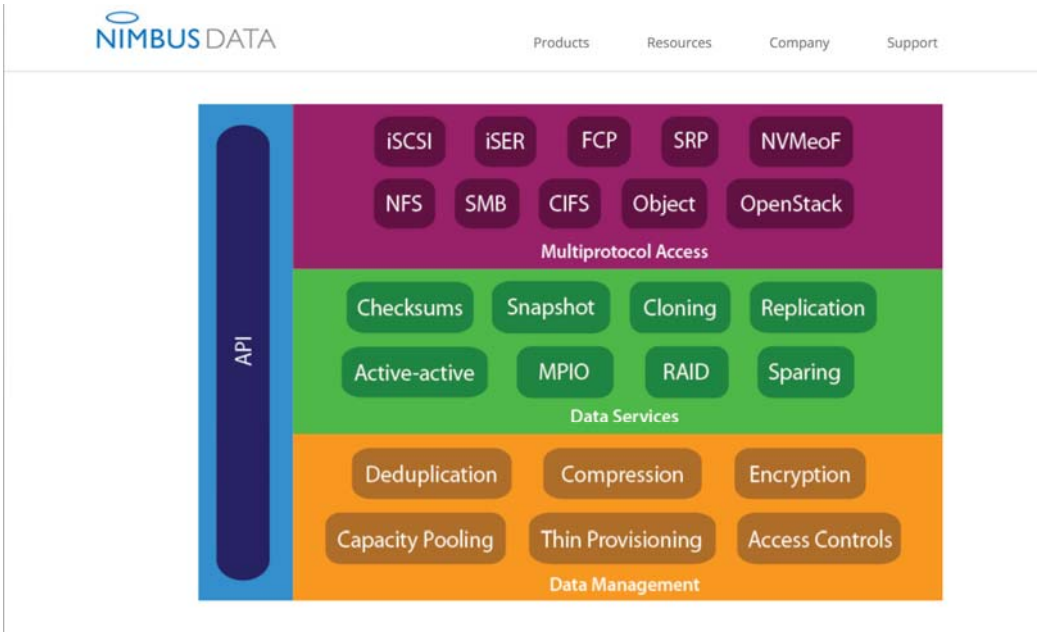
Accused Instrumentality is designed to operate as the claimed method for compressing, the Accused Instrumentality has no substantial non-infringing uses, and any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Nimbus Data's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '751 Patent.

29. The Accused Instrumentalities analyze content of a data block to identify a parameter, attribute, or value of the data block that excludes analyzing based solely on reading a descriptor. For example, the Accused Instrumentalities support data deduplication (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use data deduplication technique (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



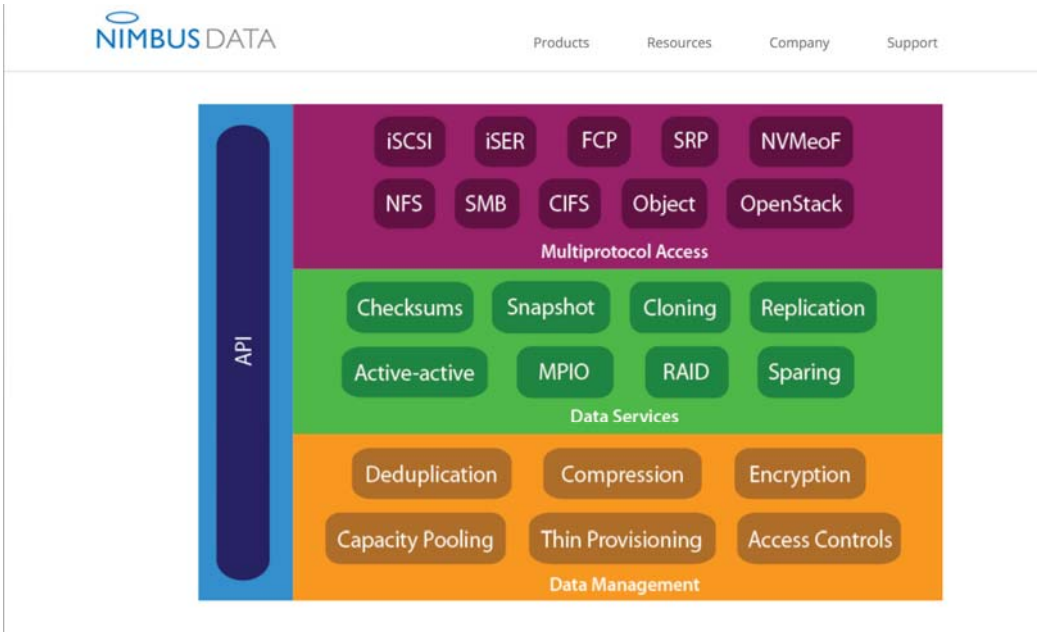
In particular, the Accused Instrumentalities analyze incoming data flow to detect duplicate data blocks. As such, deduplication technique divides the data flow "into chunks and a collision-resistant hash (e.g., SHA-1) is used as each chunk's identity. The dedup system maintains a global index of all hashes and uses it to detect duplicates." *See* "Online Deduplication for Databases" available at http://www.pdl.cmu.edu/PDL-FTP/Database/xu-sigmod17.pdf.

30. The Accused Instrumentalities select an encoder associated with the identified parameter, attribute, or value. For example, the Accused Instrumentalities support both LZ4 data compression and deduplication techniques (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use deduplication and compression techniques (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



As such, if a duplicate block is found, the Accused Instrumentalities use deduplication technique to eliminate redundancy across data blocks. If the data block is not the duplicate of previously stored data block, the Accused Instrumentalities use data compression technique to address redundancy across said data block.

31. The Accused Instrumentalities compress data in the data block with the selected encoder to produce a compressed data block, wherein the compressing includes utilizing a state machine. For example, the Accused Instrumentalities support both data compression and deduplication techniques (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use deduplication and compression techniques (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).

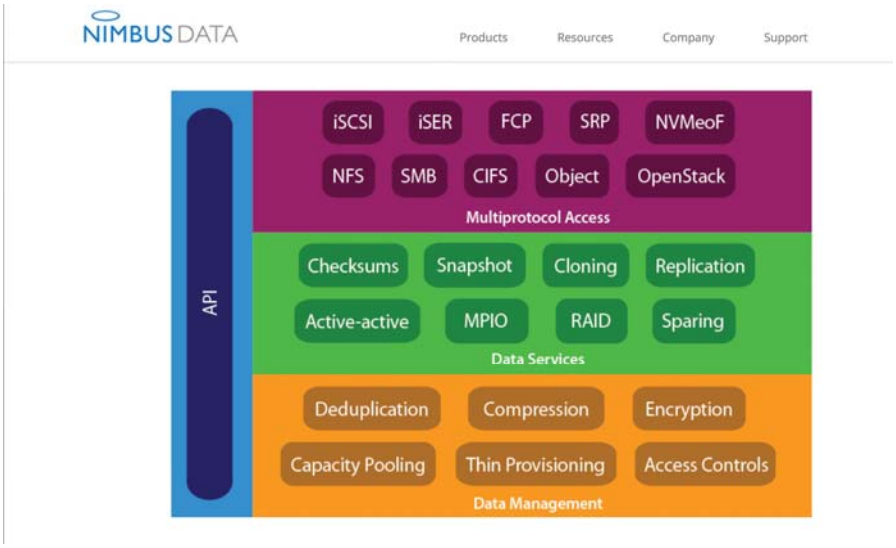


As such, deduplication eliminates "duplicate content across an entire data corpus, often achieving much higher compression ratios. The backup stream is divided into chunks and a collision-resistant hash (e.g., SHA-1) is used as each chunk's identity. The dedup system maintains a global index of all hashes and uses it to detect duplicates." *See* "Online Deduplication for Databases" available at http://www.pdl.cmu.edu/PDL-FTP/Database/xu-sigmod17.pdf.

32. The Accused Instrumentalities store the compressed data block. For example, Accused Instrumentalities store compressed data blocks in a memory device (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, Accused Instrumentalities disclose that "[N]earline HDDs are too slow to support inline deduplication and compression, but SSDs most definitely can, multiplying the

effective capacity even further." *See* e.g., https://nimbusdata.com/products/exadrive-platform/tco-benefits/.

33. The Accused Instrumentalities perform compressing data, wherein the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form. For example, the Accused Instrumentalities support both LZ4 data compression and deduplication techniques (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use deduplication and compression techniques (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



Due to the data reduction and acceleration features of the specific compression algorithms used, the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form. As such, Accused

Instrumentalities provide efficient deduplication that "reduces the amount of CPU resources and DRAM require to perform deduplication with exceptional speed, enabling such all-flash arrays to offer a distinct competitive advantage in power consumption, rack density, and cost. *See* e.g., https://nimbusdata.com/press/nimbus-data-granted-patent-for-ultra-efficient-deduplication-algorithm/.

34. On information and belief, Nimbus Data also infringes, directly and through induced infringement, and continues to infringe other claims of the '751 Patent.

35. On information and belief, use of the Accused Instrumentalities in their ordinary and customary fashion results in infringement of the methods claimed by the '751 Patent.

36. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Nimbus Data has injured Realtime and is liable to Realtime for infringement of the '751 Patent pursuant to 35 U.S.C. § 271.

37. As a result of Nimbus Data's infringement of the '751 Patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Nimbus Data's infringement, but in no event less than a reasonable royalty for the use made of the invention by Nimbus Data, together with interest and costs as fixed by the Court.

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 8,933,825

38. Plaintiff realleges and incorporates by reference the foregoing paragraphs, as if fully set forth herein.

39. Plaintiff Realtime is the owner by assignment of United States Patent No. 8,993,825 ("the '825 Patent") entitled "Data Compression Systems and Methods."

The ’825 Patent was duly and legally issued by the United States Patent and Trademark Office on January 13, 2015. A true and correct copy of the ’825 Patent is included as Exhibit C.

40. On information and belief, Nimbus Data has offered for sale, sold and/or imported into the United States Nimbus Data products and services that infringe the ’ 825 patent, and continues to do so. By way of illustrative example, these infringing products and services include, without limitation, Nimbus Data products and services, *e.g.*, ExaFlash Operating System, ExaFlash Vantage, Nimbus HALO, ExaFlash Array family such as A-series, B-series, C-series, D-series, S-class series, Gemini F400, Gemini F600, ExaDrive, and the system hardware on which they operate, and all versions and variations thereof since the issuance of the ’825 Patent (“Accused Instrumentalities”).

41. On information and belief, Nimbus Data has directly infringed and continues to infringe the ’825 Patent, for example, through its own use and testing of the Accused Instrumentalities, which in the ordinary course of their operation perform a claimed by Claim 1 of the ’825 Patent, comprising: associating at least one encoder to each one of a plurality of parameters or attributes of data; analyzing data within a data block to determine whether a parameter or attribute of the data within the data block is identified for the data block; wherein the analyzing of the data within the data block to identify a parameter or attribute of the data excludes analyzing based only on a descriptor that is indicative of the parameter or attribute of the data within the data block; identifying a first parameter or attribute of the data of the data block; compressing, if the first parameter or attribute of the data is the same as one of the plurality of parameter or attributes of the data, the data block with the at least one encoder associated with the one

of the plurality of parameters or attributes of the data that is the same as the first parameter or attribute of the data to provide a compressed data block; and compressing, if the first parameter or attribute of the data is not the same as one of the plurality of parameters or attributes of the data, the data block with a default encoder to provide the compressed data block. Upon information and belief, Nimbus Data uses the Accused Instrumentalities, which perform the infringing method, for its own internal non-testing business purposes, while testing the Accused Instrumentalities, and while providing technical support and repair services for the Accused Instrumentalities to Nimbus Data's customers.

42. On information and belief, Nimbus Data has had knowledge of the '825 Patent since at least the filing of the original Complaint in this action, or shortly thereafter, and on information and belief, Nimbus Data knew of the '825 Patent and knew of its infringement, including by way of this lawsuit.

43. Upon information and belief, Nimbus Data's affirmative acts of making, using, and selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe Claim 1 of the '825 Patent by associating at least one encoder to each one of a plurality of parameters or attributes of data; analyzing data within a data block to determine whether a parameter or attribute of the data within the data block is identified for the data block; wherein the analyzing of the data within the data block to identify a parameter or attribute of the data excludes analyzing based only on a descriptor that is indicative of the parameter or attribute of the data within the data block; identifying a first parameter or attribute of the data of the data block; compressing, if the first parameter or

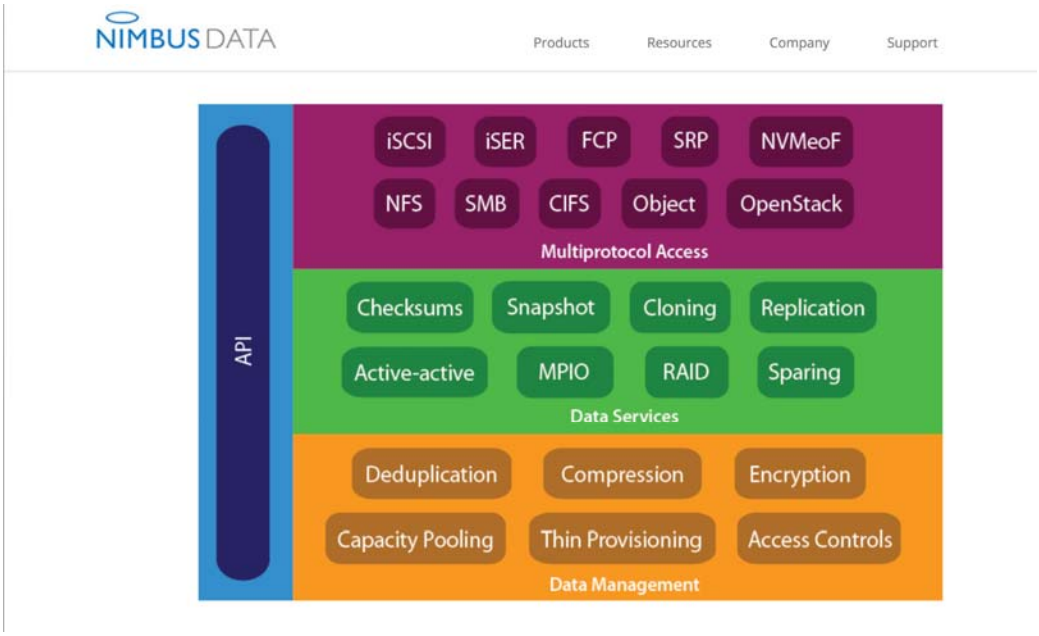
attribute of the data is the same as one of the plurality of parameter or attributes of the data, the data block with the at least one encoder associated with the one of the plurality of parameters or attributes of the data that is the same as the first parameter or attribute of the data to provide a compressed data block; and compressing, if the first parameter or attribute of the data is not the same as one of the plurality of parameters or attributes of the data, the data block with a default encoder to provide the compressed data block. For example, Nimbus Data explains to customers the benefits of using the Accused Instrumentalities, such as by touting their efficiency: "[E]xaFlash all-flash arrays offer virtually infinite on-demand scalability, up to 95% lower energy consumption, unmatched multiprotocol support, and up to 50x greater rack density, all at less than half the cost of competing solutions." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/. Moreover, Accused Instrumentalities advertise support for "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/. For similar reasons, Nimbus Data also induces its customers to use the Accused Instrumentalities to infringe other claims of the '825 Patent. Nimbus Data specifically intended and was aware that these normal and customary activities would infringe the '825 Patent. Nimbus Data performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '825 Patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Nimbus Data engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Nimbus Data 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 ’825 Patent, knowing that such use constitutes infringement of the ’825 Patent.

44. Nimbus Data also indirectly infringes the ’825 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 ’825 Patent and are not a staple article or commodity of commerce suitable for substantial non-infringing use. On information and belief, the Accused Instrumentality is designed to perform a method comprising: associating at least one encoder to each one of a plurality of parameters or attributes of data; analyzing data within a data block to determine whether a parameter or attribute of the data within the data block is identified for the data block; wherein the analyzing of the data within the data block to identify a parameter or attribute of the data excludes analyzing based only on a descriptor that is indicative of the parameter or attribute of the data within the data block; identifying a first parameter or attribute of the data of the data block; compressing, if the first parameter or attribute of the data is the same as one of the plurality of parameter or attributes of the data, the data block with the at least one encoder associated with the one of the plurality of parameters or attributes of the data that is the same as the first parameter or attribute of the data to provide a compressed data block; and compressing, if the first parameter or attribute of the data is not the same as one of the plurality of parameters or attributes of the data, the data block with a default encoder to provide the compressed data block.. Because the Accused Instrumentality is designed to operate as the claimed method for compressing, the Accused Instrumentality has no substantial non-infringing uses, and any other uses would

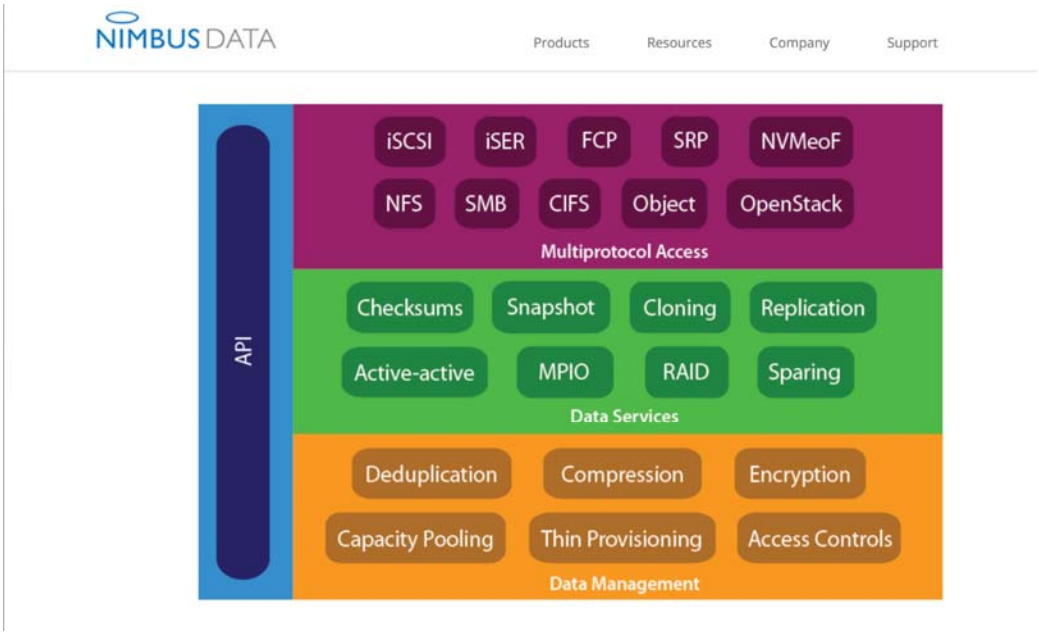
be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Nimbus Data's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '825 Patent.

45. The Accused Instrumentalities associate at least one encoder to each one of a plurality of parameters or attributes of data and analyze data within a data block to determine whether a parameter or attribute of the data within the data block is identified for the data block; wherein the analyzing of the data within the data block to identify a parameter or attribute of the data excludes analyzing based only on a descriptor that is indicative of the parameter or attribute of the data within the data block. For example, the Accused Instrumentalities support data deduplication (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use data deduplication technique (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



In particular, the Accused Instrumentalities analyze incoming data flow to detect duplicate data blocks. As such, deduplication technique divides the data flow "into chunks and a collision-resistant hash (e.g., SHA-1) is used as each chunk's identity. The dedup system maintains a global index of all hashes and uses it to detect duplicates." *See* "Online Deduplication for Databases" available at http://www.pdl.cmu.edu/PDL-FTP/Database/xu-sigmod17.pdf. For example, the Accused Instrumentalities also support both LZ4 data compression (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As such, if a duplicate block is found, the Accused Instrumentalities use deduplication technique to eliminate redundancy across data blocks. If the data block is not the duplicate of previously stored data block, the Accused Instrumentalities use data compression technique to address redundancy across said data block.

46. The Accused Instrumentalities identify a first parameter or attribute of the data of the data block and compress, if the first parameter or attribute of the data is the same as one of the plurality of parameter or attributes of the data, the data block with the at least one encoder associated with the one of the plurality of parameters or attributes of the data that is the same as the first parameter or attribute of the data to provide a compressed data block." For example, the Accused Instrumentalities support data deduplication (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As another example, the Accused Instrumentalities running ExaFlash Operating System use data deduplication technique (*See* e.g., ExaFlash Operating System platform architecture below available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/).



In particular, the Accused Instrumentalities analyze incoming data flow to detect duplicate data blocks. As such, deduplication technique divides the data flow "into chunks and a

collision-resistant hash (e.g., SHA-1) is used as each chunk's identity. The dedup system maintains a global index of all hashes and uses it to detect duplicates." *See* "Online Deduplication for Databases" available at http://www.pdl.cmu.edu/PDL-FTP/Database/xu-sigmod17.pdf..

47. The Accused Instrumentalities compress, if the first parameter or attribute of thee data is not the same as one of the plurality of parameters or attributes of the data, the data block with a default encoder to provide the compressed data bock. For example, the Accused Instrumentalities also support both LZ4 data compression (e.g., "[I]nline variable deduplication and LZ4 compression maximize storage utilization." *See* e.g., "Infinite scale. Infinite possibilities." available at https://nimbusdata.com/products/exaflash-platform/all-flash-arrays/). As such, if a duplicate block is found, the Accused Instrumentalities use deduplication technique to eliminate redundancy across data blocks. If the data block is not the duplicate of previously stored data block, the Accused Instrumentalities use data compression technique to address redundancy across said data block.

48. On information and belief, Nimbus Data also infringes, directly and through induced infringement, and continues to infringe other claims of the '852 Patent.

49. On information and belief, use of the Accused Instrumentalities in their ordinary and customary fashion results in infringement of the methods claimed by the '852 Patent.

50. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused

Instrumentalities' compression features, Nimbus Data has injured Realtime and is liable to Realtime for infringement of the '852 Patent pursuant to 35 U.S.C. § 271.

51. As a result of Nimbus Data's infringement of the '852 Patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Nimbus Data's infringement, but in no event less than a reasonable royalty for the use made of the invention by Nimbus Data, 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 Nimbus Data has infringed, either literally and/or under the doctrine of equivalents, the '458 Patent, the '751 Patent, and the '852 Patent;

b. A permanent injunction prohibiting Nimbus Data from further acts of infringement of the '458 Patent, the '751 Patent, and the '852 Patent;

c. A judgment and order requiring Nimbus Data to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for its infringement of '458 Patent, the '751 Patent, and the '852 Patent; and

d. A judgment and order requiring Nimbus Data 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: February 8, 2019

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