

**UNITED STATES DISTRICT COURT
IN THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

DATA SCAPE LIMITED,

Plaintiff,

v.

DELL TECHNOLOGIES INC., DELL INC.,
and EMC CORPORATION,

Defendants.

C.A. No. 6:19-cv-00311

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 Data Scape Limited (“Plaintiff,” “Data Scape”) makes the following allegations against defendants Dell Technologies Inc., Dell Inc., and EMC Corporation (each “Defendant” or collectively “Defendants”):

PARTIES

1. Data Scape is a company organized under the laws of Ireland with its office located at Office 115, 4-5 Burton Hall Road, Sandyford, Dublin 18, Ireland.

2. On information and belief, defendant Dell Technologies Inc. is a Delaware corporation with a principal place of business at One Dell Way, Round Rock, Texas 78682. Dell Technologies may be served through its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808.

3. On information and belief, defendant Dell Inc. is a Delaware corporation with a principal place of business at One Dell Way, Round Rock, Texas 78682. Dell Inc. has additional offices at 1404 Park Center Dr., Austin, Texas, 701 E. Parmer Lane, Bldg. PS2, Austin, Texas, 12500 Tech Ridge Road, Austin, Texas, 9715 Burnet Road, Austin,

Texas, and 4309 Emma Browning Avenue, Austin, Texas. Dell Inc. is wholly owned by its corporate parent, Dell Technologies Inc. Dell may be served through its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808.

4. On information and belief, defendant EMC Corporation is a Massachusetts corporation with a principal place of business at One Dell Way, Round Rock, Texas 78682, and a secondary place of business at 176 South Street, Hopkinton, Massachusetts 01748. On further information and belief, EMC has additional offices at 501 Congress Avenue, Suite 200, Austin, Texas, 11044 Research Blvd., Building D, Suite D-500, Austin, Texas, 3900 N. Capital of Texas Highway, Suites 400 & 500, Austin, Texas, 6500 River Place Blvd., Suites 100 & 300 Austin, Texas, and 110 San Antonio Street, Suite 409. EMC may be served through its registered agent, Corporation Service Company, at 211 E. 7th St., Austin, TX. EMC Corporation is wholly owned by its corporate parent, Dell Technologies Inc.

JURISDICTION AND VENUE

5. 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).

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

7. Venue is proper in this district under 28 U.S.C. § 1400(b). Each defendant has established places of business in the Western District of Texas. Each defendant is registered to do business in Texas. Upon information and belief, each defendant has transacted business in this District and has committed acts of direct and indirect infringement in this District.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 10,277,675

8. Data Scope is the owner by assignment of United States Patent No. 10,277,675 (“the ’675 Patent”), entitled “Communication System And Its Method and Communication Apparatus And Its Method.” The ’675 Patent was duly and legally issued by the United States Patent and Trademark Office on July 17, 2018. A true and correct copy of the ’675 Patent is included as Exhibit A.

9. Each defendant has offered for sale, sold and/or imported into the United States products and services that infringe the ’675 Patent, and continues to do so. By way of illustrative example, these infringing products and services include, without limitation, Defendant’s products and services, *e.g.*, Data Domain software and hardware, RecoverPoint software and hardware, and all versions and variations thereof since the issuance of the ’675 Patent (“Accused Instrumentalities”).

10. Each defendant has directly infringed and continues to infringe the ’675 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.

Each defendant uses the Accused Instrumentalities for its own internal non-testing business purposes, while testing the Accused Instrumentalities, and while providing technical support and repair services for the Accused Instrumentalities to its customers.

11. For example, the Accused Instrumentalities infringe Claim 1 (as well as other claims) of the '675 Patent. One non-limiting example of the Accused Instrumentalities' infringement is presented below:

12. The Accused Instrumentalities include “[a] communication system including a first apparatus having a first hardware storage medium, and a second apparatus.” For example, the Accused Instrumentalities communicate data stored on one device (e.g. a Data Domain system) to another device (e.g. a second Data Domain system). *See, e.g.*, EMC Data Domain Operating System Version 5.7 Administration Guide (“Data Domain system features ensure data integrity, reliable restoration, efficient resource usage, and ease of management. *** The EMC Data Domain Replicator sets up and manages the replication of backup data between two Data Domain systems. A Replicator pair consists of a source and a destination system and replicates a complete data set or directory from the source system to the destination system. An individual Data Domain system can be a part of multiple replication pairs and can serve as a source for one or more pairs and a destination for one or more pairs. After replication is started, the source system automatically sends any new backup data to the destination system.”).

13. The Accused Instrumentalities include a second apparatus comprising: “a second hardware storage medium configured to store management information of data to be transferred to said first storage medium.” For example, a Data Domain system includes disks and/or solid-state storage medium. *See, e.g.*, Administration Guide (“Storage in most

Data Domain systems is set up in a double parity RAID 6 configuration (two parity drives). Additionally, most configurations include a hot spare in each enclosure, except the DD1xx series systems, which use eight disks. *** To keep data synchronized during a hardware or power failure, the Data Domain system uses NVRAM (non-volatile RAM) to track outstanding I/O operations. An NVRAM card with fully charged batteries (the typical state) can retain data for a period of hours, which is determined by the hardware in use.”). The second storage medium is configured to store management information of data to be transferred, e.g. replication configuration settings, folder metadata, etc.

14. The Accused Instrumentalities further include a second apparatus comprising “a hardware interface configured to communicate data with said first apparatus.” For example, a Data Domain system can connect to another Data Domain system over a wide area network. *See, e.g.*, Whitepaper H7082: Dell EMC Data Domain Replicator (“In comparison, replication uses the wide area network (WAN) as the transport mechanism for data instead of tapes and trucks, which significantly reduces the cost, complexity and risk. *** In DD OS, data is deduplicated as it is written to the source system and replication preserves deduplication. This ensures that the network is efficiently utilized for creating a DR copy of backup and archive data.”).

15. The Accused Instrumentalities further include a second apparatus comprising “a processor configured to: detect whether said first apparatus and said second apparatus are connected.” For example, Data Domain Replicator uses a detector to determine whether it is connected to the first apparatus. *See, e.g.*, Administration Guide (“To start replication between a source and destination, use the replication initialize

command on the source. This command checks that the configuration and connections are correct and returns error messages if any problems appear.”).

16. The Accused Instrumentalities further include a second apparatus comprising “a processor configured to: . . . select certain data to be transferred” [and] “edit said management information based on said selection without regard to the connection of said first apparatus and said second apparatus.” For example, Data Domain Replicator includes both command-line and graphical tools to select a directory, managed file, or MTree to be transferred. The tools edit internal configuration information to maintain those settings. On information and belief, the editing occurs without regard to the connection of the first apparatus. *See, e.g.*, Administration Guide (“You can manage replication using the Data Domain System Manager (DD System Manager) or the Data Domain Operating System (DD OS) Command Line Interface (CLI).”); H7082:

MANAGED FILE REPLICATION

Managed file replication using DD Boost allows the backup software to control the replication on a per-file basis. When integrated with DD Boost, the backup software’s users can configure policies to selectively replicate the individual backup image or dataset to another system after completion of the backup. Unlike traditional vaulting or cloning to tape, the data is not read by the backup server to be written elsewhere. Instead, the backup software delegates the data movement to the DD system; thereby leveraging the most efficient method available to create a DR copy of the data.

The backup software decides when to get started, and knows when it is finished, based on interactive signaling between DD Boost and the Data Domain system. Using this approach, the backup software knows that the destination holds a copy of the file that is separate and different from the source’s file, and retention periods for the two can be managed independently, for example, to keep full backups longer on the DR site. Furthermore, the backup operator has the flexibility to decide which backup images need to be replicated, and which ones do not require DR protection; e.g. user may decide that daily incremental backups do not need to be replicated, but weekly full backups should be replicated offsite.

CONTENT AWARE REPLICATION

Backup applications can write virtual synthetic full backups to Data Domain systems using the DD Boost protocol. The virtual full backups are synthesized from existing backups on the DD system, and provide significant performance improvements and network utilization reduction when writing backups.

DD Replicator applies the same synthesis optimizations for synthetic full backups to deliver similar performance improvements and network utilization reduction. The synthetic replication optimization is applicable with both Managed File replication and MTree replication.

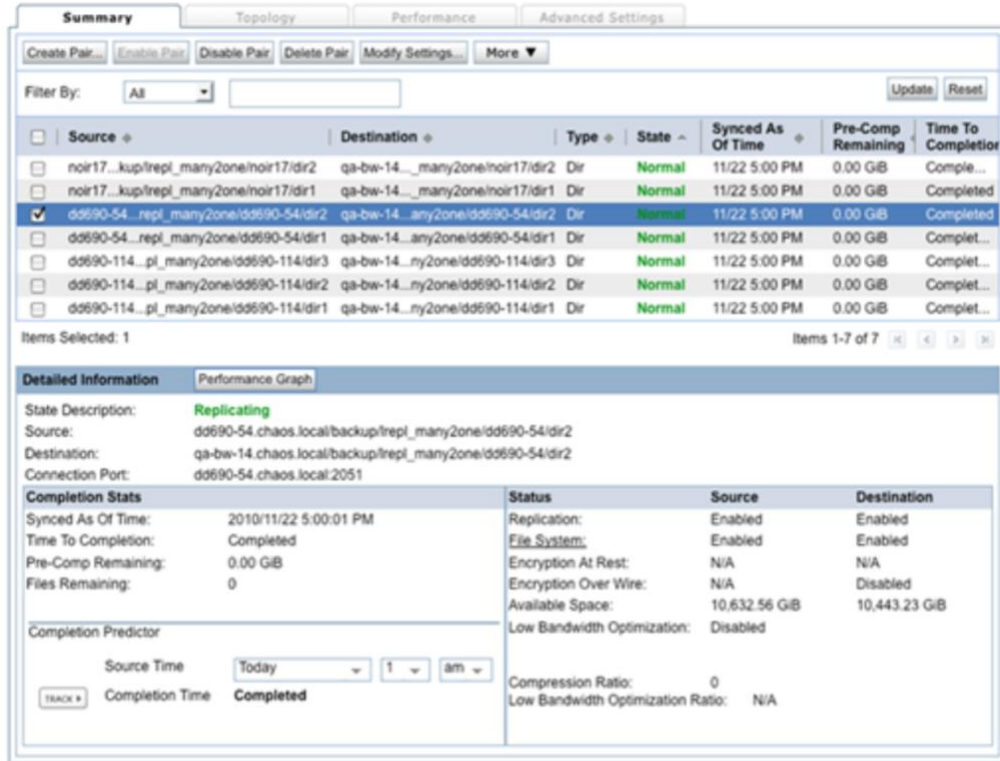
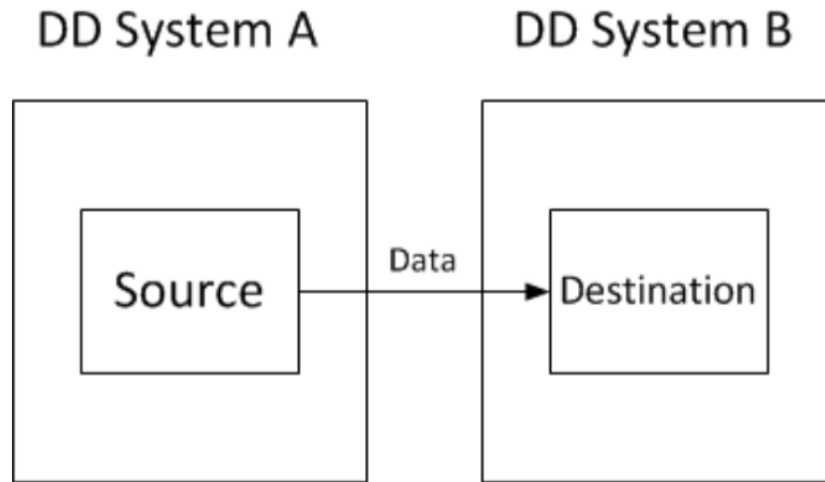


Figure 12: Detailed views of replication configuration and status

17. The Accused Instrumentalities further include a second apparatus comprising “a processor configured to: . . . compare said management information edited by said processor with management information of data stored in said first storage medium.” For example, the “DD source system” replicates, i.e. transmits, data from the source system to the destination system based on management information of data stored in the first system. *See, e.g., H7082:*

The simplest type of replication is from a DD source system to a DD destination system, otherwise known as a *one-to-one* replication pair. This replication topology can be configured with directory, MTree, or collection replication types.

Figure 21 One-to-one replication pair



Data flows from the source to the destination system.

In Figure 3 below, Metadata exchange between the source and destination ensures that a data segment only needs to be sent to the destination once, irrespective of where the data comes from. This provides significant efficiencies over the WAN in many-to-one deployments since common segments on different sources only need to be sent once.

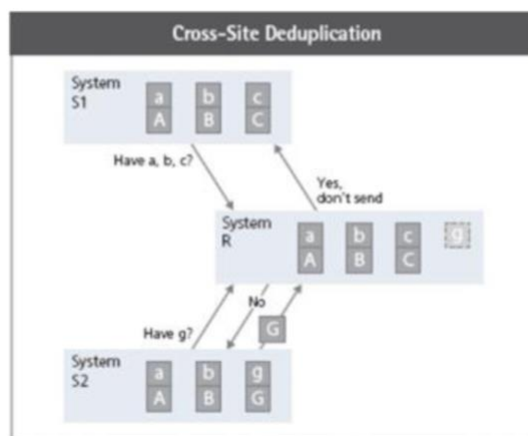


Figure 3: Cross-Site Deduplication

18. The Accused Instrumentalities further include a second apparatus comprising “a processor configured to: . . . transmit the selected data stored in said second apparatus to said first apparatus via said hardware interface based on said management information edited by said processor when said processor detects that said first apparatus and said second apparatus are connected based upon a result of the comparison.” For example, the Accused Instrumentalities control data replication to ensure that only the data selected by the editor is replicated, and only when the first and second apparatuses are connected (e.g. not in an erroneous “Disconnected” state). *See, e.g., Administration Guide:*

Item	Description
Source	System and path name of the source context, with format <i>system.path</i> . For example, for directory <i>dir1</i> on system <i>dd120-22</i> , you would see <i>dd120-22.chaos.local/data/coll/dir1</i> .
Destination	System and path name of destination context, with format <i>system.path</i> . For example, for MTree <i>MTree1</i> on system <i>dd120-44</i> , you would see <i>dd120-44.chaos.local/data/coll/MTree1</i> .
Type	Type of context: MTree, directory (Dir), or Pool.
State	Possible states of replication pair status include: <ul style="list-style-type: none"> • Normal – If the replica is Initializing, Replicating, Recovering, Resyncing, or Migrating. • Idle – For MTree replication, this state can display if the replication process is not currently active or for network errors (such as the destination system being inaccessible). • Warning – If there is an unusual delay for the first five states, or for the Uninitialized state. • Error – Any possible error states, such as Disconnected.
Synced As Of Time	Timestamp for last automatic replication sync operation performed by the source. For MTree replication, this value is updated when a snapshot is exposed on the destination. For directory replication, it is updated when a sync point inserted by the source is applied. A value of unknown displays during replication initialization.

See also H7082:

MANAGED FILE REPLICATION

Managed file replication using DD Boost allows the backup software to control the replication on a per-file basis. When integrated with DD Boost, the backup software's users can configure policies to selectively replicate the individual backup image or dataset to another system after completion of the backup. Unlike traditional vaulting or cloning to tape, the data is not read by the backup server to be written elsewhere. Instead, the backup software delegates the data movement to the DD system; thereby leveraging the most efficient method available to create a DR copy of the data.

The backup software decides when to get started, and knows when it is finished, based on interactive signaling between DD Boost and the Data Domain system. Using this approach, the backup software knows that the destination holds a copy of the file that is separate and different from the source's file, and retention periods for the two can be managed independently, for example, to keep full backups longer on the DR site. Furthermore, the backup operator has the flexibility to decide which backup images need to be replicated, and which ones do not require DR protection; e.g. user may decide that daily incremental backups do not need to be replicated, but weekly full backups should be replicated offsite.

CONTENT AWARE REPLICATION

Backup applications can write virtual synthetic full backups to Data Domain systems using the DD Boost protocol. The virtual full backups are synthesized from existing backups on the DD system, and provide significant performance improvements and network utilization reduction when writing backups.

DD Replicator applies the same synthesis optimizations for synthetic full backups to deliver similar performance improvements and network utilization reduction. The synthetic replication optimization is applicable with both Managed File replication and MTree replication.

The screenshot displays a software interface for managing replication. At the top, there are tabs for 'Summary', 'Topology', 'Performance', and 'Advanced Settings'. Below the tabs are buttons for 'Create Pair...', 'Enable Pair', 'Disable Pair', 'Delete Pair', 'Modify Settings...', and 'More'. A 'Filter By:' dropdown is set to 'All'. A table lists several replication jobs with columns for Source, Destination, Type, State, Synced As Of Time, Pre-Comp Remaining, and Time To Completion. One job is selected, and its 'Detailed Information' is shown below. This section includes a 'Performance Graph' tab, a 'State Description' of 'Replicating', and various configuration and status details.

Source	Destination	Type	State	Synced As Of Time	Pre-Comp Remaining	Time To Completion
noir17...kup/repl_many2one/noir17/dir2	qa-bw-14...many2one/noir17/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
noir17...kup/repl_many2one/noir17/dir1	qa-bw-14...many2one/noir17/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Completed
dd690-54...repl_many2one/dd690-54/dir2	qa-bw-14...any2one/dd690-54/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Completed
dd690-54...repl_many2one/dd690-54/dir1	qa-bw-14...any2one/dd690-54/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir3	qa-bw-14...ny2one/dd690-114/dir3	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir2	qa-bw-14...ny2one/dd690-114/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir1	qa-bw-14...ny2one/dd690-114/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...

Completion Stats		Status	Source	Destination
Synced As Of Time:	2010/11/22 5:00:01 PM	Replication:	Enabled	Enabled
Time To Completion:	Completed	File System:	Enabled	Enabled
Pre-Comp Remaining:	0.00 GiB	Encryption At Rest:	N/A	N/A
Files Remaining:	0	Encryption Over Wire:	N/A	Disabled
		Available Space:	10,632.56 GiB	10,443.23 GiB
		Low Bandwidth Optimization:	Disabled	
		Compression Ratio:	0	
		Low Bandwidth Optimization Ratio:	N/A	

Figure 12: Detailed views of replication configuration and status

19. Each defendant has had knowledge of the '675 Patent and its infringement since at least the filing of the original Complaint in this action, or shortly thereafter, including by way of this lawsuit. By the time of trial, each defendant will have known and intended (since receiving such notice) that its continued actions would actively induce and contribute to the infringement of the claims of the '675 Patent.

20. Each defendant's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the claims of the '675 Patent. Use of the Accused Instrumentalities in their ordinary and customary fashion results in infringement of the claims of the '675 Patent.

21. For example, each defendant explains to customers the benefits of using the Accused Instrumentalities, such as by touting their advantages of replicating data among multiple devices in the case of Data Domain, or of replicating data among multiple sites in the case of RecoverPoint. Each defendant also induces its customers to use the Accused Instrumentalities to infringe other claims of the '675 Patent. Each defendant specifically intended and was aware that the normal and customary use of the Accused Instrumentalities on compatible systems would infringe the '675 Patent. Each defendant performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '675 Patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, each defendant engaged in such inducement to promote the sales of the Accused Instrumentalities, *e.g.*, through its user manuals, product support, marketing materials, demonstrations, installation support, and training materials to actively induce the users of the accused products to infringe the '675 Patent. Accordingly, each defendant 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 '675 Patent, knowing that such use of the Accused Instrumentalities with compatible systems will result in infringement of the '675 Patent. Accordingly, each defendant has been (since at least as of filing of the original complaint), and currently is, inducing infringement of the '675 Patent, in violation of 35 U.S.C. § 271(b).

22. Each defendant has also infringed, and continues to infringe, claims of the '675 Patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Instrumentalities, which are used in practicing the process,

or using the systems, of the '675 Patent, and constitute a material part of the invention. Defendant knows the components in the Accused Instrumentalities to be especially made or especially adapted for use in infringement of the '675 Patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way of using the Accused Instrumentalities infringes the patent claims, and as such, is especially adapted for use in infringement. Accordingly, each defendant has been, and currently is, contributorily infringing the '675 Patent, in violation of 35 U.S.C. § 271(c).

23. For similar reasons, each defendant also infringes the '675 Patent by supplying or causing to be supplied in or from the United States all or a substantial portion of the components of the Accused Instrumentalities, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the '675 Patent if such combination occurred within the United States. For example, each defendant supplies or causes to be supplied in or from the United States all or a substantial portion of the hardware (e.g., Data Domain servers, RecoverPoint appliances) and software (e.g., Data Domain OS, RecoverPoint software) components of the Accused Instrumentalities in such a manner as to actively induce the combination of such components (e.g., by instructing users to combine multiple Data Domain or RecoverPoint servers into an infringing system) outside of the United States.

24. Each defendant also indirectly infringes the '675 Patent by supplying or causing to be supplied in or from the United States components of the Accused Instrumentalities that are especially made or especially adapted for use in infringing the '675 Patent and are not a staple article or commodity of commerce suitable for

substantial non-infringing use, and where such components are uncombined in whole or in part, knowing that such components are so made or adapted and intending that such components are combined outside of the United States in a manner that would infringe the '675 Patent if such combination occurred within the United States. Because the Accused Instrumentalities are designed to operate as the claimed system and apparatus, the Accused Instrumentalities have no substantial non-infringing uses, and any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. For example, each defendant supplies or causes to be supplied in or from the United States all or a substantial portion of the hardware (e.g., separate Data Domain servers, separate RecoverPoint appliances) and software (e.g., Data Domain OS, RecoverPoint software) components that are especially made or especially adapted for use in the Accused Instrumentalities, where such hardware and software components are not staple articles or commodities of commerce suitable for substantial noninfringing use, knowing that such components are so made or adapted and intending that such components are combined outside of the United States, as evidenced by each defendant's own actions or instructions to users in, e.g., combining multiple Data Domain or RecoverPoint servers into infringing systems, and enabling and configuring the infringing functionalities of the Accused Instrumentalities.

25. As a result of Defendant's infringement of the '675 Patent, Plaintiff Data Scape is entitled to monetary damages in an amount adequate to compensate for each Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by each Defendant, together with interest and costs as fixed by the Court.

COUNT II

INFRINGEMENT OF U.S. PATENT NO. 10,027,751

26. Data Scape is the owner by assignment of United States Patent No. 10,027,751 (“the ’751 Patent”), entitled “Communication System And Its Method and Communication Apparatus And Its Method.” The ’751 Patent was duly and legally issued by the United States Patent and Trademark Office on July 17, 2018. A true and correct copy of the ’751 Patent is included as Exhibit B.

27. Each defendant has offered for sale, sold and/or imported into the United States 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, Defendant’s products and services, *e.g.*, Data Domain software and hardware, and all versions and variations thereof since the issuance of the ’751 Patent (“Accused Instrumentalities”).

28. Each defendant has directly infringed and continues to infringe the ’751 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. Each defendant uses the Accused Instrumentalities for its own internal non-testing business purposes, while testing the Accused Instrumentalities, and while providing technical support and repair services for the Accused Instrumentalities to its customers.

29. For example, the Accused Instrumentalities infringe Claim 1 (as well as other claims) of the ’751 Patent. One non-limiting example of the Accused Instrumentalities’ infringement is presented below:

30. The Accused Instrumentalities include “[a] communication apparatus configured to transmit data to an apparatus.” For example, the Accused Instrumentalities communicate data stored on one device (e.g. a Data Domain system) to another device (e.g. a second Data Domain system). *See, e.g.*, EMC Data Domain Operating System Version 5.7 Administration Guide (“Data Domain system features ensure data integrity, reliable restoration, efficient resource usage, and ease of management. *** The EMC Data Domain Replicator sets up and manages the replication of backup data between two Data Domain systems. A Replicator pair consists of a source and a destination system and replicates a complete data set or directory from the source system to the destination system. An individual Data Domain system can be a part of multiple replication pairs and can serve as a source for one or more pairs and a destination for one or more pairs. After replication is started, the source system automatically sends any new backup data to the destination system.”).

31. The Accused Instrumentalities include a communication apparatus comprising: “a hardware storage medium configured to store management information of data to be transferred to the apparatus.” For example, a Data Domain system includes disks and/or solid-state storage medium. *See, e.g.*, Administration Guide (“Storage in most Data Domain systems is set up in a double parity RAID 6 configuration (two parity drives). Additionally, most configurations include a hot spare in each enclosure, except the DD1xx series systems, which use eight disks. *** To keep data synchronized during a hardware or power failure, the Data Domain system uses NVRAM (non-volatile RAM) to track outstanding I/O operations. An NVRAM card with fully charged batteries (the typical state) can retain data for a period of hours, which is determined by the hardware in use.”). The

second storage medium is configured to store management information of data to be transferred, e.g. replication configuration settings, folder metadata, etc.

32. The Accused Instrumentalities further include a communication apparatus comprising “a communicator configured to communicate data with the apparatus.” For example, a Data Domain system can connect to another Data Domain system over a wide area network. *See, e.g.*, Whitepaper H7082: Dell EMC Data Domain Replicator (“In comparison, replication uses the wide area network (WAN) as the transport mechanism for data instead of tapes and trucks, which significantly reduces the cost, complexity and risk. *** In DD OS, data is deduplicated as it is written to the source system and replication preserves deduplication. This ensures that the network is efficiently utilized for creating a DR copy of backup and archive data.”).

33. The Accused Instrumentalities further include a communication apparatus comprising “a detector configured to detect whether the communication apparatus and the apparatus are connected.” For example, Data Domain Replicator uses a detector to determine whether it is connected to the first apparatus. *See, e.g.*, Administration Guide (“To start replication between a source and destination, use the replication initialize command on the source. This command checks that the configuration and connections are correct and returns error messages if any problems appear.”).

34. The Accused Instrumentalities further include a communication apparatus comprising “an editor configured to select certain data to be transferred and to edit the management information based on the selection without regard to the connection of the communication apparatus and the apparatus.” For example, Data Domain Replicator includes both command-line and graphical tools to select a directory, managed file, or

MTree to be transferred. The tools edit internal configuration information to maintain those settings. On information and belief, the editing occurs without regard to the connection of the first apparatus. *See, e.g.,* Administration Guide (“You can manage replication using the Data Domain System Manager (DD System Manager) or the Data Domain Operating System (DD OS) Command Line Interface (CLI).”); H7082:

MANAGED FILE REPLICATION

Managed file replication using DD Boost allows the backup software to control the replication on a per-file basis. When integrated with DD Boost, the backup software’s users can configure policies to selectively replicate the individual backup image or dataset to another system after completion of the backup. Unlike traditional vaulting or cloning to tape, the data is not read by the backup server to be written elsewhere. Instead, the backup software delegates the data movement to the DD system; thereby leveraging the most efficient method available to create a DR copy of the data.

The backup software decides when to get started, and knows when it is finished, based on interactive signaling between DD Boost and the Data Domain system. Using this approach, the backup software knows that the destination holds a copy of the file that is separate and different from the source’s file, and retention periods for the two can be managed independently, for example, to keep full backups longer on the DR site. Furthermore, the backup operator has the flexibility to decide which backup images need to be replicated, and which ones do not require DR protection; e.g. user may decide that daily incremental backups do not need to be replicated, but weekly full backups should be replicated offsite.

CONTENT AWARE REPLICATION

Backup applications can write virtual synthetic full backups to Data Domain systems using the DD Boost protocol. The virtual full backups are synthesized from existing backups on the DD system, and provide significant performance improvements and network utilization reduction when writing backups.

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The screenshot displays a software interface for managing replication. At the top, there are tabs for 'Summary', 'Topology', 'Performance', and 'Advanced Settings'. Below these are buttons for 'Create Pair...', 'Enable Pair', 'Disable Pair', 'Delete Pair', 'Modify Settings...', and 'More'. A 'Filter By:' dropdown is set to 'All'. A table lists several replication jobs with columns for Source, Destination, Type, State, Synced As Of Time, Pre-Comp Remaining, and Time To Completion. One job is selected, and its details are shown in a 'Detailed Information' panel below. This panel includes a 'Performance Graph' tab, a 'State Description' (Replicating), source and destination paths, and connection port. It also features a 'Completion Stats' table, a 'Status' table, and a 'Completion Predictor' section with dropdowns for 'Source Time' (Today), '1', and 'am'. A 'TRACK' button is visible next to the 'Completion Time' which is 'Completed'.

Source	Destination	Type	State	Synced As Of Time	Pre-Comp Remaining	Time To Completion
noir17...kup/repl_many2one/noir17/dir2	qa-bw-14...many2one/noir17/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
noir17...kup/repl_many2one/noir17/dir1	qa-bw-14...many2one/noir17/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Completed
dd690-54...repl_many2one/dd690-54/dir2	qa-bw-14...any2one/dd690-54/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Completed
dd690-54...repl_many2one/dd690-54/dir1	qa-bw-14...any2one/dd690-54/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir3	qa-bw-14...ny2one/dd690-114/dir3	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir2	qa-bw-14...ny2one/dd690-114/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir1	qa-bw-14...ny2one/dd690-114/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...

Completion Stats		Status	Source	Destination
Synced As Of Time:	2010/11/22 5:00:01 PM	Replication:	Enabled	Enabled
Time To Completion:	Completed	File System:	Enabled	Enabled
Pre-Comp Remaining:	0.00 GiB	Encryption At Rest:	N/A	N/A
Files Remaining:	0	Encryption Over Wire:	N/A	Disabled
		Available Space:	10,632.56 GiB	10,443.23 GiB
		Low Bandwidth Optimization:	Disabled	

Figure 12: Detailed views of replication configuration and status

35. The Accused Instrumentalities further include a communication apparatus comprising “a controller configured to control transfer of the selected data stored in the communication apparatus to the apparatus via the communicator based on the management information edited by the editor when the detector detects that the communication apparatus and the apparatus are connected.” For example, the Accused Instrumentalities control data replication to ensure that only the data selected by the editor is replicated, and only when the first and second apparatuses are connected (e.g. not in an erroneous “Disconnected” state). *See, e.g., Administration Guide:*

Item	Description
Source	System and path name of the source context, with format <i>system.path</i> . For example, for directory <code>dir1</code> on system <code>dd120-22</code> , you would see <code>dd120-22.chaos.local/data/coll/dir1</code> .
Destination	System and path name of destination context, with format <i>system.path</i> . For example, for MTree <code>MTree1</code> on system <code>dd120-44</code> , you would see <code>dd120-44.chaos.local/data/coll/MTree1</code> .
Type	Type of context: MTree, directory (Dir), or Pool.
State	Possible states of replication pair status include: <ul style="list-style-type: none"> • Normal – If the replica is Initializing, Replicating, Recovering, Resyncing, or Migrating. • Idle – For MTree replication, this state can display if the replication process is not currently active or for network errors (such as the destination system being inaccessible). • Warning – If there is an unusual delay for the first five states, or for the Uninitialized state. • Error – Any possible error states, such as Disconnected.
Synced As Of Time	Timestamp for last automatic replication sync operation performed by the source. For MTree replication, this value is updated when a snapshot is exposed on the destination. For directory replication, it is updated when a sync point inserted by the source is applied. A value of unknown displays during replication initialization.

See also H7082:

MANAGED FILE REPLICATION

Managed file replication using DD Boost allows the backup software to control the replication on a per-file basis. When integrated with DD Boost, the backup software's users can configure policies to selectively replicate the individual backup image or dataset to another system after completion of the backup. Unlike traditional vaulting or cloning to tape, the data is not read by the backup server to be written elsewhere. Instead, the backup software delegates the data movement to the DD system; thereby leveraging the most efficient method available to create a DR copy of the data.

The backup software decides when to get started, and knows when it is finished, based on interactive signaling between DD Boost and the Data Domain system. Using this approach, the backup software knows that the destination holds a copy of the file that is separate and different from the source's file, and retention periods for the two can be managed independently, for example, to keep full backups longer on the DR site. Furthermore, the backup operator has the flexibility to decide which backup images need to be replicated, and which ones do not require DR protection; e.g. user may decide that daily incremental backups do not need to be replicated, but weekly full backups should be replicated offsite.

CONTENT AWARE REPLICATION

Backup applications can write virtual synthetic full backups to Data Domain systems using the DD Boost protocol. The virtual full backups are synthesized from existing backups on the DD system, and provide significant performance improvements and network utilization reduction when writing backups.

DD Replicator applies the same synthesis optimizations for synthetic full backups to deliver similar performance improvements and network utilization reduction. The synthetic replication optimization is applicable with both Managed File replication and MTree replication.

The screenshot displays the DD Replicator management console. At the top, there are tabs for 'Summary', 'Topology', 'Performance', and 'Advanced Settings'. Below these are buttons for 'Create Pair...', 'Enable Pair', 'Disable Pair', 'Delete Pair', 'Modify Settings', and 'More'. A 'Filter By:' dropdown is set to 'All'. The main table lists replication pairs with columns for Source, Destination, Type, State, Synced As Of Time, Pre-Comp Remaining, and Time To Completion. One pair is selected, and its detailed information is shown below.

Source	Destination	Type	State	Synced As Of Time	Pre-Comp Remaining	Time To Completion
noir17...kup/repl_many2one/noir17/dir2	qa-bw-14...many2one/noir17/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
noir17...kup/repl_many2one/noir17/dir1	qa-bw-14...many2one/noir17/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Completed
dd690-54...repl_many2one/dd690-54/dir2	qa-bw-14...any2one/dd690-54/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Completed
dd690-54...repl_many2one/dd690-54/dir1	qa-bw-14...any2one/dd690-54/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir3	qa-bw-14...ny2one/dd690-114/dir3	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir2	qa-bw-14...ny2one/dd690-114/dir2	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...
dd690-114...pl_many2one/dd690-114/dir1	qa-bw-14...ny2one/dd690-114/dir1	Dir	Normal	11/22 5:00 PM	0.00 GiB	Comple...

Items Selected: 1 Items 1-7 of 7

Detailed Information Performance Graph

State Description: **Replicating**

Source: dd690-54.chaos.local/backup/repl_many2one/dd690-54/dir2

Destination: qa-bw-14.chaos.local/backup/repl_many2one/dd690-54/dir2

Connection Port: dd690-54.chaos.local:2051

Completion Stats	Status	Source	Destination
Synced As Of Time: 2010/11/22 5:00:01 PM	Replication:	Enabled	Enabled
Time To Completion: Completed	File System:	Enabled	Enabled
Pre-Comp Remaining: 0.00 GiB	Encryption At Rest:	N/A	N/A
Files Remaining: 0	Encryption Over Wire:	N/A	Disabled
	Available Space:	10,632.56 GiB	10,443.23 GiB
	Low Bandwidth Optimization:	Disabled	
	Compression Ratio:	0	
	Low Bandwidth Optimization Ratio:	N/A	

Completion Predictor

Source Time: Today 1 am

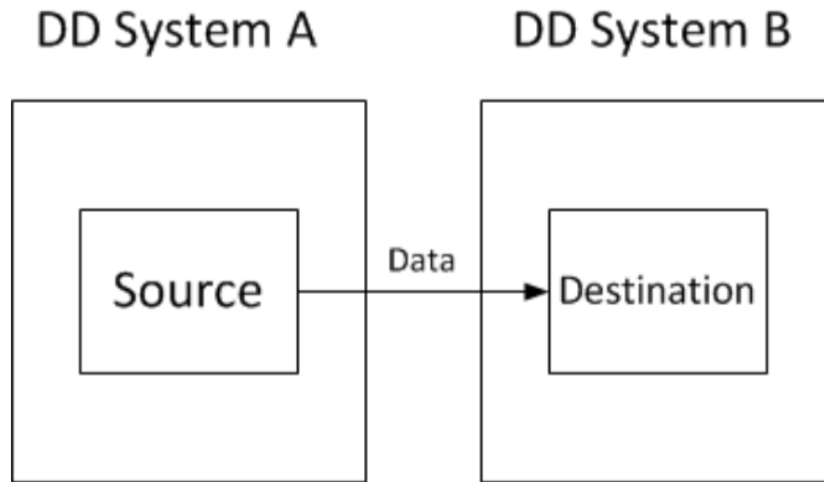
Completion Time: **Completed**

Figure 12: Detailed views of replication configuration and status

36. The Accused Instrumentalities further include a communication apparatus with a controller, “wherein the controller is configured to compare the management information edited by the editor with management information of data stored in the apparatus.” For example, the “DD source system” replicates, i.e. transmits, data from the source system to the destination system based on management information of data stored in the first system. *See, e.g., H7082:*

The simplest type of replication is from a DD source system to a DD destination system, otherwise known as a *one-to-one* replication pair. This replication topology can be configured with directory, MTree, or collection replication types.

Figure 21 One-to-one replication pair



Data flows from the source to the destination system.

In Figure 3 below, Metadata exchange between the source and destination ensures that a data segment only needs to be sent to the destination once, irrespective of where the data comes from. This provides significant efficiencies over the WAN in many-to-one deployments since common segments on different sources only need to be sent once.

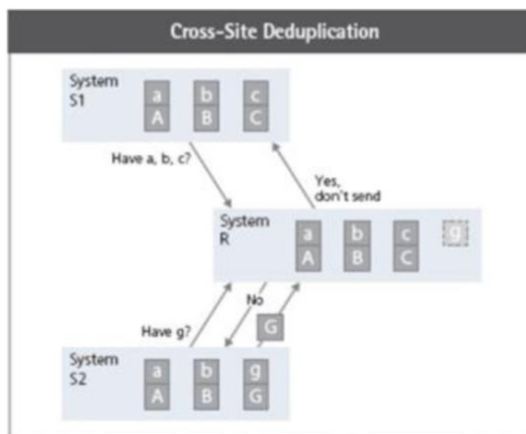


Figure 3: Cross-Site Deduplication

37. The Accused Instrumentalities further include a communication apparatus with a controller, “wherein the controller is configured to . . . determine a size of the selected data in the communication apparatus” and “transmit data in the communication apparatus based on result of the comparison and the determination.” For example, the Accused Instrumentalities keep track of the amount of space available for data transmission and will cease transferring data if storage capacity is reached. *See, e.g.*, Administration Guide:

The Data Domain system generates warning messages as the file system approaches its maximum capacity. The following information about data compression gives guidelines for disk use over time.

About the Summary tab

Click the Summary tab to show space usage statistics for the active and cloud tiers and to access controls for viewing file system status, configuring file system settings, performing a Fast Copy operation, expand capacity, and destroy the file system.

For each tier, space usage statistics include:

- **Size**—The amount of total physical disk space available for data.
- **Used**—the actual physical space used for compressed data. Warning messages go to the system log and an email alert is generated when the use reaches 90%, 95%, and 100%. At 100%, the Data Domain system accepts no more data from backup servers.

38. Each defendant has had knowledge of the ’751 Patent and its infringement since at least the filing of the original Complaint in this action, or shortly thereafter, including by way of this lawsuit. By the time of trial, each defendant will have known and intended (since receiving such notice) that its continued actions would actively induce and contribute to the infringement of the claims of the ’751 Patent.

39. Each defendant’s affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the claims of the ’751 Patent. Use of the Accused

Instrumentalities in their ordinary and customary fashion results in infringement of the claims of the '751 Patent.

40. For example, each defendant explains to customers the benefits of using the Accused Instrumentalities, such as by touting their advantages of replicating data among multiple devices in the case of Data Domain, or of replicating data among multiple sites in the case of RecoverPoint. Each defendant also induces its customers to use the Accused Instrumentalities to infringe other claims of the '751 Patent. Each defendant specifically intended and was aware that the normal and customary use of the Accused Instrumentalities on compatible systems would infringe the '751 Patent. Each defendant 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, each defendant engaged in such inducement to promote the sales of the Accused Instrumentalities, *e.g.*, through its user manuals, product support, marketing materials, demonstrations, installation support, and training materials to actively induce the users of the accused products to infringe the '751 Patent. Accordingly, each defendant 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 '751 Patent, knowing that such use of the Accused Instrumentalities with compatible systems will result in infringement of the '751 Patent. Accordingly, each defendant has been (since at least as of filing of the original complaint), and currently is, inducing infringement of the '751 Patent, in violation of 35 U.S.C. § 271(b).

41. Each defendant has also infringed, and continues to infringe, claims of the '751 Patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Instrumentalities, which are used in practicing the process, or using the systems, of the '751 Patent, and constitute a material part of the invention. Defendant knows the components in the Accused Instrumentalities to be especially made or especially adapted for use in infringement of the '751 Patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way of using the Accused Instrumentalities infringes the patent claims, and as such, is especially adapted for use in infringement. Accordingly, each defendant has been, and currently is, contributorily infringing the '751 Patent, in violation of 35 U.S.C. § 271(c).

42. For similar reasons, each defendant also infringes the '751 Patent by supplying or causing to be supplied in or from the United States all or a substantial portion of the components of the Accused Instrumentalities, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the '751 Patent if such combination occurred within the United States. For example, each defendant supplies or causes to be supplied in or from the United States all or a substantial portion of the hardware (e.g., Data Domain servers, RecoverPoint appliances) and software (e.g., Data Domain OS, RecoverPoint software) components of the Accused Instrumentalities in such a manner as to actively induce the combination of such components (e.g., by instructing users to combine multiple Data Domain or RecoverPoint servers into an infringing system) outside of the United States.

43. Each defendant also indirectly infringes the '751 Patent by supplying or causing to be supplied in or from the United States components of the Accused Instrumentalities that are especially made 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, and where such components are uncombined in whole or in part, knowing that such components are so made or adapted and intending that such components are combined outside of the United States in a manner that would infringe the '751 Patent if such combination occurred within the United States. Because the Accused Instrumentalities are designed to operate as the claimed system and apparatus, the Accused Instrumentalities have no substantial non-infringing uses, and any other uses would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. For example, each defendant supplies or causes to be supplied in or from the United States all or a substantial portion of the hardware (e.g., separate Data Domain servers, separate RecoverPoint appliances) and software (e.g., Data Domain OS, RecoverPoint software) components that are especially made or especially adapted for use in the Accused Instrumentalities, where such hardware and software components are not staple articles or commodities of commerce suitable for substantial noninfringing use, knowing that such components are so made or adapted and intending that such components are combined outside of the United States, as evidenced by each defendant's own actions or instructions to users in, e.g., combining multiple Data Domain or RecoverPoint servers into infringing systems, and enabling and configuring the infringing functionalities of the Accused Instrumentalities.

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

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Data Scape respectfully requests that this Court enter:

- a. A judgment in favor of Plaintiff that each Defendant has infringed, either literally and/or under the doctrine of equivalents, the '675 Patent and the '751 Patent (together, "asserted patents");
- b. A permanent injunction prohibiting each Defendant from further acts of infringement of the asserted patents;
- c. A judgment and order requiring each Defendant to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for its infringement of the asserted patents, as provided under 35 U.S.C. § 284;
- d. A judgment and order requiring each Defendant to provide an accounting and to pay supplemental damages to Data Scape, 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 each Defendant; and
- f. Any and all other relief as the Court may deem appropriate and just under the circumstances.

DEMAND FOR JURY TRIAL

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

Dated: May 20, 2019

Respectfully submitted,

/s/ Marc A. Fenster

Marc A. Fenster

Marc A. Fenster (CA SBN 181067)

Email: mfenster@raklaw.com

Reza Mirzaie (CA SBN 246953)

Email: rmirzaie@raklaw.com

Brian D. Ledahl (CA SBN 186579)

Email: bledahl@raklaw.com

Paul A. Kroeger (CA SBN 229074)

Email: pkroeger@raklaw.com

C. Jay Chung (CA SBN 252794)

Email: jchung@raklaw.com

Philip X. Wang (CA SBN 262239)

Email: pwang@raklaw.com

RUSS AUGUST & KABAT

12424 Wilshire Blvd., 12th Floor

Los Angeles, California 90025

Telephone: (310) 826-7474

Facsimile: (310) 826-6991

Attorneys for Plaintiff

Data Scape Limited