

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT						
NATURE OF CONVEYANCE:	ASSIGNMENT						
CONVEYING PARTY DATA							
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Ari Juels</td> <td>06/04/2012</td> </tr> <tr> <td>Alina M. Oprea</td> <td>05/17/2012</td> </tr> </tbody> </table>		Name	Execution Date	Ari Juels	06/04/2012	Alina M. Oprea	05/17/2012
Name	Execution Date						
Ari Juels	06/04/2012						
Alina M. Oprea	05/17/2012						
RECEIVING PARTY DATA							
Name:	EMC Corporation						
Street Address:	176 South Street						
City:	Hopkinton						
State/Country:	MASSACHUSETTS						
Postal Code:	01748						
PROPERTY NUMBERS Total: 1							
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13432577</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13432577		
Property Type	Number						
Application Number:	13432577						
CORRESPONDENCE DATA							
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Address Line 2:	Ryan, Mason & Lewis, LLP						
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ATTORNEY DOCKET NUMBER:	EMC-11-769						
NAME OF SUBMITTER:	Joseph B. Ryan						
Total Attachments: 3 source=4414-118_ASM#page1.tif source=4414-118_ASM#page2.tif source=4414-118_ASM#page3.tif							

OP \$40.00 13432577

ASSIGNMENT

WHEREAS, we, Ari Juels and Alina M. Oprea have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled **COUNTER-BASED ENCRYPTION OF STORED DATA BLOCKS**, the specification of which:

- is being executed on even date herewith and is about to be filed in the United States Patent Office;
- was filed on March 28, 2012 as U.S. Application No. 13/432,577.
- was patented under U.S. Patent No. _____ on _____.

WHEREAS, EMC Corporation (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 176 South Street, Hopkinton, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution,

reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals as set forth below:

Date:

4 June 2012

Ari Juels
Inventor's Signature

Print full name of first inventor:

Ari Juels

Residence:

Brookline, Massachusetts

Citizenship:

United States of America

Mailing Address:

55 Station Street, Apt. 3B
Brookline, Massachusetts 02445

STATE/Commonwealth of
COUNTY OF

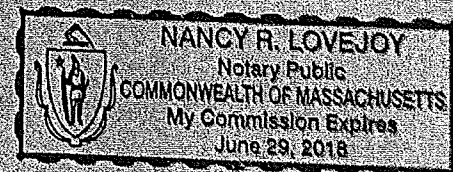
Massachusetts
Worcester

On this 4th day of June, 2012, then personally appeared before me the above-named Ari Juels known to me through satisfactory evidence of identification [] employee identification card; [x] driver's license; [] (other) _____ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Nancy R. Lovejoy
Notary Public

Print Name: Nancy R. Lovejoy

My Commission expires 6/29/12



Date: 05/17/2012

Alina M. Oprea
Inventor's Signature

Print full name of second inventor: Alina M. Oprea
Residence: Arlington, Massachusetts
Citizenship: Romania
Mailing Address: 104 Cutter Hill Road
Arlington, Massachusetts 02474

STATE/Commonwealth of MASSACHUSETTS
COUNTY OF MIDDLESEX

On this 17TH day of MAY, 2012, then personally appeared before me the above-named Alina M. Oprea known to me through satisfactory evidence of identification [] employee identification card; [] driver's license; [] (other) _____ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Garey House
Notary Public GAREY HOUSE
Print Name GAREY HOUSE
My Commission expires 11/10/2017

