

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

REALTIME DATA LLC d/b/a IXO,

Plaintiff,

v.

INTERNATIONAL BUSINESS MACHINES

CORPORATION,

Defendant.

C.A. No. 6:18-cv-188

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 International Business Machines Corporation (“Defendant” or “IBM”):

PARTIES

1. Realtime is a limited liability company organized under the laws of the State of New York. Realtime has a place of business at 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 47 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 IBM is a New York corporation with its principal place of business at 1 New Orchard Road, Armonk, NY 10504. IBM has regular and established places of business in this District, including, e.g., at 3010 Gaylord Pkwy Ste 300, Frisco, TX 75034. IBM offers its products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas and in this District. IBM may be served with process at its principal place of business, at 1 New Orchard Road, Armonk, NY 10504.

3. Realtime met with IBM in or about 2000, where Realtime and IBM discussed Realtime's technologies.

JURISDICTION AND VENUE

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

5. This Court has personal jurisdiction over Defendant IBM in this action because IBM has committed acts within this District giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over IBM would not offend traditional notions of fair play and substantial justice. IBM, 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.

6. Venue is proper in this district under 28 U.S.C. § 1400(b). IBM is

registered to do business in Texas, has transacted business in this District, has committed acts of direct and indirect infringement in this District, and has a regular and established place of business in this District, as set forth above.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 9,054,728

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

8. Plaintiff Realtime is the owner by assignment of United States Patent No. 9,054,728 (“the ’728 Patent”) entitled “Data compression systems and methods.” The ’728 Patent was duly and legally issued by the United States Patent and Trademark Office on June 9, 2015. A true and correct copy of the ’728 Patent is included as Exhibit A.

9. On information and belief, IBM has offered for sale, sold and/or imported into the United States IBM products that infringe the ’728 Patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, IBM’s products and services, e.g., IBM Aspera products, IBM DB2 (e.g. Versions 9.5, 9.7), Data Compression (zEDC) for z/OS and zEDC Express, IBM SAN Volume Controller, IBM Storwize V7000, IBM FlashSystem V9000, the IBM System Storage TS7600 series including IBM System Storage TS7600 with ProtecTIER, IBM TS7610 – Entry Edition, IBM TS7650 – Appliance Edition, IBM TS7650G – Enterprise Edition, IBM TS7680 – Gateway Edition for System z, the IBM TS7610 ProtecTIER Deduplication Application Express (3959-SM1), IBM TS7650 ProtecTIER Deduplication Appliance (3958-AP1), IBM TS7650G ProtecTIER Deduplication Gateway (3958-DD4), IBM TS7680 ProtecTIER Deduplication Gateway for System z (3958-DE3), the IBM Tivoli Storage Manager (e.g. version 6.2.0), IBM Spectrum Protect, IBM CommonStore, and all versions and variations thereof since the issuance of the ’728 Patent (“Accused

Instrumentality”).

10. On information and belief, IBM has directly infringed and continues to infringe the '728 Patent, for example, through its own use and testing of the Accused Instrumentality, which constitute systems for compressing data claimed by Claim 1 of the '728 Patent, comprising a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. Upon information and belief, IBM uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support and repair services for the Accused Instrumentality to IBM's customers.

11. On information and belief, IBM has had knowledge of the '728 Patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, IBM knew of the '728 Patent and knew of its infringement, including by way of this lawsuit.

12. IBM's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentality has induced and continues to induce users of the Accused Instrumentality to use the Accused Instrumentality in its normal and customary way on compatible systems to infringe the '728 Patent, knowing that when the Accused Instrumentality is used in its ordinary and customary manner with such compatible

systems, such systems constitute infringing systems for compressing data comprising; a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified.

13. For example, IBM explains to customers the benefits of using the Accused Instrumentality: Users or customers can “[d]iscover IBM Aspera high-speed data transfer capabilities” where for “High-speed collaboration” users can “[s]end and share large files and data sets at maximum speeds,” for “Big data transport and sync,” users can “[q]uickly transfer, distribute and sync huge files and data sets globally” and for “Transfer automation and management,” users can “[f]ully orchestrate, monitor and control data transfer and workflows.” See <https://www.ibm.com/cloud/high-speed-data-transfer>. Furthermore, users or customers can also “[r]edefine the standards for high-speed data transfer with IBM Aspera” where for “FASP® for maximum speed,” users can “[e]xperience [IBM]’s patented transport technology that consistently ranks first in every WAN throughput test in which it is evaluated,” for “Direct-to-cloud storage,” users can “[m]ove data to, from and between major cloud object storages with Aspera natively integrated for high performance” and for “Open, scalable architecture,” users can “[l]everage virtually any cloud, hybrid or on-premises infrastructure and storage using multi-tenant SaaS [software as a service] and single-tenant architecture and autoscale capabilities.” *Id.* An IBM website with a title declaring “Accelerate collaboration with

fast sharing of large files and data sets” states that “Meet the demands of complex global teams with the ability to quickly and securely exchange or share huge files and folders with each other, including customers and partners. IBM Aspera® solutions feature the patented FASP® transfer protocol — which consistently ranks first in every WAN transfer throughput benchmark — to fully use your available bandwidth to maximize transfer speeds. With the latest IBM Aspera Files SaaS and other Aspera file sending and sharing solutions, users can easily exchange big files and directories at high speed through a user-friendly interface. Advanced security, encryption and user access controls help ensure that your critical data is fully protected.” *See* <https://www.ibm.com/cloud/high-speed-data-transfer/send-share>. Another IBM website with a title declaring “Transfer, sync and distribute large files and big data fast” states that “For all the amazing technological progress made in analytics and cloud, the fundamental challenges of reliably transferring and distributing large files and volumes of big data at high speed to locations around the world still persist. In fact, this big data movement problem has become more pervasive and daunting across industries with the exponential growth of data generated globally. IBM Aspera® solutions are designed to help you globally ingest, distribute and synchronize huge files and folders directly to and from any major cloud or on-premises storage, without compromising performance or security. Built on Aspera’s patented FASP® transfer protocol — which consistently ranks first in every WAN transfer throughput benchmark — IBM Aspera solutions offer secure, scalable capabilities that can grow with your business.” *See* <https://www.ibm.com/cloud/high-speed-data-transfer>. Another IBM website with a title declaring “Automate and manage reliable file transfer workflows at scale” states that “IBM Aspera® automation and management solutions provide robust file transfer orchestration, monitoring, control and reporting capabilities. These solutions save time, increase resiliency, and maximize the value of network infrastructure by verifying data integrity and security in transit and triggering notifications, data processing and format

translation on arrival. Designed for extreme scalability, they can accommodate virtually any set of workflow requirements to transfer big files and data sets between any location using the patented IBM Aspera FASP® transfer protocol, whether on premises or in public, private or hybrid cloud platforms. Highly visual graphical interfaces enable easy workflow design and testing, accurate real-time transfer monitoring and progress, and extensive customizable reporting.” See <https://www.ibm.com/cloud/high-speed-data-transfer/manage-automate-workflow>.

14. As a further example, an IBM website with the title “IBM CommonStore single instance store (SIS) feature restrictions” states that: “The IBM® CommonStore documentation describes the single instance store (SIS) feature and claims: ‘Single-instance storing ensures that only one copy of a document is kept in the archive, no matter how many times the same document was archived by different users.’” See <http://www-01.ibm.com/support/docview.wss?uid=swg21255187>.

15. As a further example, an IBM website describing the IBM Storwize V7000 Storage Systems states that: “The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.” See <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077>. Moreover, a document describing the IBM FlashSystem V9000 states that “IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” (para. 26 on page 4 of 7) and “Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to

300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” (para. 40 on page 7 of 7). *See* <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF>.

16. As a further example, an IBM document on its ProtecTIER and Tivoli Storage Manager states that “IBM ProtecTIER’s unique, patented deduplication technology is unmatched in the industry in terms of its scalability, performance and data integrity characteristics. ProtecTIER is offered as a gateway or disk-based appliance” (page 2) and “Another option for server side deduplication is Tivoli Storage Manager Version 6 native storage pool deduplication which offers reduction of backup and archive data. Native deduplication helps customers store more backup data on the same disk capacity, thereby enabling additional recovery points without incurring additional hardware costs” (page 2) as well as “ProtecTier and Tivoli Storage Manager native deduplication provide two options for server side deduplication of data” (page 3). *See* <https://www.ibm.com/developerworks/community/wikis/form/anonymous/api/wiki/f731037e-c0cf-436e-88b5-862b9a6597c3/page/7d14e7c2-752d-450c-9fdf-c7fcf324f18/attachment/944d976c-6b61-40e3-874d-e2f7e9cb877d/media/IBM%20Data%20Deduplication.pdf>. Moreover, a paper from IBM describes in detail data deduplication, including data deduplication with ProtecTIER and Tivoli Storage Manager. *See* <http://www.redbooks.ibm.com/redbooks/pdfs/sg247888.pdf>.

17. In addition, various sections of papers on IBM products such as the IBM TS7600 with ProtecTIER Version 3.3 and IBM TS7680 Deduplication ProtecTIER Gateway for System z also specifically mention the feature of “content-aware data deduplication.” *See* <https://books.google.com/books?id=CbLEAgAAQBAJ> (Section 1.2.2 “Content aware” on page 7, describing content-aware deduplication for the IBM System

Storage TS7600 with ProtecTIER Version 3.3); <https://books.google.com/books?id=FITAAGAAQBAJ> (pages 6-7, describing content-aware data deduplication for the IBM TS7680 ProtecTIER Gateway for System z).

18. IBM also induces its customers to use the Accused Instrumentalities to infringe other claims of the '728 Patent. IBM specifically intended and was aware that the normal and customary use of the Accused Instrumentality on compatible systems would infringe the '728 Patent. IBM performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '728 Patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, IBM engaged in such inducement to promote the sales of the Accused Instrumentality, *e.g.*, through IBM's user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '728 Patent. Accordingly, IBM 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 '728 Patent, knowing that such use of the Accused Instrumentality with compatible systems will result in infringement of the '728 Patent.

19. IBM also indirectly infringes the '728 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 '728 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 create systems for compressing data comprising; a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify

the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. Because the Accused Instrumentality is designed to operate as the claimed system for compressing input data, the Accused Instrumentality has no substantial non-infringing uses, and any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. IBM's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '728 Patent.

20. The Accused Instrumentality is a system for compressing data, comprising a processor. For example, the physical appliance versions of the Accused Instrumentality contains a processor, and the virtual appliance versions of the Accused Instrumentality must run on hardware containing a processor running the hypervisor on which the virtual appliance versions run. *See, e.g.,* <http://www-01.ibm.com/support/docview.wss?uid=tss1wp102527&aid=1> (“processor core allocation when Real-time Compression is enabled” (page 8) as well as, under “Processor utilization comparison” the text “In the second generation of Storwize V7000, it is possible to dedicate a set of processors for compression...” (page 17)); <http://www.redbooks.ibm.com/redpapers/pdfs/redp4859.pdf> (describing processor utilization for compression on pages 28, 75-76, 82, 89-93).

21. The Accused Instrumentality is a system for compressing data, comprising one or more content dependent data compression encoders. For example, the Accused Instrumentality performs deduplication, which is a content dependent data compression encoder. Performing deduplication results in representation of data with fewer bits. *See,*

e.g., <https://books.google.com/books?id=CbLEAgAAQBAJ> (Section 1.2.2 “Content aware” on page 7, describing content-aware deduplication for the IBM System Storage TS7600 with ProtecTIER Version 3.3); <https://books.google.com/books?id=FITAAGAAQBAJ> (pages 6-7, describing content-aware data deduplication for the IBM TS7680 ProtecTIER Gateway for System z).

22. The Accused Instrumentality comprises a single data compression encoder. *See, e.g.*, <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077> (“The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.”); *See* <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF> (“IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” [para. 26 on page 4 of 7] and “Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” [para. 40 on page 7 of 7].”)

23. The Accused Instrumentality analyzes data within a data block to identify one or more parameters or attributes of the data, for example, whether the data is duplicative of data previously transmitted and/or stored, where the analysis does not rely

only on the descriptor. *See, e.g.,* <https://www.ibm.com/developerworks/community/wikis/form/anonymous/api/wiki/f731037e-c0cf-436e-88b5-862b9a6597c3/page/7d14e7c2-752d-450c-9fdf-c7fcf324f18/attachment/944d976c-6b61-40e3-874d-e2f7e9cb877d/media/IBM%20Data%20Deduplication.pdf> (describing data deduplication features of IBM's ProtecTier and Tivoli Storage Manager); <http://www.redbooks.ibm.com/redbooks/pdfs/sg247888.pdf> (a paper from IBM describing in detail data deduplication, including data deduplication with ProtecTIER and Tivoli Storage Manager).

24. The Accused Instrumentality performs content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified. *See, e.g.,* <https://books.google.com/books?id=CbLEAgAAQBAJ> (Section 1.2.2 "Content aware" on page 7, describing content-aware deduplication for the IBM System Storage TS7600 with ProtecTIER Version 3.3, applicable also to content dependent data compression); <https://books.google.com/books?id=FITAAGAAQBAJ> (pages 6-7, describing content-aware data deduplication for the IBM TS7680 ProtecTIER Gateway for System z, applicable also to content dependent data compression); <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077> ("The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years."); *See* <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF> ("IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our

clients) and a lower latency than competing solutions” [para. 26 on page 4 of 7] and “Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” [para. 40 on page 7 of 7].”)

25. The Accused Instrumentality performs data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. *See, e.g.,* <http://www-01.ibm.com/support/docview.wss?uid=tss1wp102527&aid=1> (mentioning “processor core allocation when Real-time Compression is enabled” – page 8 – as well as, under “Processor utilization comparison” the text “In the second generation of Storwize V7000, it is possible to dedicate a set of processors for compression...”); <http://www.redbooks.ibm.com/redpapers/pdfs/redp4859.pdf> (describing processor utilization for compression on pages 28, 75-76, 82, 89-93).

26. IBM also infringes other claims of the ’728 Patent, directly and through inducing infringement and contributory infringement.

27. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentality, and touting the benefits of using the Accused Instrumentality’s compression features, IBM has injured Realtime and is liable to Realtime for infringement of the ’728 Patent pursuant to 35 U.S.C. § 271.

28. As a result of IBM’s infringement of the ’728 Patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for IBM’s infringement, but in no event less than a reasonable royalty for the use made of the

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

COUNT II

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

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

30. 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 is included as Exhibit B.

31. On information and belief, IBM has offered for sale, sold and/or imported into the United States IBM products that infringe the ’530 Patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, IBM’s products and services, e.g., IBM Aspera products, IBM DB2 (e.g. Versions 9.5, 9.7), Data Compression (zEDC) for z/OS and zEDC Express, IBM SAN Volume Controller, IBM Storwize V7000, IBM FlashSystem V9000, the IBM System Storage TS7600 series including IBM System Storage TS7600 with ProtecTIER, IBM TS7610 – Entry Edition, IBM TS7650 – Appliance Edition, IBM TS7650G – Enterprise Edition, IBM TS7680 – Gateway Edition for System z, the IBM TS7610 ProtecTIER Deduplication Application Express (3959-SM1), IBM TS7650 ProtecTIER Deduplication Appliance (3958-AP1), IBM TS7650G ProtecTIER Deduplication Gateway (3958-DD4), IBM TS7680 ProtecTIER Deduplication Gateway for System z (3958-DE3), the IBM Tivoli Storage Manager (e.g. version 6.2.0), IBM Spectrum Protect, IBM CommonStore, and all versions and variations thereof since the issuance of the ’530 patent (“Accused Instrumentality”).

32. On information and belief, IBM has directly infringed and continues to infringe the '530 Patent, for example, through its own use and testing of the Accused Instrumentality, which 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. Upon information and belief, IBM uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support and repair services for the Accused Instrumentality to IBM's customers.

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

34. Upon information and belief, IBM'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 '530 Patent by making or using 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.

35. For example, IBM explains to customers the benefits of using the Accused Instrumentality: Users or customers can “[d]iscover IBM Aspera high-speed data transfer capabilities” where for “High-speed collaboration” users can “[s]end and share large files and data sets at maximum speeds,” for “Big data transport and sync,” users can “[q]uickly transfer, distribute and sync huge files and data sets globally” and for “Transfer automation and management,” users can “[f]ully orchestrate, monitor and control data transfer and workflows.” See <https://www.ibm.com/cloud/high-speed-data-transfer>. Furthermore, users or customers can also “[r]edefine the standards for high-speed data transfer with IBM Aspera” where for “FASP® for maximum speed,” users can “[e]xperience [IBM]’s patented transport technology that consistently ranks first in every WAN throughput test in which it is evaluated,” for “Direct-to-cloud storage,” users can “[m]ove data to, from and between major cloud object storages with Aspera natively integrated for high performance” and for “Open, scalable architecture,” users can “[l]everage virtually any cloud, hybrid or on-premises infrastructure and storage using multi-tenant SaaS [software as a service] and single-tenant architecture and autoscale capabilities.” *Id.* An IBM website with a title declaring “Accelerate collaboration with fast sharing of large files and data sets” states that “Meet the demands of complex global

teams with the ability to quickly and securely exchange or share huge files and folders with each other, including customers and partners. IBM Aspera® solutions feature the patented FASP® transfer protocol — which consistently ranks first in every WAN transfer throughput benchmark — to fully use your available bandwidth to maximize transfer speeds. With the latest IBM Aspera Files SaaS and other Aspera file sending and sharing solutions, users can easily exchange big files and directories at high speed through a user-friendly interface. Advanced security, encryption and user access controls help ensure that your critical data is fully protected.” See <https://www.ibm.com/cloud/high-speed-data-transfer/send-share>. Another IBM website with a title declaring “Transfer, sync and distribute large files and big data fast” states that “For all the amazing technological progress made in analytics and cloud, the fundamental challenges of reliably transferring and distributing large files and volumes of big data at high speed to locations around the world still persist. In fact, this big data movement problem has become more pervasive and daunting across industries with the exponential growth of data generated globally. IBM Aspera® solutions are designed to help you globally ingest, distribute and synchronize huge files and folders directly to and from any major cloud or on-premises storage, without compromising performance or security. Built on Aspera’s patented FASP® transfer protocol — which consistently ranks first in every WAN transfer throughput benchmark — IBM Aspera solutions offer secure, scalable capabilities that can grow with your business.” See <https://www.ibm.com/cloud/high-speed-data-transfer>. Another IBM website with a title declaring “Automate and manage reliable file transfer workflows at scale” states that “IBM Aspera® automation and management solutions provide robust file transfer orchestration, monitoring, control and reporting capabilities. These solutions save time, increase resiliency, and maximize the value of network infrastructure by verifying data integrity and security in transit and triggering notifications, data processing and format translation on arrival. Designed for extreme scalability, they can accommodate virtually

any set of workflow requirements to transfer big files and data sets between any location using the patented IBM Aspera FASP® transfer protocol, whether on premises or in public, private or hybrid cloud platforms. Highly visual graphical interfaces enable easy workflow design and testing, accurate real-time transfer monitoring and progress, and extensive customizable reporting.” See <https://www.ibm.com/cloud/high-speed-data-transfer/manage-automate-workflow>.

36. As a further example, an IBM website with the title “IBM CommonStore single instance store (SIS) feature restrictions” states that: “The IBM® CommonStore documentation describes the single instance store (SIS) feature and claims: ‘Single-instance storing ensures that only one copy of a document is kept in the archive, no matter how many times the same document was archived by different users.’” See <http://www-01.ibm.com/support/docview.wss?uid=swg21255187>.

37. As a further example, an IBM website describing the IBM Storwize V7000 Storage Systems states that: “The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.” See <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077>. Moreover, a document describing the IBM FlashSystem V9000 states that “IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” (para. 26 on page 4 of 7) and “Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the

capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” (para. 40 on page 7 of 7). *See* <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF>.

38. As a further example, an IBM document on its ProtecTIER and Tivoli Storage Manager states that “IBM ProtecTIER’s unique, patented deduplication technology is unmatched in the industry in terms of its scalability, performance and data integrity characteristics. ProtecTIER is offered as a gateway or disk-based appliance” (page 2) and “Another option for server side deduplication is Tivoli Storage Manager Version 6 native storage pool deduplication which offers reduction of backup and archive data. Native deduplication helps customers store more backup data on the same disk capacity, thereby enabling additional recovery points without incurring additional hardware costs” (page 2) as well as “ProtecTier and Tivoli Storage Manager native deduplication provide two options for server side deduplication of data” (page 3). *See* <https://www.ibm.com/developerworks/community/wikis/form/anonymous/api/wiki/f731037e-c0cf-436e-88b5-862b9a6597c3/page/7d14e7c2-752d-450c-9fdf-c7fcf324f18/attachment/944d976c-6b61-40e3-874d-e2f7e9cb877d/media/IBM%20Data%20Deduplication.pdf>. Moreover, a paper from IBM describes in detail data deduplication, including data deduplication with ProtecTIER and Tivoli Storage Manager. *See* <http://www.redbooks.ibm.com/redbooks/pdfs/sg247888.pdf>.

39. In addition, various sections of papers on IBM products such as the IBM TS7600 with ProtecTIER Version 3.3 and IBM TS7680 Deduplication ProtecTIER Gateway for System z also specifically mention the feature of “content-aware data deduplication.” *See* <https://books.google.com/books?id=CbLEAgAAQBAJ> (Section 1.2.2 “Content aware” on page 7, describing content-aware deduplication for the IBM System Storage TS7600 with ProtecTIER Version 3.3);

<https://books.google.com/books?id=FITAAGAAQBAJ> (pages 6-7, describing content-aware data deduplication for the IBM TS7680 ProtecTIER Gateway for System z).

40. IBM also induces its customers to use the Accused Instrumentalities to infringe other claims of the '530 Patent. IBM specifically intended and was aware that these normal and customary activities would infringe the '530 Patent. IBM 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, IBM engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, IBM 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 '530 Patent, knowing that such use constitutes infringement of the '530 Patent.

41. IBM 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 Instrumentality is designed to function with compatible hardware to create 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. Because the Accused Instrumentality is designed to operate as the claimed system 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. IBM's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '530 Patent.

42. The Accused Instrumentality includes the memory device and includes the data accelerator, wherein said data accelerator is coupled to said memory device. For example, the physical appliance versions of the Accused Instrumentality must contain a memory device, and the virtual appliance versions of the Accused Instrumentality must run on hardware containing a memory device running the hypervisor on which the virtual appliance versions run. *See, e.g.,* <http://www-01.ibm.com/support/docview.wss?uid=tss1wp102527&aid=1> (mentioning memory devices, memories and memories used for processors on page 8 by stating “[i]n order to support additional memory for Real-time Compression, an additional 23 GB of random access memory (RAM) is supported in each canister” and “processor core allocation when Real-time Compression is enabled” (also page 8) as well as, under “Processor utilization comparison” the text “In the second generation of Storwize V7000, it is possible to dedicate a set of processors for compression...” (page 17)); <http://www.redbooks.ibm.com/redpapers/pdfs/redp4859.pdf> (describing memory devices, memories and memories used for processor cores on pages 16, 23, 36, 74-76, 86, 89-90, 93 and describing processor utilization for compression on pages 28, 75-76, 82, 89-93).

43. The Accused Instrumentality receives an incoming stream of data. *See, e.g.,*

https://www.ibm.com/developerworks/community/blogs/storage_redbooks/entry/ibm_protectier_implementation_and_best_practices_guide?lang=en (“The ProtecTIER system can be integrated into an existing backup solution, and provides deduplication when saving files with backup solutions such as IBM Tivoli Storage Manager, Symantec NetBackup and BackupExec, EMC Networker, and IBM i Backup, Recovery, and Media Services (BRMS). The FSI support helps facilitate rapid data restoration, and the IBM HyperFactor algorithm helps maximize disk usage by eliminating data duplicates from the incoming backup data streams.”).

44. The Accused Instrumentality’s received data stream comprise more than one data block. *See, e.g.,* <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=OC&subtype=NA&htmlfid=897/ENUS5724-U93&appname=System%20Storage> (“In addition, it offers rapid recovery with the ability to almost instantly extract any file or application object from the stored data blocks of any stored snapshot.”).

45. The Accused Instrumentality compresses said data stream 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. *See, e.g.,* <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077> (“The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.”); *See* <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF> (“IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” [para. 26 on page 4 of 7] and

“Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” [para. 40 on page 7 of 7].”).

46. The first (deduplication) and second (compression) compression techniques used by the Accused Instrumentality described above are different. *See, e.g.,* <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077> (“The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.”); *See* <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF> (“IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” [para. 26 on page 4 of 7] and “Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of

compression outweigh the performance overhead.” [para. 40 on page 7 of 7].”)

47. After compression, said compressed data stream is stored on said memory device. *See, e.g.,* <http://www-01.ibm.com/support/docview.wss?uid=tss1wp102527&aid=1> (mentioning memory devices, memories and memories used for processors on page 8 by stating “[i]n order to support additional memory for Real-time Compression, an additional 23 GB of random access memory (RAM) is supported in each canister” and “processor core allocation when Real-time Compression is enabled” (also page 8) as well as, under “Processor utilization comparison” the text “In the second generation of Storwize V7000, it is possible to dedicate a set of processors for compression...” (page 17)); <http://www.redbooks.ibm.com/redpapers/pdfs/redp4859.pdf> (describing memory devices, memories and memories used for processor cores on pages 16, 23, 36, 74-76, 86, 89-90, 93 and describing processor utilization for compression on pages 28, 75-76, 82, 89-93).

48. Said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form. For example, users or customers can “[d]iscover IBM Aspera high-speed data transfer capabilities” where for “High-speed collaboration” users can “[s]end and share large files and data sets at maximum speeds,” for “Big data transport and sync,” users can “[q]uickly transfer, distribute and sync huge files and data sets globally” and for “Transfer automation and management,” users can “[f]ully orchestrate, monitor and control data transfer and workflows.” *See* <https://www.ibm.com/cloud/high-speed-data-transfer>. Furthermore, users or customers can also “[r]edefine the standards for high-speed data transfer with IBM Aspera” where for “FASP® for maximum speed,” users can “[e]xperience [IBM]’s patented transport technology that consistently ranks first in every WAN throughput test in which it is evaluated,” for “Direct-to-cloud storage,” users can “[m]ove data to, from and between major cloud object storages with Aspera natively integrated for high performance” and for “Open, scalable architecture,” users can “[l]everage virtually any cloud, hybrid or on-

premises infrastructure and storage using multi-tenant SaaS [software as a service] and single-tenant architecture and autoscale capabilities.” *Id.* An IBM website with a title declaring “Accelerate collaboration with fast sharing of large files and data sets” states that “Meet the demands of complex global teams with the ability to quickly and securely exchange or share huge files and folders with each other, including customers and partners. IBM Aspera® solutions feature the patented FASP® transfer protocol — which consistently ranks first in every WAN transfer throughput benchmark — to fully use your available bandwidth to maximize transfer speeds. With the latest IBM Aspera Files SaaS and other Aspera file sending and sharing solutions, users can easily exchange big files and directories at high speed through a user-friendly interface. Advanced security, encryption and user access controls help ensure that your critical data is fully protected.” See <https://www.ibm.com/cloud/high-speed-data-transfer/send-share>.

49. The Accused Instrumentality stores a first data descriptor on said memory device indicative of said first compression technique, such as a pointer to a deduplicated data block, and utilize said first descriptor to decompress the portion of said compressed data stream associated with said first data block. See, e.g., <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077> (“The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.”); See <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF> (“IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” [para. 26 on page 4 of 7] and “Real-time Compression involves complex algorithms that require significant control

enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” [para. 40 on page 7 of 7].”)

50. On information and belief, IBM also infringes, directly and through induced infringement and contributory infringement, and continues to infringe other claims of the '530 Patent.

51. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the '530 Patent.

52. 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, IBM has injured Realtime and is liable to Realtime for infringement of the '530 Patent pursuant to 35 U.S.C. § 271.

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

COUNT III

INFRINGEMENT OF U.S. PATENT NO. 9,116,908

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

55. Plaintiff Realtime is the owner by assignment of United States Patent No. 9,116,908 (“the ’908 Patent”) entitled “System and methods for accelerated data storage and retrieval.” The ’908 Patent was duly and legally issued by the United States Patent and Trademark Office on August 25, 2015. A true and correct copy of the ’908 Patent is included as Exhibit C.

56. On information and belief, IBM has offered for sale, sold and/or imported into the United States IBM products that infringe the ’908 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, IBM’s products and services, e.g., IBM Aspera products, IBM DB2 (e.g. Versions 9.5, 9.7), Data Compression (zEDC) for z/OS and zEDC Express, IBM SAN Volume Controller, IBM Storwize V7000, IBM FlashSystem V9000, the IBM System Storage TS7600 series including IBM System Storage TS7600 with ProtecTIER, IBM TS7610 – Entry Edition, IBM TS7650 – Appliance Edition, IBM TS7650G – Enterprise Edition, IBM TS7680 – Gateway Edition for System z, the IBM TS7610 ProtecTIER Deduplication Application Express (3959-SM1), IBM TS7650 ProtecTIER Deduplication Appliance (3958-AP1), IBM TS7650G ProtecTIER Deduplication Gateway (3958-DD4), IBM TS7680 ProtecTIER Deduplication Gateway for System z (3958-DE3), the IBM Tivoli Storage Manager (e.g. version 6.2.0), IBM Spectrum Protect, IBM CommonStore, and all versions and variations thereof since the issuance of the ’908 patent (“Accused Instrumentality”).

57. On information and belief, IBM has directly infringed and continues to infringe the ’908 patent, for example, through its own use and testing of the Accused Instrumentality, which constitutes a system comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are

stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form. Upon information and belief, IBM uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support and repair services for the Accused Instrumentality to IBM's customers.

58. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the '908 patent.

59. On information and belief, IBM has had knowledge of the '908 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, IBM knew of the '908 patent and knew of its infringement, including by way of this lawsuit.

60. Upon information and belief, IBM'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 '908 patent by making or using a system comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form.

61. For example, IBM explains to customers the benefits of using the Accused Instrumentality: Users or customers can "[d]iscover IBM Aspera high-speed data transfer

capabilities” where for “High-speed collaboration” users can “[s]end and share large files and data sets at maximum speeds,” for “Big data transport and sync,” users can “[q]uickly transfer, distribute and sync huge files and data sets globally” and for “Transfer automation and management,” users can “[f]ully orchestrate, monitor and control data transfer and workflows.” See <https://www.ibm.com/cloud/high-speed-data-transfer>. Furthermore, users or customers can also “[r]edefine the standards for high-speed data transfer with IBM Aspera” where for “FASP® for maximum speed,” users can “[e]xperience [IBM]’s patented transport technology that consistently ranks first in every WAN throughput test in which it is evaluated,” for “Direct-to-cloud storage,” users can “[m]ove data to, from and between major cloud object storages with Aspera natively integrated for high performance” and for “Open, scalable architecture,” users can “[l]everage virtually any cloud, hybrid or on-premises infrastructure and storage using multi-tenant SaaS [software as a service] and single-tenant architecture and autoscale capabilities.” *Id.* An IBM website with a title declaring “Accelerate collaboration with fast sharing of large files and data sets” states that “Meet the demands of complex global teams with the ability to quickly and securely exchange or share huge files and folders with each other, including customers and partners. IBM Aspera® solutions feature the patented FASP® transfer protocol — which consistently ranks first in every WAN transfer throughput benchmark — to fully use your available bandwidth to maximize transfer speeds. With the latest IBM Aspera Files SaaS and other Aspera file sending and sharing solutions, users can easily exchange big files and directories at high speed through a user-friendly interface. Advanced security, encryption and user access controls help ensure that your critical data is fully protected.” See <https://www.ibm.com/cloud/high-speed-data-transfer/send-share>. Another IBM website with a title declaring “Transfer, sync and distribute large files and big data fast” states that “For all the amazing technological progress made in analytics and cloud, the fundamental challenges of reliably transferring and distributing large files and volumes of

big data at high speed to locations around the world still persist. In fact, this big data movement problem has become more pervasive and daunting across industries with the exponential growth of data generated globally. IBM Aspera® solutions are designed to help you globally ingest, distribute and synchronize huge files and folders directly to and from any major cloud or on-premises storage, without compromising performance or security. Built on Aspera’s patented FASP® transfer protocol — which consistently ranks first in every WAN transfer throughput benchmark — IBM Aspera solutions offer secure, scalable capabilities that can grow with your business.” See <https://www.ibm.com/cloud/high-speed-data-transfer>. Another IBM website with a title declaring “Automate and manage reliable file transfer workflows at scale” states that “IBM Aspera® automation and management solutions provide robust file transfer orchestration, monitoring, control and reporting capabilities. These solutions save time, increase resiliency, and maximize the value of network infrastructure by verifying data integrity and security in transit and triggering notifications, data processing and format translation on arrival. Designed for extreme scalability, they can accommodate virtually any set of workflow requirements to transfer big files and data sets between any location using the patented IBM Aspera FASP® transfer protocol, whether on premises or in public, private or hybrid cloud platforms. Highly visual graphical interfaces enable easy workflow design and testing, accurate real-time transfer monitoring and progress, and extensive customizable reporting.” See <https://www.ibm.com/cloud/high-speed-data-transfer/manage-automate-workflow>.

62. As a further example, an IBM website with the title “IBM CommonStore single instance store (SIS) feature restrictions” states that: “The IBM® CommonStore documentation describes the single instance store (SIS) feature and claims: ‘Single-instance storing ensures that only one copy of a document is kept in the archive, no matter how many times the same document was archived by different users.’” See <http://www-01.ibm.com/support/docview.wss?uid=swg21255187>.

63. As a further example, an IBM website describing the IBM Storwize V7000 Storage Systems states that: “The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.” See <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077>. Moreover, a document describing the IBM FlashSystem V9000 states that “IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” (para. 26 on page 4 of 7) and “Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” (para. 40 on page 7 of 7). See <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF>.

64. As a further example, an IBM document on its ProtecTIER and Tivoli Storage Manager states that “IBM ProtecTIER’s unique, patented deduplication technology is unmatched in the industry in terms of its scalability, performance and data integrity characteristics. ProtecTIER is offered as a gateway or disk-based appliance” (page 2) and “Another option for server side deduplication is Tivoli Storage Manager Version 6 native storage pool deduplication which offers reduction of backup and archive data. Native deduplication helps customers store more backup data on the same disk

capacity, thereby enabling additional recovery points without incurring additional hardware costs” (page 2) as well as “ ProtecTier and Tivoli Storage Manager native deduplication provide two options for server side deduplication of data” (page 3). *See* <https://www.ibm.com/developerworks/community/wikis/form/anonymous/api/wiki/f731037e-c0cf-436e-88b5-862b9a6597c3/page/7d14e7c2-752d-450c-9fdf-c7fcf324f18/attachment/944d976c-6b61-40e3-874d-e2f7e9cb877d/media/IBM%20Data%20Deduplication.pdf>. Moreover, a paper from IBM describes in detail data deduplication, including data deduplication with ProtecTIER and Tivoli Storage Manager. *See* <http://www.redbooks.ibm.com/redbooks/pdfs/sg247888.pdf>.

65. In addition, various sections of papers on IBM products such as the IBM TS7600 with ProtecTIER Version 3.3 and IBM TS7680 Deduplication ProtecTIER Gateway for System z also specifically mention the feature of “content-aware data deduplication.” *See* <https://books.google.com/books?id=CbLEAgAAQBAJ> (Section 1.2.2 “Content aware” on page 7, describing content-aware deduplication for the IBM System Storage TS7600 with ProtecTIER Version 3.3); <https://books.google.com/books?id=FITAAGAAQBAJ> (pages 6-7, describing content-aware data deduplication for the IBM TS7680 ProtecTIER Gateway for System z).

66. IBM also induces its customers to use the Accused Instrumentalities to infringe other claims of the ’908 patent. IBM specifically intended and was aware that these normal and customary activities would infringe the ’908 patent. IBM performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ’908 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, IBM engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, IBM 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 ’908 patent, knowing that such use constitutes infringement of the ’908

patent.

67. IBM also indirectly infringes the '908 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 '908 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 create a system comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form. Because the Accused Instrumentality is designed to operate as the claimed system 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. IBM's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '908 Patent.

68. The Accused Instrumentality includes a memory device and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block. For example, the physical appliance versions of the Accused Instrumentality must contain a memory device, and the virtual appliance versions of the Accused Instrumentality must run on hardware containing a memory device running the hypervisor on which the virtual appliance versions run. *See, e.g.,*

<http://www-01.ibm.com/support/docview.wss?uid=tss1wp102527&aid=1> (mentioning memory devices, memories and memories used for processors on page 8 by stating “[i]n order to support additional memory for Real-time Compression, an additional 23 GB of random access memory (RAM) is supported in each canister” and “processor core allocation when Real-time Compression is enabled” (also page 8) as well as, under “Processor utilization comparison” the text “In the second generation of Storwize V7000, it is possible to dedicate a set of processors for compression...” (page 17)); <http://www.redbooks.ibm.com/redpapers/pdfs/redp4859.pdf> (describing memory devices, memories and memories used for processor cores on pages 16, 23, 36, 74-76, 86, 89-90, 93 and describing processor utilization for compression on pages 28, 75-76, 82, 89-93).

69. The Accused Instrumentality compresses (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block.). *See, e.g.,* <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=877/ENUSZA12-1077> (“The Real-time Compression capabilities of the V7000 allows customers to store active data using less physical capacity, supporting lower costs and making this one of the most important storage efficiency products introduced in years.”); *See* <https://midlandinfosys.com/pdf/ibm-flashsystem-v9000-svc-faq.PDF> (“IBM has dozens of patents and years of research on the compression technology included in the FlashSystem V9000 (and other IBM storage solutions). Our compression algorithm, in client testing, demonstrates a higher compression ratio (resulting in more savings for our clients) and a lower latency than competing solutions” [para. 26 on page 4 of 7] and “Real-time Compression involves complex algorithms that require significant control enclosure resources, so maximum performance capabilities are reduced when it is enabled. However, given that a system implementing Real-time Compression can provide

up to 300,000 random 4K read IOPS per building block (or up to 1.2 million IOPS total), the capability of the FlashSystem still exceeds what is required for many client use cases and is more than our competitors provide. Unlike many all-flash competitors, IBM believes it is important to offer clients flexibility to determine if the cost benefits of compression outweigh the performance overhead.” [para. 40 on page 7 of 7].”)

70. The Accused Instrumentality stores the compressed first and second data blocks on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form. For example, users or customers can “[d]iscover IBM Aspera high-speed data transfer capabilities” where for “High-speed collaboration” users can “[s]end and share large files and data sets at maximum speeds,” for “Big data transport and sync,” users can “[q]uickly transfer, distribute and sync huge files and data sets globally” and for “Transfer automation and management,” users can “[f]ully orchestrate, monitor and control data transfer and workflows.” See <https://www.ibm.com/cloud/high-speed-data-transfer>. Furthermore, users or customers can also “[r]edefine the standards for high-speed data transfer with IBM Aspera” where for “FASP® for maximum speed,” users can “[e]xperience [IBM]’s patented transport technology that consistently ranks first in every WAN throughput test in which it is evaluated,” for “Direct-to-cloud storage,” users can “[m]ove data to, from and between major cloud object storages with Aspera natively integrated for high performance” and for “Open, scalable architecture,” users can “[l]everage virtually any cloud, hybrid or on-premises infrastructure and storage using multi-tenant SaaS [software as a service] and single-tenant architecture and autoscale capabilities.” *Id.* An IBM website with a title declaring “Accelerate collaboration with fast sharing of large files and data sets” states that “Meet the demands of complex global teams with the ability to quickly and securely exchange or share huge files and folders with each other, including customers and partners. IBM Aspera® solutions feature the patented FASP® transfer protocol — which consistently ranks first in every WAN

transfer throughput benchmark — to fully use your available bandwidth to maximize transfer speeds. With the latest IBM Aspera Files SaaS and other Aspera file sending and sharing solutions, users can easily exchange big files and directories at high speed through a user-friendly interface. Advanced security, encryption and user access controls help ensure that your critical data is fully protected.” See <https://www.ibm.com/cloud/high-speed-data-transfer/send-share>.

71. On information and belief, IBM also infringes, directly and through induced infringement and contributory infringement, and continues to infringe other claims of the '908 patent.

72. 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, IBM has injured Realtime and is liable to Realtime for infringement of the '908 patent pursuant to 35 U.S.C. § 271.

73. As a result of IBM's infringement of the '908 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for IBM's infringement, but in no event less than a reasonable royalty for the use made of the invention by IBM, 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 IBM has infringed, either literally and/or under the doctrine of equivalents, the '728 Patent, the '530 Patent, and the '908 Patent (“asserted patents”).

b. A permanent injunction prohibiting IBM from further acts of infringement of the asserted patents.

c. A judgment and order requiring IBM to pay Plaintiff its damages, costs,

expenses, and prejudgment and post-judgment interest for its infringement of the asserted patents.

d. A judgment and order requiring IBM 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: April 30, 2018

Respectfully submitted,

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