UNITED STATES DISTRICT COURT
DISTRICT OF DELAWARE

REALTIME DATA LLC d/b/a IXO,

      Plaintiff,

      v.

CLOUDERA, INC.,

      Defendant.

C.A. No. _____

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT
AGAINST CLOUDERA, 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 Cloudera, Inc. ("Cloudera" 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 50 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

1

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

2.   On information and belief, Cloudera is a Delaware corporation with its principal place of business at 395 Page Mill Road, Palo Alto, CA 94306. Cloudera can be served through its registered agent, Corporation Service Company, 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 Cloudera in this action because Cloudera 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 Cloudera would not offend traditional notions of fair play and substantial justice. Cloudera, 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, Cloudera is incorporated in Delaware, resides in Delaware, has transacted business in the District of Delaware, and has committed acts of direct and indirect infringement in the District of Delaware.

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

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

7.   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.

8.   On information and belief, Cloudera has offered for sale, sold and/or imported into the United States Cloudera products and services that infringe the '728 patent, and continues to do so. By way of illustrative example, these infringing products and services include, without limitation, Cloudera's products and services, *e.g.*, Cloudera Enterprise, Cloudera Essentials, Cloudera Express, Cloudera Distribution including Apache Hadoop, and all versions and variations thereof since the issuance of the '728 Patent ("Accused Instrumentalities").

9.   On information and belief, Cloudera has directly infringed and continues to infringe the '728 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 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, Cloudera uses the Accused Instrumentalities, which are infringing systems, 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 Cloudera's customers.

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

11.   Cloudera'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 on compatible systems to infringe Claim 1 of the '728 Patent, knowing that when the Accused Instrumentalities are used in their 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

4

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.   For example, Cloudera explains to customers the benefits of using the Accused Instrumentalities, such as by touting their performance advantages: "Data compression and compression formats can have a significant impact on performance. Three important places to consider data compression are in MapReduce and Spark jobs, data stored in HBase, and Impala queries. For the most part, the principles are similar for each. You must balance the processing capacity required to compress and uncompress the data, the disk IO required to read and write the data, and the network bandwidth required to send the data across the network. The correct balance of these factors depends upon the characteristics of your cluster and your data, as well as your usage patterns." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html.   Moreover,   Cloudera   further   explains performance advantages of deduplication: "Remove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.   For similar reasons, Cloudera also induces its customers to use the Accused Instrumentalities to infringe other claims of the '728 Patent.   Cloudera

specifically intended and was aware that the normal and customary use of the Accused Instrumentalities on compatible systems would infringe the '728 Patent. Cloudera 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, Cloudera engaged in such inducement to promote the sales of the Accused Instrumentalities, *e.g.,* through Cloudera'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, Cloudera 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 Instrumentalities with compatible systems will result in infringement of the '728 Patent.

12.   Cloudera 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

6

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. Cloudera's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '728 Patent.

13.   The Accused Instrumentalities include a system for compressing data, comprising a processor. For example, Cloudera products and services are deployed on server clusters that include processors.

CDH

Accumulo

Component	Java Heap	CPU	Disk
Master	Minimum: 1 GiB • 100-1000 tablets: 4 GB • 10,000 or more tablets with 200 or more Tablet Servers: 8 GB • 10,000 or more tablets with 300 or more Tablet Servers: 12 GB	2 Cores. Add more for large clusters or bulk load.	1 disk for local logs

*See,e.g.,*https://www.cloudera.com/documentation/enterprise/release-notes/topics/hardware_requirements_guide.html

14.   The Accused Instrumentalities include a system for compressing data, comprising one or more content dependent data compression encoders. For example, the Accused Instrumentalities provide that "Data compression and compression formats can have a significant impact on performance. Three important places to consider data compression are in MapReduce and Spark jobs, data stored in HBase, and Impala queries. For the most part, the principles are similar for each." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html. Furthermore, the Accused Instrumentalities perform block-level deduplication, which is a content dependent data compression encoder. In particular, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,*   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html. Performing deduplication results in compression by representing data with fewer bits.

15.   The Accused Instrumentalities comprise a single data compression encoder. For example, the Accused Instrumentalities, utilize gzip, bzip2, LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See, e.g., https://www.cloudera.com/documentation/enterprise/5-7 x/topics/introduction_compression.html.

16.   The Accused Instrumentalities analyze 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. For example, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.

17.   The Accused Instrumentalities 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. For example, the Accused Instrumentalities perform deduplication, which removes "extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.

18.   The Accused Instrumentalities perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. For example, the Accused Instrumentalities, utilize gzip, bzip2, LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html.

19.   Cloudera also infringes other claims of the '728 Patent, directly and through inducing infringement and contributory infringement.

20.   On information and belief, use of the Accused Instrumentalities in their ordinary and customary fashion results in infringement of the methods claimed by the '728 Patent.

21.   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, Cloudera has injured Realtime and is liable to Realtime for infringement of the '728 Patent pursuant to 35 U.S.C. § 271.

22.   As a result of Cloudera's infringement of the '728 Patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for

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

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

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

24.   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.

25.   On information and belief, Cloudera has offered for sale, sold and/or imported into the United States Cloudera 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, Cloudera's products and services, *e.g.*, Cloudera's products and services, *e.g.*, Cloudera Enterprise, Cloudera Essentials, Cloudera Express, Cloudera Distribution including Apache Hadoop, and all versions and variations thereof since the issuance of the '751 Patent ("Accused Instrumentalities").

26.   On information and belief, Cloudera 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 form a system for compressing data claimed by Claim 25 of the '751 Patent, including: a data server implemented on one or more processors and one or more memory systems; the data server configured to analyze content of a data block to identify a parameter, attribute, or value of the data block that excludes analysis based solely on reading a descriptor; the

11

data server configured to select an encoder associated with the identified parameter, attribute, or value; the data server configured to compress data in the data block with the selected encoder to produce a compressed data block, wherein the compression utilizes a state machine; and the data server configured to store 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, Cloudera uses the Accused Instrumentalities, which are infringing systems, 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 Cloudera's customers.

27.   On information and belief, Cloudera 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, Cloudera knew of the '751 Patent and knew of its infringement, including by way of this lawsuit.

28.   Upon information and belief, Cloudera'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 25 of the '751 Patent by making or using a data server implemented on one or more processors and one or more memory systems; the data server configured to analyze content of a data block to identify a parameter, attribute, or value of the data block that excludes analysis based solely on reading a descriptor; the data server configured to select an encoder associated with the identified parameter,

12

attribute, or value; the data server configured to compress data in the data block with the selected encoder to produce a compressed data block, wherein the compression utilizes a state machine; and the data server configured to store 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, Cloudera explains to customers the benefits of using the Accused Instrumentalities, such as by touting their efficiency: "Data compression and compression formats can have a significant impact on performance. Three important places to consider data compression are in MapReduce and Spark jobs, data stored in HBase, and Impala queries. For the most part, the principles are similar for each. You must balance the processing capacity required to compress and uncompress the data, the disk IO required to read and write the data, and the network bandwidth required to send the data across the network. The correct balance of these factors depends upon the characteristics of your cluster and your data, as well as your usage patterns." *See* *e.g.,* https://www.cloudera.com/documentation/enterprise/5-7- x/topics/introduction _compression.html. Moreover, Cloudera further explains performance advantages of deduplication: "Remove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_ cdh560_hive.html. For similar reasons, Cloudera also induces its customers to use the Accused Instrumentalities to infringe other claims of the '751 Patent.   Cloudera specifically intended and was aware that these normal and customary activities would infringe the '751 Patent.   Cloudera 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, Cloudera engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Cloudera 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.

29.   Cloudera 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 function with compatible hardware to create systems for compressing data comprising; a data server implemented on one or more processors and one or more memory systems; the data server configured to analyze content of a data block to identify a parameter, attribute, or value of the data block that excludes analysis based solely on reading a descriptor; the data server configured to select an encoder associated with the identified parameter, attribute, or value; the data server configured to compress data in the data block with the selected encoder to produce a compressed data block, wherein the compression utilizes a state machine; and the data server configured to store 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

14

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. Cloudera's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '751 Patent.

30.   The Accused Instrumentalities include a system for compressing data. For example, the Accused Instrumentalities provide "[D]ata compression and compression formats can have a significant impact on performance. Three important places to consider data compression are in MapReduce and Spark jobs, data stored in HBase, and Impala queries."   *See   e.g.,*   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html.   Moreover, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating   the   need   to   repartition   the   dataset   again."   *See   e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.

31.   The Accused Instrumentalities include a data server implemented on one or more processors and one or more memory systems. For example, Cloudera products and services are deployed on server clusters that include processors and memory systems.

CDH

Accumulo

Component	Java Heap	CPU	Disk
Master	Minimum: 1 GiB • 100-1000 tablets: 4 GB • 10,000 or more tablets with 200 or more Tablet Servers: 8 GB • 10,000 or more tablets with 300 or more Tablet Servers: 12 GB	2 Cores. Add more for large clusters or bulk load.	1 disk for local logs

See,e.g., https://www.cloudera.com/documentation/enterprise/release-notes/topics/hardware_requirements_guide.html

32.   On information and belief, all of the Accused Instrumentalities use one or more memory systems in substantially the same way.

33.   The Accused Instrumentalities include a data server configured to analyze content of a data block to identify a parameter, attribute, or value of the data block that excludes analysis based solely on reading a descriptor. For example, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.

34.   The Accused Instrumentalities include a data server configured to select an encoder associated with the identified parameter, attribute, or value. For example, the Accused Instrumentalities select between deduplication or other compression.   In particular, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again."

16

See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html. Moreover, the Accused Instrumentalities, utilize gzip, bzip2, LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html.

35.   The Accused Instrumentalities include a data server configured to compress data in the data block with the selected encoder to produce a compressed data block, wherein the compression utilizes a state machine. For example, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.

36.   The Accused Instrumentalities include a data server configured to store the compressed data block. For example, the Accused Instrumentalities have storage devices, such as SSD disks, that are managed by controllers. In particular, Cloudera explains that "SSDs   are   strongly   recommended   for   application   data   storage."

https://www.cloudera.com/documentation/enterprise/release-notes/topics/hardware_requirements_guide.html

CDH

Accumulo

Component	Java Heap	CPU	Disk
Master	Minimum: 1 GiB • 100-1000 tablets: 4 GB • 10,000 or more tablets with 200 or more Tablet Servers: 8 GB • 10,000 or more tablets with 300 or more Tablet Servers: 12 GB	2 Cores. Add more for large clusters or bulk load.	1 disk for local logs

See   e.g.,   https://www.cloudera.com/documentation/enterprise/release-notes/topics/hardware_requirements_guide.html.   On information and belief, all of the Accused Instrumentalities include a data server configured to store the compressed data block in substantially the same way.

37.   The time of the compressing the data block and the storing the compressed data block in the Accused Instrumentalities is less than the time of storing the data block in uncompressed form. 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. For example, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,*   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.

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

39.   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.

40.   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, Cloudera has injured Realtime and is liable to Realtime for infringement of the '751 Patent pursuant to 35 U.S.C. § 271.

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

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 8,717,203

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

43.   Plaintiff Realtime is the owner by assignment of United States Patent No. 8,717,203 ("the '203 Patent") entitled "Data compression systems and methods." The '203 Patent was duly and legally issued by the United States Patent and Trademark Office on May 6, 2014. A true and correct copy of the '203 Patent is included as Exhibit C.

44.   On information and belief, Cloudera has offered for sale, sold and/or imported into the United States Cloudera products and services that infringe the '203

Patent, and continues to do so. By way of illustrative example, these infringing products

and services include, without limitation, Cloudera's products and services, *e.g.*,

Cloudera's products and services, *e.g.*, Cloudera Enterprise, Cloudera Essentials,

Cloudera Express, Cloudera Distribution including Apache Hadoop, and all versions and

variations thereof since the issuance of the '203 patent ("Accused Instrumentalities").

45.   On information and belief, Cloudera has directly infringed and continues

to infringe the '203 Patent, for example, through its own use and testing of the Accused

Instrumentalities, which in the ordinary course of their operation form a system, claimed

by Claim 14 of the '203 Patent, for decompressing one or more compressed data blocks

included in one or more data packets using a data decompression engine, the one or more

data packets being transmitted in sequence from a source that is internal or external to the

data decompression engine, wherein a data packet from among the one or more data

packets comprises a header containing control information followed by one or more

compressed data blocks of the data packet.   The claimed system includes: a data

decompression processor configured to analyze the data packet to identify one or more

recognizable data tokens associated with the data packet, the one or more recognizable

data identifying a selected encoder used to compress one or more data blocks to provide

the one or more compressed data blocks, the encoder being selected based on content of

the one or more data blocks on which a compression algorithm was applied; one or more

decompression decoders configured to decompress a compressed data block from among

the one or more compressed data blocks associated with the data packet based on the one

or more recognizable data tokens; wherein: the one or more decompression decoders are

further configured to decompress the compressed data block utilizing content dependent

data decompression to provide a first decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content dependent data compression; and the one or more decompression decoders are further configured to decompress the compressed data block utilizing content independent data decompression to provide a second decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content independent data compression; and an output interface, coupled to the data decompression engine, configured to output a decompressed data packet including the first or the second decompressed data block. Upon information and belief, Cloudera uses the Accused Instrumentalities, which are infringing systems, 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 Cloudera's customers.

46.   On information and belief, Cloudera has had knowledge of the '203 Patent since at least the filing of the original Complaint in this action, or shortly thereafter, and on information and belief, Cloudera knew of the '203 Patent and knew of its infringement, including by way of this lawsuit.

47.   Upon information and belief, Cloudera'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 14 of the '203 Patent by making or using a system for decompressing, one or more compressed data blocks included in one or more data

packets using a data decompression engine, the one or more data packets being transmitted in sequence from a source that is internal or external to the data decompression engine, wherein a data packet from among the one or more data packets comprises a header containing control information followed by one or more compressed data blocks of the data packet the system claimed by Claim 14 of the '203 Patent, including: a data decompression processor configured to analyze the data packet to identify one or more recognizable data tokens associated with the data packet, the one or more recognizable data identifying a selected encoder used to compress one or more data blocks to provide the one or more compressed data blocks, the encoder being selected based on content of the one or more data blocks on which a compression algorithm was applied; one or more decompression decoders configured to decompress a compressed data block from among the one or more compressed data blocks associated with the data packet based on the one or more recognizable data tokens; wherein: the one or more decompression decoders are further configured to decompress the compressed data block utilizing content dependent data decompression to provide a first decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content dependent data compression; and the one or more decompression decoders are further configured to decompress the compressed data block utilizing content independent data decompression to provide a second decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content independent data compression; and an output interface, coupled to the data decompression engine, configured to output a decompressed data packet including the first or the second decompressed data block.   For example, Cloudera

explains to customers the benefits of using the Accused Instrumentalities, such as by touting their performance advantages:

"Data compression and compression formats can have a significant impact on performance. Three important places to consider data compression are in MapReduce and Spark jobs, data stored in HBase, and Impala queries. For the most part, the principles are similar for each. You must balance the processing capacity required to compress and uncompress the data, the disk IO required to read and write the data, and the network bandwidth required to send the data across the network. The correct balance of these factors depends upon the characteristics of your cluster and your data, as well as your usage patterns." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction

_compression.html. Moreover, Cloudera further explains performance advantages of deduplication: "Remove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_ cdh560_hive.html. For similar reasons, Cloudera also induces its customers to use the Accused Instrumentalities to infringe other claims of the '203 Patent. Cloudera specifically intended and was aware that these normal and customary activities would infringe the '203 Patent. Cloudera performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '203 Patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Cloudera engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly,

Cloudera 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 '203 patent, knowing that such use constitutes infringement of the '203 Patent.

48.   Cloudera also indirectly infringes the '203 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 '203 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 comprising: a data decompression processor configured to analyze the data packet to identify one or more recognizable data tokens associated with the data packet, the one or more recognizable data identifying a selected encoder used to compress one or more data blocks to provide the one or more compressed data blocks, the encoder being selected based on content of the one or more data blocks on which a compression algorithm was applied; one or more decompression decoders configured to decompress a compressed data block from among the one or more compressed data blocks associated with the data packet based on the one or more recognizable data tokens; wherein: the one or more decompression decoders are further configured to decompress the compressed data block utilizing content dependent data decompression to provide a first decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content dependent data compression; and the one or more decompression decoders are further configured to decompress the compressed data block utilizing content independent data decompression to provide a second decompressed data

24

block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content independent data compression; and an output interface, coupled to the data decompression engine, configured to output a decompressed data packet including the first or the second decompressed data block.   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. Cloudera's manufacture, use, sale, offering for sale, and/or importation of the Accused Instrumentality constitutes contributory infringement of the '203 Patent.

49.   The Accused Instrumentalities form a system for decompressing one or more compressed data blocks included in one or more data packets using a data decompression engine, the one or more data packets being transmitted in sequence from a source that is internal or external to the data decompression engine.   The Accused Instrumentalities utilize multiple formats of compression to compress data for backup. For example, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See* *e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.   Moreover, the Accused Instrumentalities, utilize gzip, bzip2, LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See e.g., https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html. As another example, the Accused Instrumentalities state that "[B]Zip2 can also produce more compression than GZip for some types of files, at the cost of some speed when compressing and decompressing. HBase does not support BZip2 compression." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/admin_data_ compression_performance.html. Moreover, the Accused Instrumentalities provide "[I]n case of data loss, the backup replica can be used to restore data to the production cluster." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-10-x/topics/cm_bdr_tutorials.html. To recover data from backup, the Accused Instrumentalities decompress the data.

50.   The data packets from among the one or more data packets in the Accused Instrumentalities include a header containing control information followed by one or more compressed data blocks of the data packet. The header containing control information contains information used to determine which compression format was used to compress the data. For example, the Accused Instrumentalities provide deduplication, which removes "extra map-reduce jobs if the data is already clustered by the same key,

26

eliminating   the   need   to   repartition   the   dataset   again." *See   e.g.,*
https://www.cloudera.com/documentation/enterprise/5-7-
x/topics/cm_props_cdh560_hive.html.

51.   The Accused Instrumentalities utilize multiple formats of compression to
compress data for backup.   For example, the Accused Instrumentalities provide
deduplication, which removes "extra map-reduce jobs if the data is already clustered by
the same key, eliminating the need to repartition the dataset again." *See e.g.,*
https://www.cloudera.com/documentation/enterprise/5-7-
x/topics/cm_props_cdh560_hive.html.   Moreover, the Accused Instrumentalities, utilize
gzip, bzip2, LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-7-
x/topics/introduction_compression.html.   An encoder to compress data is selected based
on content of the one or more data blocks on which a compression algorithm is applied.
To prepare to decompress the data, the Accused Instrumentalities include a data
decompression processor configured to analyze the data packet to identify one or more
recognizable data tokens associated with the data packet, the one or more recognizable
data identifying a selected encoder used to compress one or more data blocks to provide

27

the one or more compressed data blocks, the encoder being selected based on content of the one or more data blocks on which a compression algorithm was applied.

52.   To decompress the data, the Accused Instrumentalities include one or more decompression decoders configured to decompress a compressed data block from among the one or more compressed data blocks associated with the data packet based on the one or more recognizable data tokens. For example, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating   the   need   to   repartition   the   dataset   again."   *See   e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.   Moreover, the Accused Instrumentalities, utilize gzip, bzip2, LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html.   As   another   example,   the   Accused Instrumentalities state that "[B]Zip2 can also produce more compression than GZip for some types of files, at the cost of some speed when compressing and decompressing. HBase   does   not   support   BZip2   compression."   *See   e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/admin_data_

compression_performance.html. Moreover, the Accused Instrumentalities provide "[I]n case of data loss, the backup replica can be used to restore data to the production cluster." *See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-10-x/topics/cm_bdr_tutorials.html.

     53.   One of the compression formats in the Accused Instrumentalities is content dependent data decompression. For example, the Accused Instrumentalities utilize data deduplication, which removes "extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html. Moreover, the Accused Instrumentalities provide "[I]n case of data loss, the backup replica can be used to restore data to the production cluster."   *See*   *e.g.,*   https://www.cloudera.com/documentation/enterprise/5-10-x/topics/cm_bdr_tutorials.html. The one or more decompression decoders in the Accused Instrumentalities are further configured to decompress the compressed data block utilizing content dependent data decompression to provide a first decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content dependent data compression.

     54.   One of the compression formats in the Accused Instrumentalities is content independent data decompression. For example, the Accused Instrumentalities, utilize gzip, bzip2, LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html.   Moreover, the Accused Instrumentalities state that "[B]Zip2 can also produce more compression than GZip for some types of files, at the cost of some speed when compressing and decompressing. HBase does not support BZip2 compression." *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/admin_data_compression_performance.html.   The one or more decompression decoders in the Accused Instrumentalities are further configured to decompress the compressed data block utilizing content independent data decompression to provide a second decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content independent data compression.

55.   The Accused Instrumentalities include an output interface, coupled to the data decompression engine, configured to output a decompressed data packet including the first or the second decompressed data block.   For example, in the Accused Instrumentalities, the backup storage space is coupled to Ethernet, or other communication interfaces and configured to provided decompressed data. In this regard, Cloudera recommends Gigabit Ethernet or 10 Gigabit Ethernet.

https://www.cloudera.com/documentation/enterprise/release-notes/topics/hardware_requirements_guide.html.   Furthermore,   the   Accused

Instrumentalities have memory, such as RAM, into which decompressed data can be

written. As such, Cloudera recommends nodes with RAM between 60GB and 256GB.

See   e.g.,   https://www.cloudera.com/documentation/enterprise/release-notes/topics/hardware_requirements_guide.html.   On information and belief, all of the

Accused Instrumentalities have network connections that provide an output interface,

coupled to the data decompression engine, configured to output a decompressed data

packet including the first or the second decompressed data block.

56.   On information and belief, Cloudera also infringes, directly and through

induced infringement, and continues to infringe other claims of the '203 Patent.

57.   On information and belief, use of the Accused Instrumentalities in their

ordinary and customary fashion results in infringement of the methods claimed by

the '203 Patent.

58.   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, Cloudera has injured Realtime and is

liable to Realtime for infringement of the '203 Patent pursuant to 35 U.S.C. § 271.

59.   As a result of Cloudera's infringement of the '203 Patent, Plaintiff

Realtime is entitled to monetary damages in an amount adequate to compensate for

Cloudera's infringement, but in no event less than a reasonable royalty for the use made

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

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

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

61.   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, and Claims 1, 2, 4-6, 9, 11, 21, 22, 24, and 25 of the '908 Patent confirmed as patentable in a Final Written Decision of the Patent Trial and Appeal Board on October 31, 2017. A true and correct copy of the '908 Patent is included as Exhibit D.

62.   On information and belief, Cloudera has offered for sale, sold and/or imported into the United States Cloudera products and services that infringe the '908 Patent, and continues to do so. By way of illustrative example, these infringing products and services include, without limitation, Cloudera's products and services, *e.g.*, Cloudera's products and services, *e.g.*, Cloudera Enterprise, Cloudera Essentials, Cloudera Express, Cloudera Distribution including Apache Hadoop, and all versions and variations thereof since the issuance of the '908 Patent (the "Accused Instrumentality").

63.   On information and belief, Cloudera 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, Cloudera 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 Cloudera's customers.

64.   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.

65.   On information and belief, Cloudera has had knowledge of the '908 Patent since at least the filing of this First Amended Complaint or shortly thereafter, and on information and belief, Cloudera knew of the '908 Patent and knew of its infringement, including by way of this lawsuit.

66.   Upon information and belief, Cloudera'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

33

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. For example, Cloudera explains to customers the benefits of using the Accused Instrumentalities, such as by touting their performance advantages: "Data compression and compression formats can have a significant impact on performance. Three important places to consider data compression are in MapReduce and Spark jobs, data stored in HBase, and Impala queries. For the most part, the principles are similar for each. You must balance the processing capacity required to compress and uncompress the data, the disk IO required to read and write the data, and the network bandwidth required to send the data across the network. The correct balance of these factors depends upon the characteristics of your cluster and your data, as well as your usage patterns." *See e.g.,*

https://www.cloudera.com/documentation/enterprise/5-7- x/topics/introduction_

compression.html.   Moreover, Cloudera further explains performance advantages of deduplication: "Remove extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again."

See e.g., https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_

cdh560_hive.html. For similar reasons, Cloudera also induces its customers to use the Accused Instrumentalities to infringe other claims of the '908 Patent.   Cloudera specifically intended and was aware that these normal and customary activities would infringe the '908 Patent.   Cloudera 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, Cloudera engaged in such inducement to promote the sales of the Accused Instrumentalities.   Accordingly, Cloudera 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.   Cloudera 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. Cloudera'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 (e.g., deduplication) to provide a first compressed data block; and (ii) a second data block with a second compression technique (e.g., another compression), different from the first compression technique, to provide a second compressed data block.   For example, the Accused Instrumentalities also use one or more memory devices, including, e.g., solid state drives (SSD) disks.   In particular, Cloudera explains that "SSDs are strongly recommended for application data storage."   *See e.g.,* https://www.cloudera.com/documentation/ enterprise/release-notes/topics/hardware_requirements_guide.html.

CDH

Accumulo

Component	Java Heap	CPU	Disk
Master	Minimum: 1 GiB • 100-1000 tablets: 4 GB • 10,000 or more tablets with 200 or more Tablet Servers: 8 GB • 10,000 or more tablets with 300 or more Tablet Servers: 12 GB	2 Cores. Add more for large clusters or bulk load.	1 disk for local logs

See   e.g.,   https://www.cloudera.com/documentation/enterprise/release-notes/topics/hardware_requirements_guide.html.   Moreover, Cloudera further provides that deduplication removes "extra map-reduce jobs if the data is already clustered by the same key, eliminating the need to repartition the dataset again."   *See e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_

cdh560_hive.html.   Furthermore, the Accused Instrumentalities, utilize gzip, bzip2,

LZO, Snappy, or Deflate compressions.

Compression Types

Hadoop supports the following compression types and codecs:

- gzip - `org.apache.hadoop.io.compress.GzipCodec`
- bzip2 - `org.apache.hadoop.io.compress.BZip2Codec`
- LZO - `com.hadoop.compression.lzo.LzopCodec`
- Snappy - `org.apache.hadoop.io.compress.SnappyCodec`
- Deflate - `org.apache.hadoop.io.compress.DeflateCodec`

See, e.g., https://www.cloudera.com/documentation/enterprise/5-7

x/topics/introduction_compression.html.

69.   The Accused Instrumentality stores the compressed first and second data

blocks on the memory device. For example, the Accused Instrumentalities include

storage devices, such as SSD disks. In particular, Cloudera explains that "SSDs are

strongly recommended for application data storage."

https://www.cloudera.com/documentation/enterprise/release-

notes/topics/hardware_requirements_guide.html. Cloudera also provides that "[T]hree

important places to consider data compression are in MapReduce and Spark jobs, data

stored   in   HBase,   and   Impala   queries."   *See,   e.g.,*

https://www.cloudera.com/documentation/enterprise/5-7

x/topics/introduction_compression.html.   Also, compressed data blocks are stored

temporarily in volatile memory when they are created. 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, Cloudera states that "Data compression and

compression formats can have a significant impact on performance. Three important places to consider data compression are in MapReduce and Spark jobs, data stored in HBase, and Impala queries. For the most part, the principles are similar for each. You must balance the processing capacity required to compress and uncompress the data, the disk IO required to read and write the data, and the network bandwidth required to send the data across the network. The correct balance of these factors depends upon the characteristics of your cluster and your data, as well as your usage patterns."

See   e.g.,   https://www.cloudera.com/documentation/enterprise/5-7-x/topics/introduction_compression.html.   Moreover, the Accused Instrumentalities "[R]emove extra map-reduce jobs if the data is already clustered by the same key, eliminating   the   need   to   repartition   the   dataset   again." *See   e.g.,* https://www.cloudera.com/documentation/enterprise/5-7-x/topics/cm_props_cdh560_hive.html.

70.   On information and belief, Cloudera also infringes, directly and through induced infringement, and continues to infringe other claims of the '908 Patent.

71.   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, Cloudera has injured Realtime and is liable to Realtime for infringement of the '908 Patent pursuant to 35 U.S.C. § 271.

72.   As a result of Cloudera's infringement of the '908 Patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Cloudera's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cloudera, 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 Cloudera has infringed, either literally and/or under the doctrine of equivalents, the '728 Patent, the '751 Patent, the '203 Patent, and the '908 Patent;

b.   A permanent injunction prohibiting Cloudera from further acts of infringement of the '728 Patent, the '751 Patent, the '203 Patent, and the '908 Patent;

c.   A judgment and order requiring Cloudera to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for its infringement of the '728 Patent, the '751 Patent, the '203 Patent, and the '908 Patent; and

d.   A judgment and order requiring Cloudera 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   BAYARD, P.A.

OF COUNSEL   /s/ Stephen B. Brauerman
                                               Stephen B. Brauerman (No. 4952)
Marc A. Fenster (CA SBN 181067)   Sara E. Bussiere (No. 5725)
Reza Mirzaie (CA SBN 246953)   600 N. King Street, Suite 400
Paul A. Kroeger (CA SBN 229074)   Wilmington, DE 19801
RUSS AUGUST & KABAT   Phone: (302) 655-5000
12424 Wilshire Boulevard, 12th Floor   sbrauerman@bayardlaw.com
Los Angeles, CA 90025   sbussiere@bayardlaw.com
(310) 826-7474
mfenster@raklaw.com   *Attorneys for Plaintiff Realtime Data LLC*
rmirzaie@raklaw.com   *d/b/a IXO*
pkroeger@raklaw.com