

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5081675

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST

**CONVEYING PARTY DATA**

Name	Execution Date
ACTIFIO, INC.	08/02/2018

**RECEIVING PARTY DATA**

<b>Name:</b>	CRESTLINE DIRECT FINANCE, L.P., AS ADMINISTRATIVE AGENT, COLLATERAL AGENT AND SOLE LEAD ARRANGER
<b>Street Address:</b>	C/O CRESTLINE INVESTORS, INC., 201 MAIN STREET
<b>Internal Address:</b>	SUITE 1900
<b>City:</b>	FORT WORTH
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	76102

**PROPERTY NUMBERS Total: 55**

Property Type	Number
Application Number:	15005716
Application Number:	14546738
Application Number:	14546747
Application Number:	14622479
Application Number:	14622487
Application Number:	14856132
Application Number:	14856093
Application Number:	14856196
Application Number:	14966718
Application Number:	14993789
Application Number:	15142880
Application Number:	14789360
Application Number:	14789345
Application Number:	15158259
Application Number:	15449562
Application Number:	15612241
Application Number:	62565683
Application Number:	62565666
Application Number:	15858369

**PATENT**

<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15967382
<b>Application Number:</b>	16004022
<b>Patent Number:</b>	8417674
<b>Patent Number:</b>	9372866
<b>Patent Number:</b>	8299944
<b>Patent Number:</b>	8843489
<b>Patent Number:</b>	8396905
<b>Patent Number:</b>	8402004
<b>Patent Number:</b>	9384207
<b>Patent Number:</b>	8965854
<b>Patent Number:</b>	8904126
<b>Patent Number:</b>	9372758
<b>Patent Number:</b>	9251198
<b>Patent Number:</b>	8688650
<b>Patent Number:</b>	8874863
<b>Patent Number:</b>	9244967
<b>Patent Number:</b>	8983915
<b>Patent Number:</b>	9501545
<b>Patent Number:</b>	9384254
<b>Patent Number:</b>	9501546
<b>Patent Number:</b>	9495435
<b>Patent Number:</b>	9563683
<b>Patent Number:</b>	9880756
<b>Patent Number:</b>	9858155
<b>Patent Number:</b>	9792187
<b>Patent Number:</b>	9772916
<b>Patent Number:</b>	9754005
<b>Patent Number:</b>	9720778
<b>Patent Number:</b>	9665437
<b>Patent Number:</b>	9659077
<b>Patent Number:</b>	9646067
<b>Patent Number:</b>	6732244
<b>Patent Number:</b>	6959369
<b>Patent Number:</b>	9904603
<b>Patent Number:</b>	10013313
<b>Patent Number:</b>	8788769

**CORRESPONDENCE DATA**

**Fax Number:** (404)581-8330

***Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.***

**Phone:** 404-581-8275

**Email:** srbrown@jonesday.com

**Correspondent Name:** SIDNEY R. BROWN, JONES DAY

**Address Line 1:** 1420 PEACHTREE STREET, NE

**Address Line 2:** SUITE 800

**Address Line 4:** ATLANTA, GEORGIA 30309

<b>NAME OF SUBMITTER:</b>	SIDNEY R. BROWN
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<b>SIGNATURE:</b>	/Sidney R. Brown/
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<b>DATE SIGNED:</b>	08/03/2018
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**Total Attachments: 10**

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**PATENT SECURITY AGREEMENT**

PATENT SECURITY AGREEMENT, dated as of August 2, 2018 ("Agreement"), between Actifio, Inc., a Delaware corporation (together with its successors and assigns, the "Assignor"), and Crestline Direct Finance, L.P., as Collateral Agent, for the benefit of the Secured Parties:

**RECITALS:**

**WHEREAS**, this Agreement is made pursuant to the Credit and Guaranty Agreement, dated as of August 2, 2018 (as amended, restated or otherwise modified from time to time, the "Credit Agreement"), by and among Actifio, Inc., certain subsidiaries of Actifio, Inc., the Lenders party thereto from time to time, and Crestline Direct Finance, L.P., as Administrative Agent, Collateral Agent and Sole Lead Arranger; and

**WHEREAS**, in connection with the Credit Agreement, the Assignor is a party to a Pledge and Security Agreement, dated as of August 2, 2018 (as amended, restated or otherwise modified from time to time, the "Security Agreement"), among the Assignor, the other grantors named therein and the Collateral Agent, pursuant to which the Assignor has granted to the Collateral Agent, for the benefit of the Secured Parties, a continuing security interest in, assignment of and lien on the Collateral described therein;

**NOW, THEREFORE**, in consideration of the foregoing, the mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Assignor hereby covenants and agrees with the Collateral Agent and the other Secured Parties as follows:

Section 1. Defined Terms. Terms used herein without definition shall have the respective meanings ascribed thereto in the Security Agreement.

Section 2. Assignment and Grant of Security Interest. As security for the prompt payment and performance of the Secured Obligations, the Assignor hereby assigns, transfers, conveys and grants to the Collateral Agent, for the benefit of the Secured Parties, a security interest in and continuing lien on all right, title and interest of the Assignor in and to the following, whether now existing or hereafter acquired:

- (i) all of the Patents issued by the United States Patent and Trademark Office (including, without limitation, those listed on Schedule A hereto);
- (ii) all applications for Patents to be issued by the United States Patent and Trademark Office (including, without limitation, those listed on Schedule A to this Agreement);
- (iii) all Patents issued by any country (other than the United States of America) or any office, agency or other governmental authority thereof;
- (iv) all applications for Patents to be issued by any office, agency or other governmental authority referred to in clause (iii) above;
- (v) all registrations and recordings with respect to any of the foregoing;
- (vi) all reissues, continuations, continuations-in-part, extensions and divisions of any of the foregoing;

(vii) all licenses and other agreements relating in whole or in part to any Patents, inventions, processes, production methods, proprietary information or know-how covered by any of the foregoing, including all rights to payments in respect thereof;

(viii) all rights to sue for past, present or future infringements of any of the foregoing;

(ix) all goodwill related to any of the foregoing;

(x) to the extent not included above, all General Intangibles of the Assignor related to the foregoing; and

(xi) all Proceeds of any and all of the foregoing.

Section 3. Reference to Separate Security Agreement. This Agreement has been entered into by the Assignor and the Collateral Agent primarily for recording purposes as contemplated by the Security Agreement. In the event of any inconsistency between any of the terms or provisions hereof and the terms and provisions of the Security Agreement, the terms and provisions of the Security Agreement shall govern.

Section 4. **GOVERNING LAW.** THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY, AND SHALL BE CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO ITS CONFLICTS OF LAW PROVISIONS (OTHER THAN SECTION 5-1401 AND SECTION 5-1402 OF THE NEW YORK GENERAL OBLIGATION LAWS), EXCEPT TO THE EXTENT THAT THE VALIDITY OR PERFECTION OF THE SECURITY INTEREST OR THE REMEDIES HEREUNDER IN RESPECT OF ANY COLLATERAL ARE GOVERNED BY THE LAW OF A JURISDICTION OTHER THAN THE STATE OF NEW YORK.

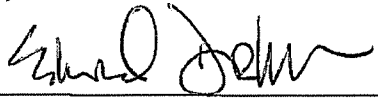
Section 5. **JURY TRIAL WAIVER.** THE ASSIGNOR HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING HEREUNDER OR UNDER ANY OF THE OTHER CREDIT DOCUMENTS (AS DEFINED IN THE CREDIT AGREEMENT) OR ANY DEALINGS RELATING TO THE SUBJECT MATTER HEREOF OR THEREOF. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT AND THAT RELATE TO THE SUBJECT MATTER OF THE CREDIT DOCUMENTS, INCLUDING CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS.

Section 6. Counterparts. This Agreement may be executed in one or more counterparts and by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument; signature pages may be detached from multiple separate counterparts and attached to a single counterpart so that all signature pages are physically attached to the same document. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or other electronic transmission shall be effective as a manually executed counterpart of this Agreement.

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and delivered by their duly authorized officers as of the date first written above.

**ACTIFIO, INC.**

By: 

Name: Edward Durkin

Title: Chief Financial Officer

[Actifio -- Patent Security Agreement]


**PATENT**  
**REEL: 046702 FRAME: 0548**

Accepted and acknowledged by:

**CRESTLINE DIRECT FINANCE, L.P.**, as  
Collateral Agent

By: Crestline Direct Finance (GP), L.L.C.,  
its general partner

By: Crestline Investors, Inc.,  
its manager

By:   
Name: John S. Cochran  
Title: Vice President

**Pending Patent Applications**

Name of Patent Application	Patent Application Number	Date of Filing	Jurisdiction of Filing
INCREMENTAL COPY PERFORMANCE BETWEEN DATA STORES	15/005716	25-Jan-2016	US
DATA MANAGEMENT VIRTUALIZATION	14/546738	18-Nov-2014	US
COMPUTERIZED METHODS AND APPARATUS FOR DATA CLONING	14/546747	18-Nov-2014	US
VIRTUAL DATA BACKUP	14/622479	13-Feb-2015	US
VIRTUAL DATA BACKUP	14/622487	13-Feb-2015	US
METHODS AND APPARATUS FOR MANAGING A LARGE-SCALE ENVIRONMENT OF COPY DATA MANAGEMENT APPLIANCES	14/856132	16-Sep-2015	US
SYSTEM AND METHOD FOR MULTI-HOP DATA BACKUP	14/856093	16-Sep-2015	US
MULTI-THREADED SMART COPY	14/856196	16-Sep-2015	US
SEARCHING AND INDEXING OF BACKUP DATA SETS	14/966718	11-Dec-2015	US
DISK GROUP BASED BACKUP	14/993789	12-Jan-2016	US
DATA PROVISIONING TECHNIQUES	15/142880	29-Apr-2016	US
INTEGRATING COPY DATA TOKENS WITH SOURCE CODE REPOSITORIES	14/789360	01-Jul-2015	US
DATA VIRTUALIZATION USING COPY DATA TOKENS	14/789345	01-Jul-2015	US
VAULT TO OBJECT STORE	15/158259	18-May-2016	US



DATA CENTER NETWORK CONTAINERS	15/449562	03-Mar-2017	US
STREAMING AND SEQUENTIAL DATA REPLICATION	15/612241	02-Jun-2017	US
INCREMENTAL VAULT TO OBJECT STORE	62/565683	29-Sep-2017	US
CAPTURING AND RESTORING SYSTEM STATE FOR PHYSICAL AND VIRTUAL MACHINES	62/565666	29-Sep-2017	US
SYSTEM AND METHOD FOR MANAGING DATA WITH SERVICE LEVEL AGREEMENTS THAT MAY SPECIFY NON-UNIFORM COPYING OF DATA	15/858369	29-Dec-2017	US
SYSTEMS AND METHODS FOR DETERMINING SERVICE LEVEL AGREEMENT COMPLIANCE	15/967382	30-Apr-2018	US
AUTOMATED BACKUP AND RESTORE OF A DISK GROUP	16/004022	08-Jun-2018	US

**Issued Registrations**

Name of Patent	Patent Number	Date of Filing	Jurisdiction of Filing
SYSTEM AND METHOD FOR CREATING DEDUPLICATED COPIES OF DATA BY SENDING DIFFERENCE DATA BETWEEN NEAR-NEIGHBOR TEMPORAL STATES	8417674	16-Nov-2010	US
SYSTEM AND METHOD FOR CREATING DEDUPLICATED COPIES OF DATA BY SENDING DIFFERENCE DATA BETWEEN NEAR-NEIGHBOR TEMPORAL STATES	9372866	09-Apr-2013	US
SYSTEM AND METHOD FOR CREATING DEDUPLICATED COPIES OF DATA STORING NON-LOSSY ENCODINGS OF DATA DIRECTLY IN A CONTENT ADDRESSABLE STORE	8299944	16-Nov-2010	US
SYSTEM AND METHOD FOR MANAGING DEDUPLICATED COPIES OF DATA USING TEMPORAL RELATIONSHIPS AMONG COPIES	8843489	16-Nov-2010	US
SYSTEM AND METHOD FOR IMPROVED GARBAGE COLLECTION OPERATIONS IN A DEDUPLICATED STORE BY TRACKING TEMPORAL RELATIONSHIPS AMONG COPIES	8396905	16-Nov-2010	US
SYSTEM AND METHOD FOR CREATING DEDUPLICATED COPIES OF DATA BY TRACKING TEMPORAL RELATIONSHIPS AMONG COPIES AND BY INGESTING DIFFERENCE DATA	8402004	16-Nov-2010	US
SYSTEM AND METHOD FOR CREATING DEDUPLICATED COPIES OF DATA BY TRACKING TEMPORAL RELATIONSHIPS AMONG COPIES USING HIGHER-LEVEL HASH STRUCTURES	9384207	20-Feb-2015	US

SYSTEM AND METHOD FOR CREATING DEDUPLICATED COPIES OF DATA BY TRACKING TEMPORAL RELATIONSHIPS AMONG COPIES USING HIGHER-LEVEL HASH STRUCTURES	8965854	19-Mar-2013	US
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SYSTEM AND METHOD FOR PERFORMING A PLURALITY OF PRESCRIBED DATA MANAGEMENT FUNCTIONS IN A MANNER THAT REDUCES REDUNDANT ACCESS OPERATIONS TO PRIMARY STORAGE	8904126	16-Nov-2010	US
SYSTEM AND METHOD FOR PERFORMING A PLURALITY OF PRESCRIBED DATA MANAGEMENT FUNCTIONS IN A MANNER THAT REDUCES REDUNDANT ACCESS OPERATIONS TO PRIMARY STORAGE	9372758	02-Dec-2014	US
DATA REPLICATION SYSTEM	9251198	19-Sep-2014	US
DATA FINGERPRINTING FOR COPY ACCURACY ASSURANCE	8688650	01-Aug-2012	US
DATA REPLICATION SYSTEM	8874863	01-Aug-2012	US
INCREMENTAL COPY PERFORMANCE BETWEEN DATA STORES	9244967	01-Aug-2012	US
SUCCESSIVE DATA FINGERPRINTING FOR COPY ACCURACY ASSURANCE	8983915	01-Aug-2012	US
SYSTEM AND METHOD FOR CACHING HASHES FOR CO-LOCATED DATA IN A DEDUPLICATION DATA STORE	9501545	18-Jun-2013	US
SYSTEM AND METHOD FOR PROVIDING INTRA-PROCESS COMMUNICATION FOR AN APPLICATION PROGRAMMING INTERFACE	9384254	18-Jun-2013	US

SYSTEM AND METHOD FOR QUICK-LINKING USER INTERFACE JOBS ACROSS SERVICES BASED ON SYSTEM IMPLEMENTATION INFORMATION	9501546	18-Jun-2013	US
SYSTEM AND METHOD FOR INTELLIGENT DATABASE BACKUP	9495435	18-Jun-2013	US
EFFICIENT DATA REPLICATION	9563683	14-May-2014	US
SUCCESSIVE DATA FINGERPRINTING FOR COPY ACCURACY ASSURANCE	9880756	10-Mar-2015	US
SYSTEM AND METHOD FOR MANAGING DATA WITH SERVICE LEVEL AGREEMENTS THAT MAY SPECIFY NON-UNIFORM COPYING OF DATA	9858155	16-Nov-2010	US
METHODS AND APPARATUS FOR REPLICATED DATA TEST FAILOVER	9792187	06-May-2015	US
RESILIENCY DIRECTOR	9772916	17-Jun-2015	US
SYSTEM AND METHOD FOR INCREMENTALLY BACKING UP OUT-OF-BAND DATA	9754005	18-Jun-2013	US
LOCAL AREA NETWORK FREE DATA MOVEMENT	9720778	17-Feb-2015	US
TEST-AND-DEVELOPMENT WORKFLOW AUTOMATION	9665437	18-Nov-2014	US
SYSTEM AND METHOD FOR EFFICIENT DATABASE RECORD REPLICATION USING DIFFERENT REPLICATION STRATEGIES BASED ON THE DATABASE RECORDS	9659077	18-Jun-2013	US
GARBAGE COLLECTION PREDICTIONS	9646067	14-May-2014	US
INSTANT VIRTUAL COPY TECHNIQUE WITH EXPEDITED CREATION OF BACKUP DATASET INVENTORY FROM SOURCE DATASET INVENTORY	6732244	22-Jan-2002	US

METHOD, SYSTEM, AND PROGRAM FOR DATA BACKUP	6959369	06-Mar-2003	US
SUCCESSIVE DATA FINGERPRINTING FOR COPY ACCURACY ASSURANCE	9904603	18-Nov-2014	US
INTEGRATED DATABASE AND LOG BACKUP	10013313	16-Sep-2015	US
SYSTEM AND METHOD FOR PERFORMING BACKUP OR RESTORE OPERATIONS UTILIZING DIFFERENCE INFORMATION AND TIMELINE STATE INFORMATION	8788769	16-Nov-2010	US